भारतीय पौधा किस्म जरनल

PLANT VARIETY JOURNAL OF INDIA

पौधा किस्म और कृषक अधिकार संरक्षण प्राधिकरण
एनएएससी काम्प्लैक्स, डीपीएस मार्ग, निकट टोडापुर गांव, नई दिल्ली–110012

PROTECTION OF PLANT VARIETIES & FARMERS' RIGHTS AUTHORITY
NASC COMPLEX, DPS MARG, Opp. Todapur Village, New Delhi-110012

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'भारतीय पौधा किस्म जरनल' पौधा किस्म और कृषक अधिकार संरक्षण प्राधिकरण (पौ.कि.कृ.अ.सं.प्रा.) का आधिकारिक जरनल है। पीपीवी और एफआर अधिनियम, 2001 तथा पीपीवी और एफआर नियमावली, 2003 के नियम 2 (जी) के अंतर्गत अध्यक्ष, पीपीवी और एफआरए, एनएएससी काम्प्लैक्स (द्वितीय तल), डीपीएस मार्ग, निकट टोडापुर गांव, नई दिल्ली–110012 की ओर से प्राधिकरण के रजिस्ट्रार द्वारा प्रकाशित किया जा रहा है।

Plant Variety Journal of India is the Official Journal of the Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA) published by the Registrar on behalf of the Chairperson, PPV & FRA, NASC Complex (IInd Floor), DPS Marg, Opp. Todapur Village, New Delhi-110012 under the PPV & FR Act, 2001 and Rule 2 (g) of the PPV & FR Rules, 2003.

INDEX **PAGE NO.**

PUBLIC NOTICE

PUBLIC NOTICE

CROP SPECIFIC GUIDELINES FOR CONDUCTING DUS TEST

1. Peach
2. Plum
3. Jasmine
4. Papaya
5. China Aster
6. Tuberose
7. Strawberry

Details of Registration Certificates Published for Inviting claims of Benefit Sharing

Passport data of Varieties for filing any Objection

PUBLIC NOTICE

Sub: Notice is given under Rule 29 (8 and 9) of the PPV & FR Rules, 2003.

As a requirement under Rule 29 (8 and 9) of the PPV & FR Rules, 2003, it is hereby informed that the crop specific DUS test guideline for seven crops namely: Peach (*Prunus persica* L.) Batsch, Japanese Plum (*Prunus salicina* L.), Jasmine**(** *Jasminum auriculatum.* L.), papaya (*Carica papaya* L.), China Aster [*Callistephus chinensis* (L.) Nees.], Tuberose (*Polianthes tuberosa* L.*) and* Strawberry (*Fragaria x ananasan* Duch.) is hereby published in 'Plant Variety Journal of India', Vol. 08, No. 12, December 01, 2014. Interested parties may read these guidelines and act accordingly.

Sd/-
MANOJ SRIVASTAVA
REGISTRAR

Peach (*Prunus persica* L.) Batsch.

I. Subject

These test guidelines shall apply to all varieties of peach (including nectarine) of the species (*Prunus persica* L.) Batsch.

II. Material required

1. The Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) shall decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered for registration under the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001. Applicants submitting such plant material from a country other than India shall make sure that all customs and quarantine requirements stipulated under relevant national legislations and regulations are complied with. As a minimum the applicant may submit 10 grafted or budded plants of peach on seedling rootstock for each centre.

2. The plant material supplied should be visibly healthy, not lacking in vigour, nor affected by any important pest or disease.

3. The plant material should not have undergone any treatment, which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of tests

1. The minimum duration of the DUS tests shall normally be at least for two fruiting seasons in succeeded years.
2. The test should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for conduct of the evaluation. Each test should include total of 6 trees for each variety. In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing seasons.
3. Test plot design

The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle. The additional test protocol for special purpose may be established by PPV & FRA

1 Locations : Two
2 No. of replication : Three
3 Treatment unit : Two trees per replication
4 Spacing : 3 x3m

IV. Methods and observations

The characteristics described in the Table of characteristics (see section VII) shall be used for the testing varieties and hybrids for their DUS.

1. For the assessment of Distinctiveness and Stability, observations shall be made on 6 plants or 18 parts taken from 6 plants with the exception of the observation on fruit which should be made on at least 20 fruits. In the case of parts of plants, the number to be taken from each of the plant should be three.

2. For the assessment of uniformity a population standard of 5% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 6 plants, no off types are allowed.

3. All observations of the tree and the branches should be made during dormancy.

4. Time of bloom should be recorded from opening of first flower to 75% bloom.

5. All observations on the leaf should be made on fully developed leaves of the middle third of current season's shoot.

6. Days to maturity should be recorded from 75% blooming to harvest.

7. Observations on the mature fruit should be recorded when fruit is ready for harvest.

8. Type of assessment of characteristics as indicated in column of Table VII of characteristics is as follows.

   a) ***MG**: Measurement by a single observation of a group of plants or parts of plants*
   b) ***MS**: Measurement by a single observation of individual plants or parts of plant*
   c) ***VG**: Visual assessments by a single observation of a group of plants or part of plants*
   d) ***VS**: Visual assessments by observation of individual plants or parts of plant*

V. Grouping of varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics, which are known from experience not to vary, or to vary only slightly within a variety and which in their various states are fairly evenly distributed across all varieties in the collection are suitable for grouping purpose.

2. It is recommended that the concerned authorities use the following characteristics for grouping peach varieties .

    a. Tree growth habit (Characteristic No. 3)
    b. Flower type (Characteristic No. 11)
    c. Leaf blade margin shape (Characteristic No. 20)
    d. Petiole: shape of nectaries (Characteristic No. 24)
    e. Fruit shape (Characteristic No. 26)
    f. Stone shape (Characteristic No. 48)

VI. Characteristics and symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the Table of characteristics (Section VII) shall be used.
2. Notes (1 to 9) shall be given for each state of expression for different characteristics for the purpose of electronic data processing.
3. Legend

(*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phenological characteristics or by the environmental conditions of the testing region. Under such exceptional situation, adequate explanation shall be provided.

(+) See Explanation on the Table of characteristics in Section VIII. It is to be noted that for certain characteristics, the plant parts on which observations to be taken are given in the explanation or figure(s) for clarity and not the colour variation.

4. A code number in the sixth column of Table of characteristics indicates the optimum stage for the observation of each characteristic during growth and development of plant. The relevant growth stages corresponding to these code numbers are described below:

    a. Observations on tree vigour and habit should be made during dormant season
    b. Observations on flowers should be made at the time of full bloom (75% flowering)
    c. The observations on the leaves should be made on mature leaves from current season's shoot.
    d. Observation on fruit should be made at mature fruit
    e. Observation on stone should be made after harvest of fruit

VII. Table of characteristics

S.No.	Characteristics	States	Notes	Example variety	Stage of observation	Type of assessment
1	2	3	4	5	6	7
1 (*)	**Tree: size**	Very small	1	Kanto-5, Snowcrest,	a	VG
		Small	3	Quetta , Peshawari		
		Medium	5	Red Globe, Glohaven		
		Large	7	Fantasia, Elberta		
		Very large	9	Nimla, CITH-P-1		
2	**Tree: vigour**	Weak	3	Kanto-5, Summer Glo	a	VG
		Medium	5	Fantasia, Snow Queen		
		Strong	7	Red Globe, Cresthaven		
3 (*) (+)	**Tree: habit**	Upright	1	Red Globe, Cresthaven	a	VG
		Semi spreading	2	-		
		Spreading	3	Nimla, Early Red June		
		Drooping	4	Kanto-5		
		Weeping	5	Elberta		
4	**Flowering shoot: thickness (mm)**	Thin (<3.0)	3	Fertilia, Nimla	a	MG
		Medium (3.0-4.0)	5	Cresthaven, Snowcrest		
		Thick (>4.0)	7	Red Globe		
5	**Flowering shoot: length of internodes (mm)**	Very short <16	1	Shan-i-Pinjab, Baby Gold	a	MG
		Short 16-18	3	Glo-Haven, Snow Queen		
		Medium 18.1-20	5	Paradelux, Nimla, Vance Marble, Quetta		
		Long 20.1-22	7	Peshawari		
		Very long >22	9	Fertilia, Crest-Haven		
6	**Flowering shoot: anthocyanin coloration**	absent	1	-	a	VG
		present	9	Nimla , CITH-P-1		
7	**Flowering shoot: intensity of anthocyanin coloration**	Weak	3	Shan-e -Punjab, Nimla , CITH-P-1	a	VG
		Medium	5	Paradelux, Snowcrest		
		Strong	7	Summer Glo		

				Fantasia		
8	**Flowering shoot: density of flower buds (number on 15 cm length shoot)**	Very sparse <5	1	CITH-P-3, CITH-P-2	a	MG
		Sparse 5-10	3	Stark Early White Giant		
		Medium 10.1-15	5	Snow Queen,Vance Marble		
		Dense 15.1-20	7	Elberta, Fantasia, Kanto-5		
		Very dense >20	9	Red Globe, Glo-Haven		
9 (*) (+)	**General distribution of flower buds**	Isolated	3	Fantasia	a	VG
		In groups of two or more	7	CITH-P-1, CITH-P-2, CITH-P-3		
10 (+)	**Time of beginning of flowering**	Very early	1	Early Red June	b	MG
		Early	3	Early Glo		
		Medium	5	Fertilia		
		Late	7	Snow Queen		
		Very late	9	Snowcrest		
11 (*) **(+)**	**Flower: type**	Campanulate	3	July Elberta, Red Globe, Snow Queen	b	VG
		Rosette	5	Vance Marble, Quetta, Kanto-5		
12 (*)	**Corolla: main color (inner side)**	White	1	-	b	VG
		Ver light pink	2	-		
		Light pink	3	Quetta, Snow Queen		
		Medium pink	4	Shan-i-Pinjab, Snowcrest, Stark Early White Giant		
		Dark pink	5	-		
		Violet pink	6	Fertilia, CITH-P-1		
		Red	9	Elberta		
13 (*) **(+)**	**Petal: shape**	Narrow ovate	1	-	b	VG
		Medium ovate	3	Kanto-5, July Elberta		
		Narrow elliptic	5	Earligrande, Silver King, Snowcrest		
		Medium elliptic	7	Early Red June, Elberta		
		Circular	9	Shan-i-Pinjab, Fertalia, Red Globe		
14. (*) **(+)**	**Flower: number of Petals**	Five	3	Glohaven, Quetta	b	MG
		More than five	7	Vance Marble, Fertalia		

15 (*) **(+)**	**Stigma: position compared to anthers**	Below	1	Elberta, K-209014, Quetta,	b	VG
		At same level	2	Shan-e- Punjab, Fertalia, Andross		
		Above	3	CITH-P-1, CITH-P-2, CITH-P-3		
16 (*)	**Ovary: pubescence**	Absent	1	Fantasia, Snow Queen	b	VG
		Present	9	Cresthaven, Red Globe		
17	**Stipule: length (cm)**	Short (1-2)	3	Vance Marble, Southland-2	b	MG
		Medium (2-3)	5	Early Red June, CITH-P-1		
		Long (3-4)	7	Fantasia, Elberta		
18 (*)	**Leaf blade: ratio length/width**	Low <3.2	3	Vance Marble, Red Globe	c	MG
		Medium 3.2-4	5	Cresthaven, Glohaven		
		High >4	7	Peshawari, Summer Glo		
19 **(+)**	**Leaf blade: shape in cross section**	Concave	1	Cresthaven, July Elberta	c	VG
		Flat	2	Glohaven, Peshawari		
20 **(*)** **(+)**	**Leaf blade: margin**	Crenate	1	Peshawari, Early Red June	c	VG
		Shallow serrate	2	Glohaven, Red Globe		
		Deep serrate	3	Earligrande, Andross, Kanto-5		
21	**Leaf blade: angle at base**	Acute	1	Snow Queen, Early Red June	c	VG
		Right angle	2	Summer Glo, Stark Early White Giant		
		Obtuse	3	Elberta, July Elberta		
22	**Leaf blade: color**	Light green	3	Shan-i-Pinjab	c	VG
		Green	5	Peshawari, Elberta		
		Purplish red	7	Fertali		
23 (*)	**Petiole: Nectaries**	Absent	1	-	c	VG
		Present	9	Earligrande, Southland-2		
24 (*) **(+)**	**Petiole: shape of Nectaries**	Round	1	Silver King, Earligrande	c	VG
		Reniform	2	Peshawari, Early Red June		
25 (*)	**Fruit: size** (g)	Small 41-45	3	Snow Queen, Early Red June	d	MG
		Medium 46-50	5	Fantasia, Quetta		
		Large 51-55	7	Cresthaven, Glohaven		
26 (*) **(+)**	**Fruit: shape (in ventral view**	broad oblate	1		d	VG
		Medium oblate	2	CITH-P-3, Earligrande		
		Circular	3	Red Globe, Southland-2,		

				Mayfire		
		Broad elliptic	4	Fertalia, Andross, Nimla		
		Medium elliptic	5	Peshawari, Southland-1		
27 (*) **(+)**	**Fruit: mucron tip at pistil end**	Absent	1	Kanto-5, Fertalia	d	VG
		Present	9	July Elberta, Early Red June		
28 (*)	**Fruit: shape of pistil end (excluding mucron tip)**	Prominently pointed	1	Early Red June, Snow Queen	d	VG
		Weakly pointed	2	July Elberta, Elberta		
		Flat	3	Red Globe		
		Weakly depressed	4	Fertalia, Kanto-5		
		Strongly depressed	5	Southland-1, Southland-2		
29 (*)	**Fruit: prominence of suture**	Weak	3	Early Red June, Nimla	d	VG
		Medium	5	Glohaven, Red Globe		
		Strong	7	Fertalia, Summer Glo		
30 (*)	**Fruit: depth of stalk cavity**	Shallow	3	Summer Glo, Nimla	d	VG
		Medium	5	Red Globe, Glohaven		
		Deep	7	Cresthaven, Fantasia		
31 (*)	**Fruit: width of stalk cavity (mm)**	Narrow (1-5)	3	Summer Glo, Peshawari	d	MG
		Medium (6-19)	5	Kanto-5, Red Globe		
		Broad (10-15)	7	Cresthaven, Fanatsia		
32 (*)	**Fruit: ground color of skin**	Green	3	Nimla, Peshawari	d	VG
		Cream	5	Elberta		
		Pink	7	Stark Early White Giant		
		Yellow	9	EEarly Red June		
33 (+) (*)	**Fruit: relative area of over color of skin**	Very small	1	Nimla, Peshawari	d	VG
		Small	3	Kanto-5, Elberta		
		Medium	5	July Elberta, Quetta		
		Large	7	Summer Glo, Early Red		

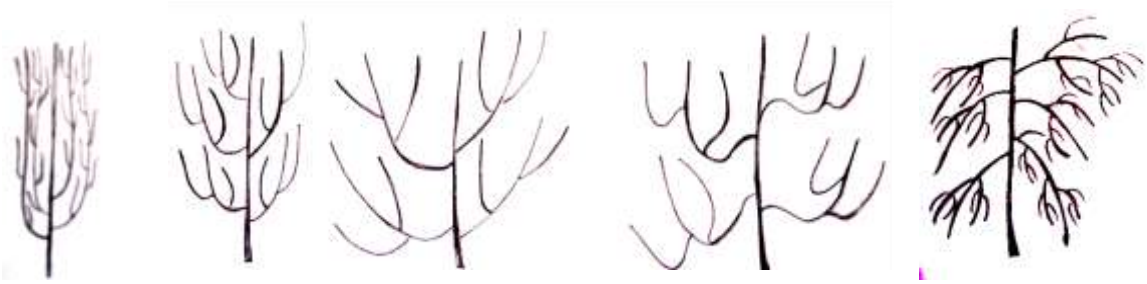
				June		
		Very large	9	Glohaven, Cresthaven		
34 (*)	**Fruit: pattern of over color of skin**	Solid flush	1	Fantasia	d	VG
		Mottled	2	Early Red June		
		Striped	3	Kanto-5, Elberta		
		Marbled	4	Cresthaven		
35 (*)	**Fruit: pubescence of skin**	Absent	1	Fanatsia	d	VG
		Present	9	CITH-P-3, Earligrande		
36 (*)	**Fruit: density of pubescence of skin**	Sparse	3	Red Globe, Southland-1	d	VG
		Medium	5	Glohaven, Peshawari		
		Dense	7	Cresthaven, Elberta		
37	**Only varieties with fruit pubescence: absent: Fruit: glossiness**	Weak	1	Fantasia	d	VG
		Medium	3	Elberta		
		Strong	5	Snow Queen		
38	**Only varieties with fruit pubescence: absent: Fruit: conspicuousness of lenticels**	Weak	1	Fantasia	d	VG
		Medium	3	Elberta		
		Strong	5	Snow Queen		
39	**Fruit: adherence of skin to flesh**	Weak	3	Nimla, Quetta, Southland-1	d	VG
		Medium	5	Elberta, Kanto-5		
		Strong	7	Red Globe, Andross		
40 (*) (+)	**Fruit: firmness of Flesh (RI)**	Very soft <30	1	Kanto-5,	d	MG
		Soft 30-35	3	Quetta, July Elberta		
		Medium 36-40	5	Peshawari, Glohaven		
		Firm 40-45	7	Elberta, Snow Queen		
		Very firm >45	9	Fantasia		
41 (*)	**Fruit: Flesh colour**	Greenish white	1	Nimla, CITH-P-2, CITH-P-3, Earligrande	d	VG
		White	2	Peshawari, Stark Early,		

		Cream white	3			
		Light yellow	4	CITH-P-1, Paradelux, Southland-1		
		Yellow	5	Elberta, Quetta, Early Red June		
		Orange yellow	6	Cresthaven, Silver King, Fantasia		
		Orange	7	-		
42	**Fruit: anthocyanin colouration of flesh next to skin**	Very weak	1	Glohaven, Early Red	d	VG
		Weak	2	Quett		
		Strong	3	Fantasia		
43	**Fruit: anthocyanin colouration of flesh in central part of flesh**	Absent	1	Nimla, CITH-P-2	d	VG
		Weak	2	Red Globe, Peshawari		
		Strong	3	Glohaven		
44 (*)	**Fruit: anthocyanin colouration of flesh around stone**	Very weak	1	Nimla, Peshawari, Southland-1	d	VG
		Week	2	Glohaven, Early Red June,		
		Strong	3	Kanto-5, Cresthaven		
45	**Fruit: flesh fiber**	Absent	3	Fantasia, Red Globe	d	VG
		Moderate	5	Nimla, Glohaven		
		Strong	7	Peshawari , CITH-P-2, CITH-P-3		
46 (+)	**Fruit: sweetness (^{o} B)**	Low <10	3	Nimla, Early Red June, Elberta	d	MG
		Medium 10-14	5	July Elberta, Stark Early		
		High >14	7	Cresthaven, Glohaven		
47 (*) **(+)**	**Stone: size compared to fruit**	Small	3	Earligrande, Glohaven	d	MG
		Medium	5	Early Red June, Cresthaven		
		Large	7	Peshawari, Kanto-5		
48 (*) **(+)**	**Stone: shape (in lateral view)**	Oblate	1	-	d	VG
		Circular	2	Cresthaven, Nimla		
		Elliptic	3	Glohaven, Elberta		
		Obovate	4	Peshawari , Quetta		
49	**Stone:**	Weak	3	Nimla, Peshawari	d	VG

	anthocyanin colouration					
		Medium	5	Summer Glo, CITH-P-3		
		Strong	7	Cresthaven		
50 (*)	**Stone: relief of surface**	Only pits	1	-	d	VG
		Predominantly pits	2	CITH-P-2, Nimla		
		Equally pits and grooves	3	Red Globe, Elberta		
		Predominantly grooves	4	Glohaven, Cresthaven		
		Only grooves	5	-		
51 (*)	**Stone: adherence to flesh**	Absent	1	Red Globe, Glohaven, Cresthaven,	d	VG
		Present	9	Nimla, CITH-P-2 , Summer Glo		

VIII. Explanation for the Table of characteristics

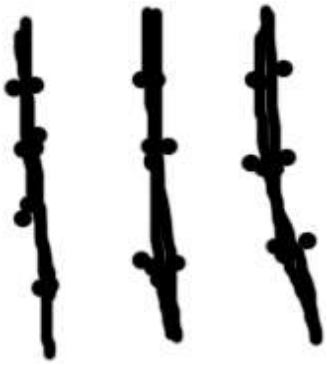
Character 3: **Tree habit**



1 Upright | 2 Semi spreading | 3 Spreading | 4 Drooping | 5 Weeping

Character 9: **General distribution of flower buds**

1
Isolated



9
In groups of two or more

Character 10: **Time of beginning of flowering**

The time of beginning of flowering is when all trees have 10% open flowers.

Character 11: **Flower: type**

“Campanulate” (bell shaped) is also referred to as “non-showy” : these types have small petals and stamens often higher than the petals

“Rosette” (rose shaped) is also referred to as “showy”: these types have large petals.

1
Campanulate (Non showy)

2
Rosette (Showy)

Character 13: **Petal: shape**

1
Narrow Ovate

3
Medium Ovate

5
Narrow elliptic

7
Medium elliptic

9
Circular

Character 14: **Flower: number of Petals**

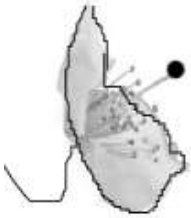
1
Five

2
More than five

Character 15: **Stigma: position compared to anthers (To be observed on 5 flowers per tree)**

1
Below

2
At same level



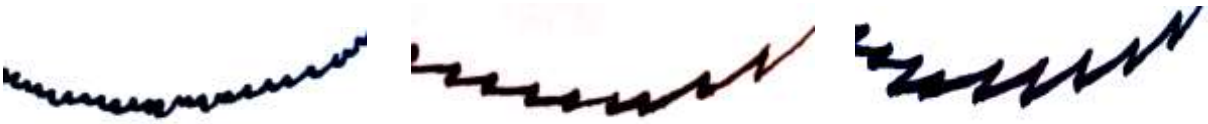
3
Above

Character 19: **Leaf blade: shape in cross section**

1
Concave

2
Flat

Character 20: **Leaf blade: margin**

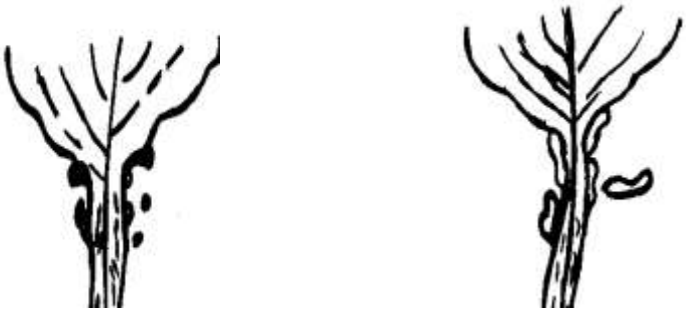


1
Crenate

2
Shallow serrate

3
Deep serrate

Character 24: **Petiole: shape of Nectarines**



1
Round

2
Reniform

Character 26: **Fruit: shape (in ventral view)**

1
Broad oblate

2
Medium oblate

3
Circular

4
Broad elliptic

5
Medium elliptic

Character 27: **Fruit: mucron tip at pistil end**

1
Absent

9
Present

Character 33: **Fruit: relative area of over color of skin**

To be observed without the bloom. The ground color is the first color to appear chronologically during the development of the skin and upon which other colors will develop in time in the form of spots, a macule, or a color flush or blush. It is not always necessarily the largest area of the fruit. The over color is the second color developing over time over the ground color. The coloration does not necessarily cover the smallest area of the fruit and consists of a pattern such as a flush or flecking.

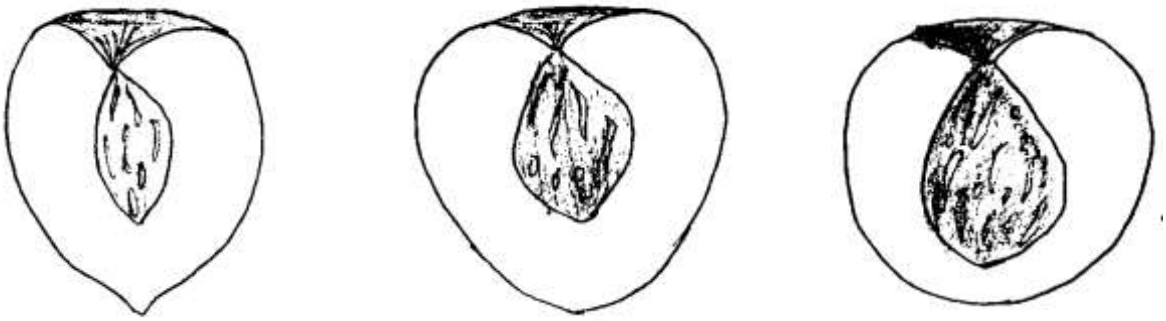
Character 40: **Fruit firmness**

To be observed at eating ripeness with firmness tester expressed in RI (relative Index).

Character 46: **Fruit: sweetness**

Calculation of total soluble solids measured using a refractometer. The measured unitis the degree Brix (º Brix). One degree Brix corresponds to 1 gram of sucrose in 100 grams of solution.

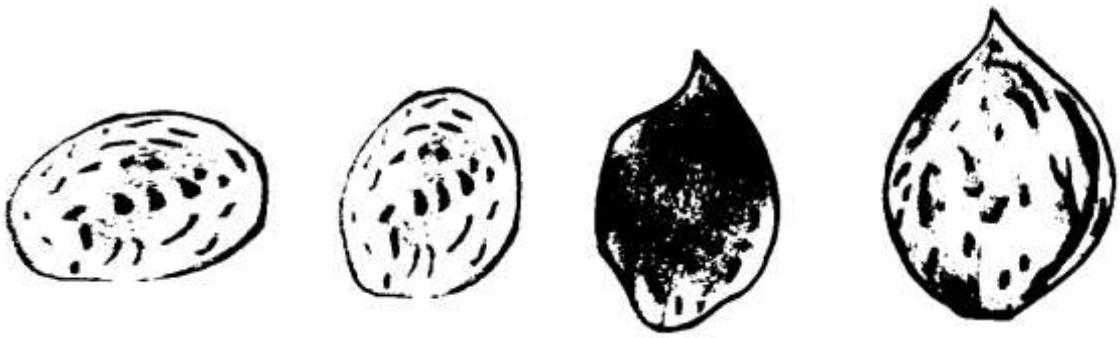
Character 47: **Stone: size compared to fruit**



7
Large

ll	5 Medium

Character 48: **Stone: shape (in lateral view)**



1	2	3	4
Oblate	Circular	Elliptic	Obovate

Working Group details:

The Task Force has finalized the DUS test guideline for **Peach** with support of Dr. Javid Iqbal Mir, Nodal Officer, Sh. Shiv Lal, Co-nodal Officer, Ramesh Kumar and SRF Asma Hamid of CITH, Srinagar. The officials of the PPV&FR Authority including Dr. Tejbir Singh, Registrar-II (Hort.) and Sh. Dipal Roy Choudhury, Joint Registrar also provided technical input.

The Members of the Task Force (4/2012)

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JAPANESE PLUM
(*Prunus salicina* L.)

II. Subject

These test guidelines shall apply to all varieties of Japanese Plum (*Prunus salicina* L.).

II. Material required

1. The Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA) shall decide on the quantity and quality of the plant material required for testing the variety and when and where it is to be delivered for registration under the Protection of Plant Varieties and Farmers' Rights (PPV&FR) Act, 2001. Applicants submitting such plant material from a country other than India shall make sure that all customs and quarantine requirements stipulated under relevant national legislations and regulations are complied with. As a minimum the applicant may submit 10 grafted or budded plants of plum on seedling rootstock for each centre.

2. The plant material supplied should be visibly healthy, not lacking in vigour, nor affected by any important pest or disease.

3. The plant material should not have undergone any treatment, which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of tests

1. The minimum duration of the DUS tests shall normally be at least for two fruiting seasons in succeeded years.

2. The test should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for conduct of the evaluation. Each test should include total of 6 trees for each variety. In particular, it is essential that the trees produce a satisfactory crop of fruit in each of the two growing seasons.

3. Test plot design

The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle. The additional test protocol for special purpose may be established by PPV & FRA

1. Locations : Two
2. No. of replication : Three
3. Treatment unit : Two trees per replication (total 6 plants/location)
4. Spacing : 3 x3m

IV. Methods and observations

The characteristics described in the Table of characteristics (see section VII) shall be used for the testing varieties and hybrids for their DUS.

1. For the assessment of Distinctiveness and Stability, observations shall be made on 6 plants or 18 parts taken from 6 plants with the exception of the observation on fruit which should be made on at least 20 fruits. In the case of parts of plants, the number to be taken from each of the plant should be three.
2. For the assessment of uniformity a population standard of 5% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 6 plants, no off types are allowed.
3. All observations of the tree and the branches should be made during dormancy.
4. Time of bloom should be recorded from opening of first flower to 75% bloom.
5. All observations on the leaf should be made on fully developed leaves of the middle third of current season's shoot.
6. Days to maturity should be recorded from 75% blooming to harvest.
7. Observations on the mature fruit should be recorded when fruit is ready for harvest.
8. Type of assessment of characteristics as indicated in column of Table VII of characteristics is as follows.

    a) MG*: Measurement by a single observation of a group of plants or parts of plants*

    b) MS*: Measurement by a single observation of individual plants or parts of plant*

    c) VG*: Visual assessments by a single observation of a group of plants or part of plants*

    d) VS*: Visual assessments by observation of individual plants or parts of plant*

V. Grouping of varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics, which are known from experience not to vary, or to vary only slightly within a variety and which in their various states are fairly evenly distributed across all varieties in the collection are suitable for grouping purpose.
2. It is recommended that the concerned authorities use the following characteristics for grouping plum varieties

    a. Tree: Habit (characteristic no. 2)
    b. Flower: arrangement of petals (characteristic no. 15)
    c. Leaf blade: Incisions of margin (characteristic no. 20)
    d. Leaf: shape of nectaries (characteristic no. 22)
    e. Fruit: shape in lateral view (characteristic no. 26)
    f. Stone: shape in lateral view (characteristic no. 44)
    g. Stone: shape in ventral view (characteristic no. 45)

VI. Characteristics and symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the Table of characteristics (Section VII) shall be used.
2. Notes (1 to 9) shall be given for each state of expression for different characteristics for the purpose of electronic data processing.
3. Legend

(*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phenological characteristics or by the environmental conditions of the testing region. Under such exceptional situation, adequate explanation shall be provided.

(+) See Explanation on the Table of characteristics in Section VIII. It is to be noted that for certain characteristics, the plant parts on which observations to be taken are given in the explanation or figure(s) for clarity and not the colour variation.

4. A code number in the sixth column of Table of characteristics indicates the optimum stage for the observation of each characteristic during growth and development of plant. The relevant growth stages corresponding to these code numbers are described below:

   a. Observations on tree vigour and habit should be made during dormant season
   b. Observations on flowers should be made at the time of full bloom (75% flowering)
   c. The observations on the leaves should be made on mature leaves from current season's shoot.
   d. Observation on fruit should be made at mature fruit

VII. Table of characteristics:

S.No.	Characteristics	States	Notes	Example varieties	Stage of observation	Type of assessment
1	2	3	4	5	6	7
1	**Tree :type of bearing**	On spur only	1	Santa Rosa	a	VG
		On spur and long shoots	2	Black Beauty, Kubio		
		On long shoots only	3	--		
2 (+) (*)	**Tree : habit**	Upright	1	Santa Rosa, Methley	a	VG
		Semi upright	2	Krassavica, Frontier, Kubio-26		
		Spreading	3	Kubio, Queen Ann		
		Drooping	4	-		
3	**One year old shoot: colour**	Greyish brown	3	Santa Rosa, , Kubio-26, Tarrol,	a	VG

		Yellow brown	5	Burbank, Black Amber		
		Brown	7	Methley , Kanto-5		
		Reddish brown	9	Kubio, Red Beaut		
4	**Vegetative bud: Size (mm)**	small (<5)	3	Beauty, Krassavica	a	MG
		Medium (>10)	5	Kubio-26, Santa Rosa		
		Large (11-15)	7	Kanto-5, Red Plum		
5 (*) (+)	**Vegetative Bud: shape of apex**	Obtuse	1	Burbank, Kanto-5, Beauty, Tarrol	a	VG
		Acute	2	Red Plum		
		Round	3	Red Beauty, Mariposa, Frontier		
6 (*) (+)	**One year old shoot: Position of vegetative bud in relation to shoot**	Adpressed	1	Methley, Kubio, ,Beauty	a	VG
		Slightly held out	2	Queen Ann, Red Plum, Red Beaut, Black Amber		
		Markedly held out	3	AU-Cherry		
7	**Flower: diameter (mm)**	Small (<15)	3	Tarrol, Beauty, Krassavica, Methley	b	MG
		Medium (15-20)	5	Red Plum, Kubio		
		Large (>20)	7	Mariposa, Kanto-5, Santa Rosa		
8 (+)	**Time of begining of flowering**	Early	3	Mariposa		VG
		Medium	5	Burbank		
		Late	7	Kubio-26		
9 (*) (+)	**Petal: Shape**	Ovate	3	Santa Rosa, Tarrol	b	VG
		Elliptic	5	Burbank, Queen Ann		
		Circular	7	Red Plum, Kanto5		
		Oblate	9	-		
10 (*)	**Petal: length (mm)**	Short < 7	3	Red Plum, Kanto-5	b	MG
		Medium 7-10	5	Santa Rosa , Black AmberBurbank		
		Large >10	7	Black Beaut, Red Beaut, Mariposa		
11	**Petal: undulation of margin**	Weak	3	Red beaut	b	VG
		Medium	5	Kanto-5		
		Strong	7	Santa Rosa, Mariposa		
12 (*)	**Stigma: position compared to anthers**	Below	3	Queen Ann, Santa Rosa	b	VG
		At the same level	5	Kubio-26, Methley, Red Beaut,		
		Above	7	Krassavica, Kubio		
13 (*) (+)	**Sepal: shape**	Triangular	3	Mariposa	b	VG
		Ovate	5	Tarrol, Beauty		
		Elliptic	7	Krassivica, Methley,		
14 (*)	**Pedicel: Length (mm)**	Short (<10)	3	Beauty, Methley	b	MS/VG
		Medium (10-20)	5	Kubio		
		Long (>20)	7	Burbank		
15 (*) (+)	**Flower: arrangement of petals**	Free	3	Red Plum,Santa Rosa, Kanto-5	b	VG
		Touching	5	Kubio-26, Tarrol, Black Amber Black Beaut,		
		Overlapping	7	Mariposa, Kubio, Queen Ann, Red Beaut, Burbank		
16 (*)	**Leaf blade: ratio**	Low <2	3	Krassavica, Black Beaut, Kubio, Methley	c	MG

	length/width (cm)	Medium 2-2.5	5	Tarrol, Black Amber, Red Plum		
		High >3	7	Mariposa, Red Beaut, Beauty		
17 (+) (*)	**Leaf blade: shape**	Ovate	1	Methley, Mariposa, Black Beaut, Queen Ann	c	VG
		Elliptic	2	Red Beaut, Black Amber, Beauty, Krasavica, Santa Rosa		
		Obovate	3	Kubio, Red Plum ,Burbank, Tarrol		
18 (+) (*)	**Leaf blade: angle of apex(excluding tip)**	Acute	3	Monarch, Black Amber	c	VG
		Right angled	5	Kubio-26		
		Obtuse	7	Black Beaut, Tarrol, Burbank		
19	**Leaf blade: density of pubescence on lower side**	Sparse	3	Black Beaut, Mariposa, Beauty	c	VG
		medium	5	Queen Ann, Santa Ros		
		strong	7	Kanto-5		
20 (+) (*)	**Leaf blade: incisions of margin**	Crenate	1	Red Beaut, Black Beaut, Tarrol	c	VG
		Bi-crenate	2	-		
		Serrate	3	Santa Rosa		
		Bi-serrate	4	-		
21 (*)	**Petiole: Length (cm)**	Short <1	3	Black Amber, Burbank, Tarrol	c	MG
		Medium 1-1.5	5	Kubio, Krassavica,		
		Long >1.5	7	Beauty		
22 (+) (*)	**Leaf: shape of nactaries**	round	3	Kubio, Methley, Kanto-5	c	VG
		reniform	5	Red Beaut, Tarrol		
23	**Leaf : Position of nectaries**	Predominant on base of leaf blade	1	Methley	c	VG
		Equal on base of leaf blade and on petiole	2	Kubio-26		
		Predominant on petiole	3	Beauty, Queen Ann		
24	**Fruit: length of stalk (mm)**	Short <10	3	Red Plum,	d	MG
		Medium 10-18	5	Krassavica, Kanto-5		
		Long >18	7	Beauty, Red Beaut, Mariposa		
25 (*)	**Fruit: size (weight in g)**	Small (<15)	3	Kanto-5, Black Beaut, Burbank	d	MG
		Medium (15-30)	5	Krassavica, Beauty		
		Large (>30)	7	Santa Rosa, Mariposa		
26 (+) (*)	**Fruit: shape in lateral view**	Oblong	1	-	d	VG
		Elliptic	2	Beauty		
		Circular	3	Red Beaut ,Tarrol		

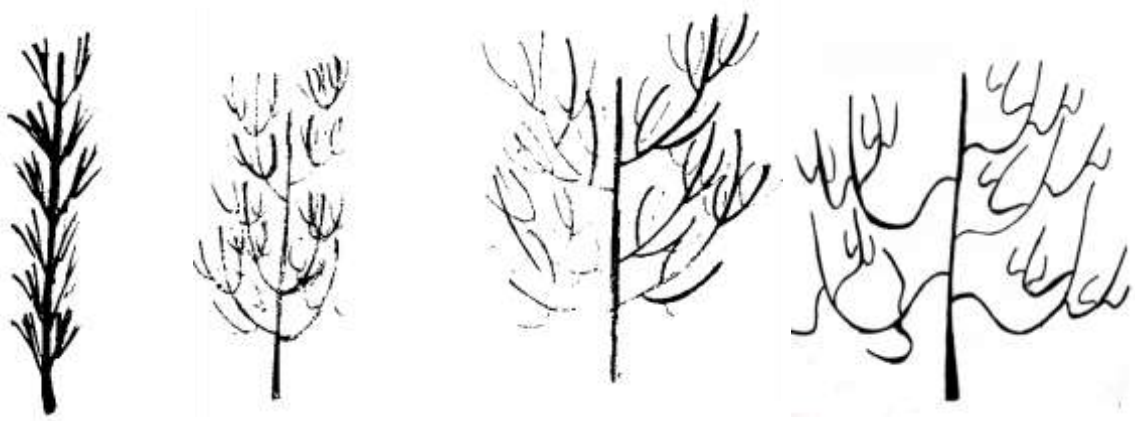
		Oblate	4	Black Amber, Krassavica, Mariposa,		
		Cordate	5	Queen Ann, Kanto-5, Kubio		
		Obovate	6	-		
		Obcordate	7	Santa Rosa		
27	**Fruit: symmetry**	Symmetric	1	Methley	d	VG
		Asymmetric	9	Red Beaut, Krassavica, Mariposa		
28 (+) (*)	**Fruit: shape of apex**	Pointed	3	Beauty , Red Plum, Santa Rosa	d	VG
		Rounded	5	Red Beaut, Methley		
		Truncated	7	Mariposa		
		Depressed	9	Black Beaut, Burbank, Red Beaut		
29 (*)	**Fruit: shape of base**	Pointed	3	-	d	VG
		Truncated	5	Methley , Krassavica		
		Depressed	7	Santa Rosa, Mariposa		
30 (+) (*)	**Fruit: depth of stalk cavity (mm)**	Shallow (<3)	3	Methley, Queen Ann	d	MG
		Medium (3-6)	5	Red plum, Burbank, Kanto-5		
		Deep (>6)	7	Red Beaut , Santa Rosa, Mariposa		
31 (+) (*)	**Fruit: width of stalk cavity (mm)**	Narrow (<5)	3	Kanto-5	d	MG
		Medium (5-10)	5	Beauty, Black Beaut, Kubio-26		
		Broad (>10)	7	Red Beaut, Santa Rosa, Mariposa		
32 (*)	**Fruit: depth of suture**	Shallow	3	Kanto-5, Queen Ann	d	MG
		Medium	5	Krassavica, Beauty, Black Amber,		
		Deep	7	Mariposa, Red Beaut ,Santa Rosa		
33 (*)	**Fruit: bloom of skin**	Weak	3	Red Beaut , Black Beaut	d	VG
		Medium	5	Mariposa, Santa Rosa Black Amber, Methley		
		Strong	7	Kanto-5, Black Beaut		
34 (*)	**Fruit: relative area of over colour of skin**	Small	3	Tarrol	d	VG
		Medium	5	Mariposa, Santa Rosa , Burbank		
		Large	7	CITH-P-1, CITH-P-2, Kubio-26		
35 (*)	**Fruit: over colour of skin**	Yellow	1	Burbank,	d	VG
		Orange yellow	2	Kanto-5,Tarrol		
		Medium Red	3	Beauty, Santa Rosa, Krassavica, Mariposa,		
		Dark red	4	Red Beaut , Red Plum, Methley, Kubio		
		Purple	5	Black Beaut		
		Dark blue	6	-		
		Black	7	-		
36 (*)	**Fruit: pattern of over colour of**	Flecks only	1	Mariposa, Beauty,	d	VG
		Mottled	3	Red Beaut, Tarrol, Kanto-5		
		Solid flush	5	Methley, Black Beaut, Red Plum		

	skin					
37 (*)	**Fruit: density of Lenticels**	Sparse	3	Methley , Tarrol , Kanto-5	d	VG
		Medium	5	Black Beaut, Burbank, Red Beaut		
		Dense	7	Red Plum, Queen Ann		
38 (*)	**Fruit: colour of flesh**	Whitish	1	Red Beaut	d	VG
		Green	2	Tarrol		
		Yellowish green	3	Kubio-26, Tarrol		
		Yellow	4	Red Plum, Mariposa, Kanto-5, Krassavica		
		Orange	6	Black Amber		
		Medium red	5	Queen Ann		
		Dark red	7	Methley, Beauty, Kubio		
		Purplish	8	-		
39 (+)	**Fruit: firmness of Flesh**	Soft <30	3	Kanto-5, Queen Ann, Beauty	d	MG
		Medium 30-35	5	Red Plum, Monarch , Red Beaut		
		Firm >35	7	Santa Rosa, Mariposa		
40	**Fruit: juiciness**	Low	1	Mariposa, Beauty , Black Beaut	d	MG
		Medium	2	Queen Ann, Santa Rosa,		
		High	3	Kanto-5, Black Amber		
41 (+)	**Fruit: sweetness (^{o}Brix)**	Low <15	3	Red Beaut	d	MG
		Medium 15-17	5	Mariposa, Santa Rosa, Red Plum, Beauty, Burbank, Methley		
		High >17	7	Queen Ann, Krassavica		
42 (*)	**Fruit: adherence of stone to flesh**	Non-Adherent	1	-	d	VG
		Semi-adherent	2	Queen Ann, Mariposa		
		Adherent	3	Tarrol, Black Beaut, Kubio-26		
43 (*)	**Stone: size (g)**	Small (<1.5)	3	Krassavica, Red plum	d	MG
		Medium (1.5-2.5)	5	Queen Ann, Beauty, Black Amber, Kanto-5		
		Large (>2.5)	7	Santa Rosa, Red Beaut , Mariposa		
44 (+) (*)	**Stone: shape in lateral view**	Narrow elliptic	1	Queen Ann, Black Amber	d	VG
		Medium elliptic	2	Beauty, Santa Rosa, Krassavica		
		Circular	3	-		
		Broad ovate	4	Red Plum, Burbank,		
45 (+) (*)	**Stone: shape in ventral view**	Narrow elliptic	1	Frontier, Krassavica, Kanto-5	d	VG
		Medium elliptic	2	Mariposa , Santa Rosa, Queen Ann		
		Broad elliptic	3	Red plum, Burbank		
46 (*)	**Stone: texture of lateral surface**	Fine grained	1	Krassavica, Burbank, Red Beaut, Methley, Queen Ann	d	VG
		Granular	3	Kubio, Black Amber		
		Rough	5	Beauty , Kanto-5, Red Plum, Mariposa		

		Hammered	7	Santa Rosa		
47 (+) (*)	**Stone: width of stalk-end (mm)**	Narrow (<4)	1	Kanto-5, Red Beaut, Black Amber, Queen Ann	d	MG
		Medium (4-8)	2	Black Beaut, Kubio-26		
		Broad (>8)	3	Red Plum, Mariposa, Beauty, Santa Rosa		

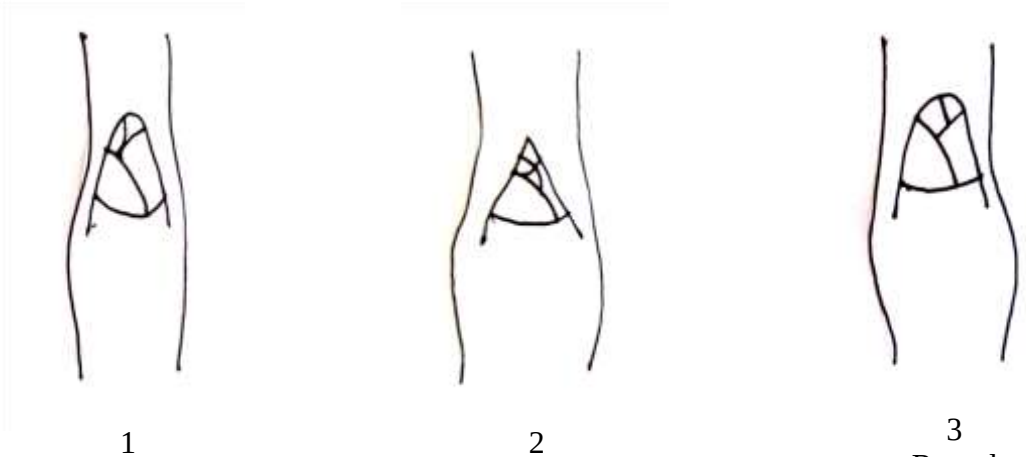
VIII. Explanation for the Table of characteristics

Character 2: **Tree habit**



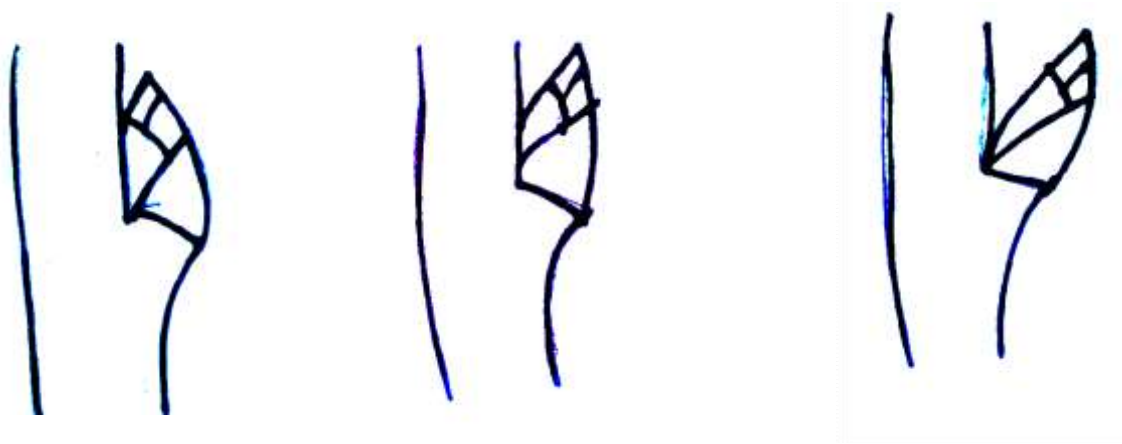
1 Upright | 2 Semi upright | 3 Spreading | 4 Drooping

Character 5: **Vegetative bud: shape of apex**



1 Obtuse | 2 Acute | 3 Round

Character 6: **One-year-old shoot: position of vegetative bud in relation to shoot**



1
Adpressed

2
Slightly held out

3
Markedly held out

Character 8: **Time of beginning of flowering**

The time of beginning of flowering is when all trees have 10% open flowers.

Character 9: **Petal: Shape**

3
Ovate

5
Elliptic

7
Circular

9
Oblate

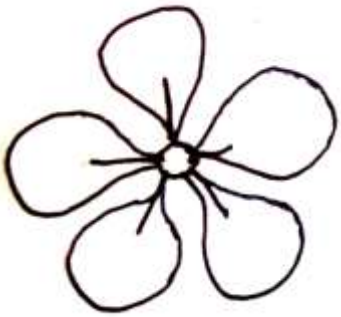
Character 13**: Sepal: Shape**

3
Triangular

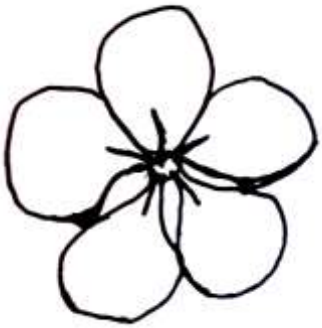
5
Ovate

7
Elliptic

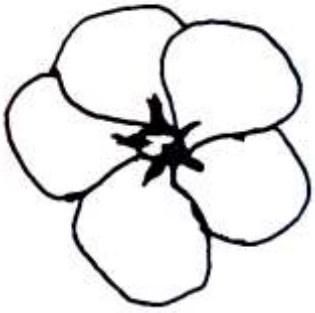
Character 15**: Flower: arrangement of petals**



3
Free

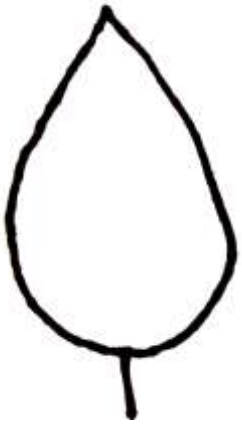


5
Touching

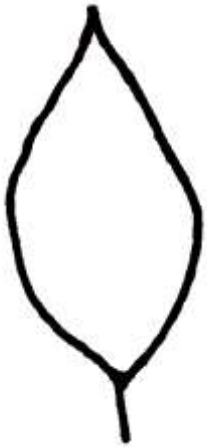


7
Overlapping

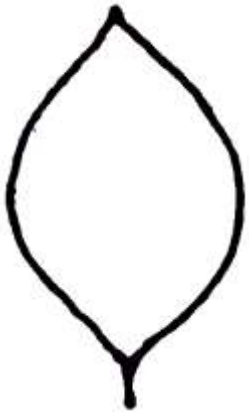
Character 17: **Leaf blade: shape**



1
Ovate



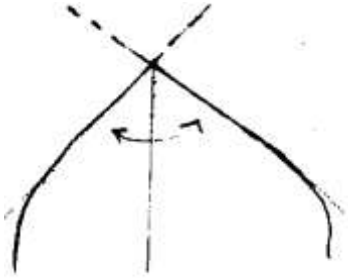
2
Elliptic



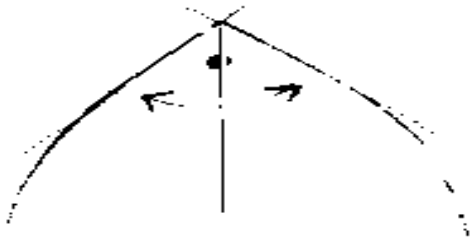
3
Obovate

Character 18: **Leaf blade: angle of apex (excluding tip)**

3
Acute



5
Right angles

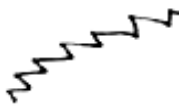


7
Obtuse

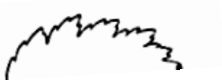
Character 20: **Leaf blade: incisions of margin**

1
Crenate

2
Bi-crenate



3
Serrate



4
Bi-serrate

Character 22: **Leaf: shape of nectaries**

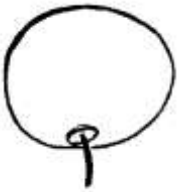
1
Round

9
Reniform

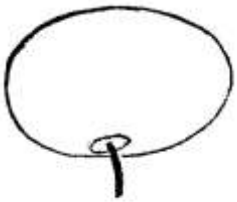
Character 26: **Fruit: shape in lateral view**

1
Oblong

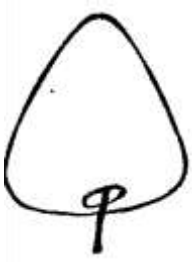
2
Elliptic



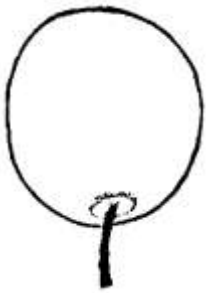
3
Circular



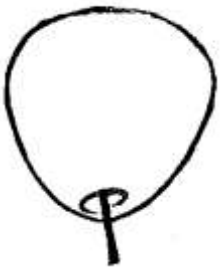
4
Oblate



5
Cordate



6
Obovate



7
Obcordate

Character 28: **Fruit: shape of apex**

3
Pointed

5
Rounded

7
Truncated

9
Depressed

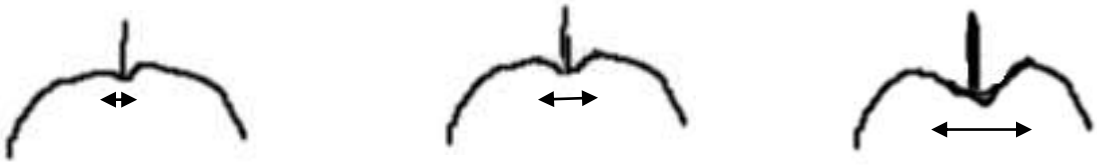
Character 30: **Fruit: depth of stalk cavity**

3
Shallow

5
Medium

7
Deep

Character 31: **Fruit: width of stalk cavity**



3
Narrow

5
Medium

7
Broad

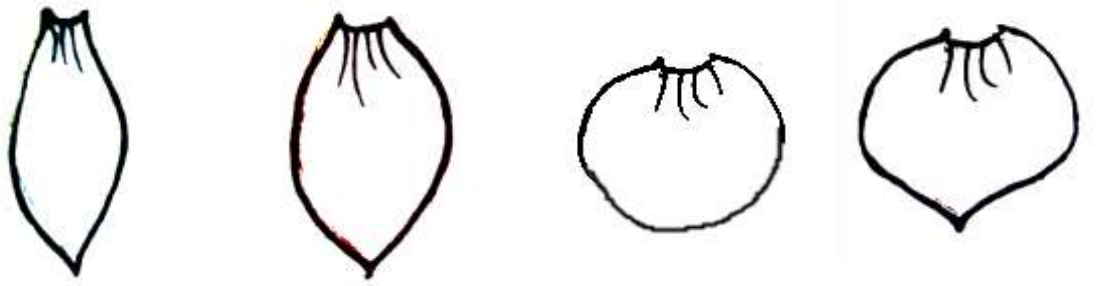
Character 39: **Fruit: Firmness of flesh**

To be observed at eating ripeness with firmness tester expressed in RI (relative Index).

Character 41: **Fruit: Sweetness**

Calculation of total soluble solids measured using a refractometer. The measured unitis the degree Brix (º Brix). One degree Brix corresponds to 1 gram of sucrose in 100 grams of solution.

Character 44: **Stone: shape in lateral view**



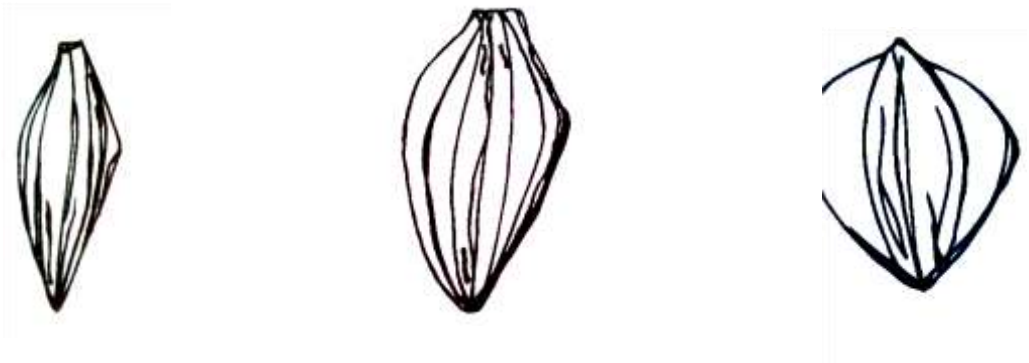
1
Narrow Elliptic

2
Medium Elliptic

3
Circular

4
Broad Ovate

Character 45**: Stone: shape in ventral view**

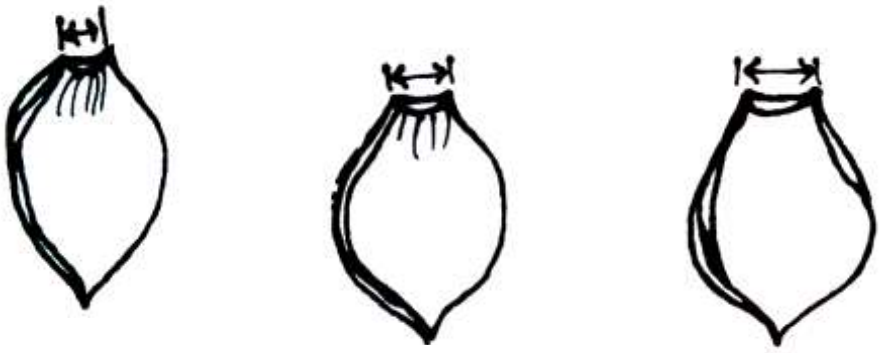


1
Narrow Elliptic

2
Medium Elliptic

3
Broad Ovate

Character 47: **Stone: width of stalk-end**



1
Narrow

2
Medium

3
Broad

Working Group details:

The task force has finalized the DUS test guidelines for **Plum** with support of Dr. Javid Iqbal Mir, Nodal Officer & Shi Lal, Co-Nodal Officer, Dr. Ramesh Kumar and SRF Asma Hamid of CITH, Srinagar. The officials of the PPV&FR Authority including Dr. Tejbir Singh, Registrar-II (Hort.) and Sh. Dipal Roy Choudhury, Joint Registrar also provided technical input.

The Members of the Task Force (21/11/2014)

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Nodal DUS Test Centre	Other DUS Test Centre
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Jasmine (*Jasminum auriculatum.* L.*)*

I. Subject

These Test Guidelines shall apply to all varieties of **Jasmine(** *Jasminum auriculatum.* L.) of the family Oleaceae.

II. Material required

1. The Protection of Plant Varieties & Farmers Rights Authority (PPV&FRA) shall decide when, where and in what quantity and quality the plant material are required for testing of a variety denomination for registration under the Protection of Plant Varieties and Farmers Rights (PPV&FR) Act, 2001. Applicants submitting such material from a country other than India shall make sure that all customs and quarantine requirements stipulated under relevant national legislations and regulations are complied with. For all varieties bred for fresh flower purpose, landscaping and industrial uses, 20 numbers of 6 months old fully rooted plants of commercial standard has to be supplied for DUS testing. If however any material for DUS tests has a specific requirement for the expression of characters, the same shall be specified by the applicant.
2. The plant material supplied shall be healthy, not lacking in vigor or affected by any pest or disease.
3. The plant material shall not have undergone any chemical or bio-physical treatment which would affect the expression of the characteristics of the variety unless the competent authority allow or request for such treatment. If it has been treated, full details of the treatment must be given.
4. The planting material supplied shall also possess the highest genetic purity, uniformity, sanitary and phyto-sanitary standards.

III. Conduct of Tests

1. The minimum duration of the test shall normally be two similar complete growing cycles with reference to the ecosystem of the variety submitted for DUS test. An option is that a panel of experts shall visit the on- farm test sites for two similar crop seasons. However, in case the material entered does not meet the DUS criteria for any one or more than one character, then the test shall be extended up to the next growing cycle.
2. The tests shall normally be carried out in two locations under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination. All stages are indicated against each character in chapter VII (Table of characteristics).
3. If any essential characteristics of the variety are not expressed for visual observations at the test location, the variety shall be considered for further examination at another appropriate test site or under special test protocol on expressed request of the applicant.
4. The size of the plots shall be such that parts of plants could be removed for measurement and observation without prejudicing the other observations on the standing plants.
5. In particular, growth regulators should not be used.
6. The varieties will be evaluated under natural growing conditions and checked for distinctiveness.
7. The plants shall be planted in the test field/plot at a standard spacing recommended for each type.
8. Additional special test protocols shall be established by the PPV&FR Authority.

IV. Methods and observations

1. The characteristics described in the Table of characteristics shall be used for the testing of varieties for their DUS (Section VII).
2. The optimum stage of development for the assessment of the characteristics are indicated against each of the characteristics.

System for growth stages in Jasmine

Code	Growth stages
01	Pre flowering stage
02	At the time of shoot emergence
03	At bud stage
04	At anthesis
05	At peak flowering

3. All observations on vegetative parts shall be as specified and leaf characteristics will be recorded on the fourth fully opened leaf from the tip of the stem. Colours of vegetative parts shall be observed on plants exposed to natural growing conditions.
4. Unless otherwise indicated, all observations on single plants shall be made on all plants or parts taken from each of 10 plants.
5. Each test shall include a total of at least 10 plants in DUS test centres and 5 plants for on - site tests. For assessment of Distinctiveness and Stability, all observations shall be made on all plants.
6. For the assessment of Uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95 % shall be applied. In the case of a sample size of 10 plants, 1 off-type is allowed.
7. In practice, it is not usual to perform tests of Stability that produce results as certain as those of the testing of Distinctiveness and uniformity. However, experience has demonstrated that for many types of variety, when a variety has been shown to be uniform, it can also be considered to be stable. Where appropriate or in cases of doubt, stability may be tested either by growing a further generation or by testing a new plant stock to ensure that it exhibits the same characteristics as those shown by the previous material supplied.
8. For the assessment of colour characteristics, the latest Royal Horticultural Society (RHS) colour chart shall be used.
9. Additional test protocols for special purpose if required shall be established by the PPV&FR Authority.
10. Standard cultural practices to be adopted and specified as may be relevant to the location of the DUS test centers for open conditions. If however, any material entered for the DUS test has any specific requirement for expression of characters, the same will be specified by the authority. The DUS test centers shall finalize the standard cultural practices with the approval of the Authority.

V. Grouping of Varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics which are known from experience not to vary or to vary only slightly within a variety and which in their various states are fairly evenly distributed across all varieties in the collection are suitable for grouping purpose.
2. Grouping characteristics are those in which the documented states of expression, even where produced at different locations, can be used, either individually or in combination with other such characteristics: (a) to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctness; and (b) to organize the growing trial so that similar varieties are grouped together.
3. The following characteristics shall be used for grouping jasmine varieties:

   a) Plant growth habit (Characteristic 2)

   b) Boldness of flower bud (Characteristic 13)

   c) Shape of open corolla (Characteristic 18)

   d) Shape of corolla lobe (Characteristic 19)

VI. Characteristics and symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the Table of characteristics (section VII) shall be used.
2. Notes (1-9) shall be used to describe the state of each character for the purpose of digital data processing.
3. Legend
   (*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phenological characteristic or by the environment conditions of the testing region. Under such exceptional situation, adequate explanation shall be provided.

   (+ sign**)** Characteristics are illustrated by explanation and drawings in Sl.No VIII "Explanations and Method".

4. Characteristics denoted with symbols QL, QN and PQ in first column of the Table of characteristics shall be indicated as:
   QL: Qualitative characteristic

   QN: Quantitative characteristic

   PQ: Pseudo-qualitative characteristic

5. Type of assessment of characteristics indicated in Column no. 7 of the Table of characteristics is as follows:

MG: Measurement by a single observation of a group of plants or parts of plants

MS: Measurement of a number of individual plants or parts of plants

VG: Visual assessment by a single observation of a group of plants or parts of plants

VS: Visual assessment by observations of individual plants or parts of plant

VII. Table of characteristics

S.No. (1)	Characteristics (2)	State (3)	Note (4)	Stage of observation (5)	Example variety (6)	Type of assessment (7)
1. * PQ	Plant growth type	Shrub	3	01	CO-1 Mullai	VG
		Climber	7		-	
2. * PQ (+)	Plant growth habit	Upright	1	01	-	VG
		Semi upright	3		-	
		Intermediate	5		CO-1Mullai, Parimullai	
		Spreading	7		CO-2 Mullai	
		Strongly spreading	9		-	
3. QN	Plant height (at flowering)	Short (<45 cm)	1	05	-	MS
		Medium (45 to 100 cm)	3		Parimullai, CO-2 Mullai	

		Tall (> 100 cm)	5		CO-1 Mullai	
4. PQ	Leaf size	Small	1	01	-	VG
		Medium	3		CO-1 Mullai CO-2 Mullai	
		Large	5		-	
5. PQ	Intensity of green colour (upper side of mature leaf)	Light	1	01	-	VG
		Medium	3		CO-1 Mullai	
		Dark	5		-	
6. * QL	Leaf pubescence	Absent	1	01	-	VG
		Present	9		CO-1 Mullai CO-2 Mullai	
7. PQ (+)	Shape of terminal leaflet blade – Compound leaf trifoliolate	Lanceolate	1	01	-	VG
		Elliptic	3		-	
		ovate	5		CO-1 Mullai CO-2 Mullai	
8. PQ	Shape of other leaflet blades – Compound leaf	Lanceolate	1	01	-	VG

(+)	trifoliolate					
		Elliptic	3		-	
		Ovate	5		CO-1 Mullai CO-2 Mullai	
9. PQ (+)	Leaf tip	Sharp	1	01	Parimullai	VG
		Medium	3		CO-1 Mullai	
		Blunt	5		-	
10. PQ (+)	Shape of base of leaf blade	Acute	1	01	-	VS
		Obtuse	3		CO-1 Mullai CO-2 Mullai	
		Rounded	5		-	
		Cordate	7		-	
		Asymmetric	9		-	
11. QL (+)	Flower bearing position	Terminal	1	05	-	VG
		Axillary	3		-	
		Both	5		CO-1 Mullai CO-2 Mullai	
12.	Flower bud length	Short	1	03	Parimullai	MS

QN		(2.0-2.5cm)				
		Medium (2.6-3.0cm)	3		CO-1 Mullai, CO-2 Mullai	
		Long (>3.0cm)	5		-	
13. * PQ (+)	Boldness of flower bud	Thin	1	03	Parimullai	VG
		Medium	3		CO-1 Mullai	
		Bold	5		-	
14. * PQ (+)	Flower bud shape	Pointed and Short	3	03	-	VS
		Pointed and Long	5		CO-1 Mullai CO-2 Mullai	
15. * PQ	Flower bud colour (RHS colour chart reference indicate number)	Pure white	1	03	-	VG
		Off white	3		CO-1 Mullai (Green white 157B) CO-2 Mullai (Green white 157B)	
		Yellow	5		-	
		Pink	7		-	
16. * QL	Tinge on flower bud	Absent	1	03	CO-1 Mullai CO-2 Mullai	VG
		Present	9		-	

17. * PQ	Flower colour on opening (RHS colour chart reference indicate number)	Pure white	1	04	-	VG
		Off white	3		CO-1 Mullai (White 155C) CO-2 Mullai (White 155C)	
		Yellow	5		-	
		Pink	7		-	
18. * PQ (+)	Shape of open corolla	Rounded	1	04	CO-1 Mullai	VG
		Star shaped	9		Parimullai	
19. * PQ (+)	Shape of corolla lobe	Rounded	1	04	CO-1 Mullai	VG
		Lanceolate	9		Parimullai	
20. QN	Corolla length	Short (0.5-1.0 cm)	1	03	Parimullai	MS
		Medium (1.1-1.5cm)	3		CO-1 Mullai CO-2 Mullai	
		Long (> 1.5cm)	5		-	
21.	Corolla tube length	Short	1	03	Parimullai	MS

QN		(1.0-1.5cm)				
		Medium (1.6-2.0cm)	3		CO-1 Mullai	
		Long (> 2.0cm)	5		-	
22. PQ (+)	Flower petal tip	Blunt	1	04	CO-1 Mullai	VG
		Sharp	9		Parimullai	

VIII. Explanations on the table of characteristics:

8.1: Explanations covering several characters

All characteristics shall be recorded at the stages indicated against each of the characteristics.

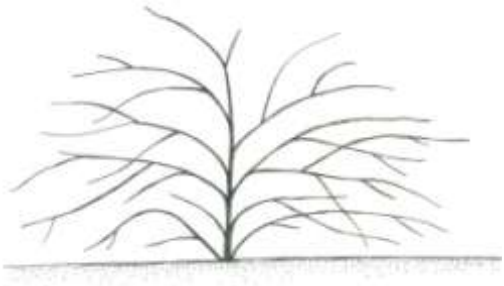
- In all flower types, observation will be recorded when the flower is fully open but before senescence sets in.
- Bud characteristics shall be observed when the buds are showing full colour, just before they begin to open.
- Stem and stipule characteristics shall be observed on the middle third of the stem except for characters requiring young shoot for which new flush will be used.
- Leaf characteristics shall be observed on fourth leaf from the top of the stem.

8.2: Explanations for individual characters

Characteristic 2: Plant growth habit

Upright

Semi upright



Intermediate

Spreading

Strongly spreading

Characteristic 7: Shape of terminal leaflet blade – Compound leaf

Lanceolate

Elliptic

ovate

Characteristic 8: Shape of other leaflet blades – Compound leaf

Lanceolate

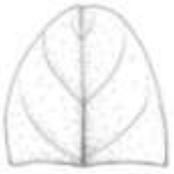
Elliptic

ovate

Characteristic 9: Leaf tip

Sharp

Medium



Blunt

Characteristic 10: Shape of the base of leaf blade

Acute

Obtuse

Rounded

Cordate

Asymmetric

Characteristic 11: Flower bearing position

Terminal

Axillary

Terminal and axillary flower bearing

Characteristic 13: Boldness of flower bud

Thin

Medium

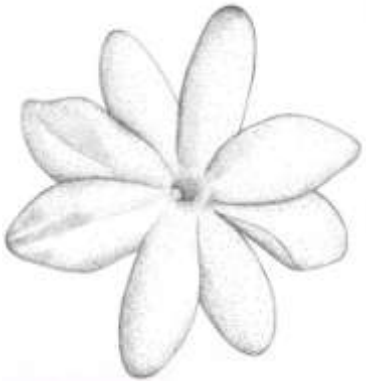
Bold

Characteristic 14: Flower bud shape

Pointed and short

Pointed and long

Characteristic 18: Shape of open corolla



Rounded

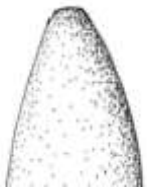
Star shaped

Characteristic 19: Shape of Corolla lobe

Rounded

Lanceolate

Characteristic 22: Flower petal tip



Blunt

Sharp

IX. Biochemical characters (Additional character)

1.	Aroma profiling	Aroma profiles to be generated for jasmine flowers harvested from plants provided for testing.

Methods of extracting essential oils and aroma profiling of Jasmine

Solvent extraction

The flowers are covered by a solvent such as ether, petroleum, hexane or acetone and then heated to 40-45 degree to extract the essential oil. This is then filtered which leaves a paste called concrete made up of wax and fragrance which is then mixed with alcohol and distilled at low temperatures, the alcohol absorbs the fragrance and when the alcohol is evaporated off an aromatic absolute remains. This method is used on delicate flowers and it is a relatively time consuming process.

Aroma profiling

Volatile compounds obtained from jasmine flowers are concentrated by headspace solid phase micro extraction and analyzed by MS-GC. HS extraction can be done by SPME fiber which can directly analyze the different contents present.

A commercial library (NIST) and an FFC (Flavor and Fragrance Components) bank provided with Linear Retention Indices are used interactively with MS data for compounds identification.

X. Working group details

The test guidelines were developed by the Principal Investigators at the Nodal centre at ICAR-Indian Institute of Horticultural Research, Hessaraghatta, Co-nodal centre at Tamil Nadu Agricultural University and the Task Force (11/2011) constituted by the PPV&FR Authority. Technical input was also provided by Dr. Kameshwar Rao, Retired Taxanomist of Bangalore University and Dr. Manoj Srivastava , Registrar, PPV&FRA.

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XI. Name of DUS Test Centres:

Nodal DUS Centre	Co-Nodal Centre
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Papaya (*Carica papaya* L)

I. Subject

These test guidelines shall apply to all the varieties, hybrids and parental lines of papaya (*Carica papaya* L.)

II. Materials required

1. The Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA) shall decide when, where and in what quantity and quality the plant material is required for testing a variety applied for registration under the Protection Plant Varieties and Farmers' Rights Authority (PPV & FRA) act, 2001. Applicants submitting seed or plant material from a country other than India must make sure that all customs and phytosanitary requirements stipulated under relevant national legislations and pre and post quarantine regulations are complied with.

2. The seeds supplied should be visibly healthy, not lacking in vigour, nor affected by any pests or diseases. The seed material should meet the minimum requirements for germination capacity (60%), moisture content (7% for ambient storage), physical and genetic purity (>98% for varieties and >90% for hybrids). The minimum quantity of seed material, to be supplied by the applicant, should be 20 g in gynodioecious varieties and 40 g in dioecious varieties for both the seasons.

3. Tissue cultured plant materials of gynodioecious varieties if are to be tested, then healthy and well hardened fifty well rooted plants be supplied for each location along with the necessary phyto-sanitary certificate indicating their freedom from viruses or pests or any such systemic infections.

4. The seed/plant material should not have undergone any treatment, which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request for such treatment(s). If it has been treated, full details of the treatment must be mentioned explicitly.

5. The seeds/ planting materials should be supplied afresh in each growing season and at the beginning of each of the growing cycle.

III Conduct of tests

1. The minimum duration of DUS tests for the new varieties shall normally be at least two independent growing cycles. Tests should be conducted in at least two places. The growing cycle is considered as the duration of a single growing season, beginning with vegetative growth, followed by flowering and fruit harvest.

2. The tests should be carried out under conditions ensuring satisfactory growth for the expression of the relevant characteristics of the variety and for the conduct of the examination. In particular, it is essential that the plants produce a satisfactory crop of fruit in each of the two growing cycles.

3. If a crop cycle is affected due to natural circumstances and if any essential characteristic of the candidate variety is not expressed for visual observations at these locations, the variety shall be considered for further examination at appropriate test site or under special test protocol on expressed request of the applicant, for which additional quantity of seeds or planting materials shall be required.

4. The field tests shall be carried out under open field conditions favoring normal growth and expression of all the test characteristics.

5. The design of the tests should be such that it should result in observations from a total of 36 fruit bearing plants at 12 plants per replication) in each of the test locations for each entry in each of the growing cycles and should facilitate plants or parts of plants to be sampled for measurement or counting without prejudice to the observations which must be made up to the end of the growing cycle.

6. Test Plot Design: The test materials are required to be planted at a spacing of 1.8 m x 1.8 m with a minimum of three replications having 12 fruit bearing plants per replication (totaling to 36 plants) for taking observations. In dioecious varieties, apart from 12 fruit bearing trees, three male plants per replication has to be maintained for recording observation.

7. The fruit bearing plants mentioned in these guidelines refers to the hermaphrodite and female plants of gynodioecious varieties and female plants in dioecious varieties.

8. Plants of at least 25-30 cm in height, with a basal stem girth of 2.0 to 2.4 cm and having well developed root and healthy shoot systems with 9-12 leaves should be used for evaluation.

9. On-site testing: On- site testing will be considered when desirable traits fail to express to the fullest extent under a particular environment depending upon the number of entries.

IV. Methods and observations

1. The characteristics described in the table of characteristics (see section VII) shall be used for the testing of varieties and hybrids for their DUS characteristics.

2. For the assessment of distinctness and stability, observations should be recorded on all the 36 fruit bearing plants and or parts of 36 fruit bearing plants, which shall be divided among the three replications having 12 plants per replication. For the assessment of quantitative and qualitative traits, three parts from each of the 36 plants shall be sampled.

3. The assessment for uniformity of characteristics shall be undertaken on simple visual observations of a group of plants or parts of plants. During such observation, the entry shall be deemed uniform when the number of aberrant or odd plants or parts of plant shall not exceed one in 12. A population standard of 1.0% with an acceptance probability of at least 95% should be applied. In the case of a sample size of 36 plants, the number of off types should not be more than one per replication.

4. The seedlings are transplanted at 30-45 days after germination in the main field. In case of dioecious varieties, five plants are planted per pit, so that early flowering males are removed, to maintain one male plant for every 12-15 female plants.

5. The number of nodes to first flower should be observed from the ground level up to the node at which the first flower emerges.

6. The length of the middle inter node (distance between two successive nodes) should be recorded at half the plant height, after taking the full plant height from the soil level to the growing tip of the plant at first flowering stage.

7. The height to first fruiting should be recorded from the ground level to first fruit set at the fruiting stage.

8. All the observations pertaining to leaf parameters shall be recorded on the fully expanded 5^{th} leaf marked from the just expanded first terminal leaf on the main stem.

9. All the observations on inflorescence and number of nodes to first flower should be made at the time of flowering. Flowering is considered to begin when the first flower on the inflorescence has fully opened and observations on the flower shall be made on the most recently opened flower on the inflorescence before fading of colour.

10. Fruits are to be harvested when streaks of yellow pigmentation appear on the pericarp of mature fruits on the plant. The fruits after harvest can be kept for natural ripening under ambient condition for proximate analysis.

11. The fruit characters shall be recorded at full maturity / edible ripeness stage from the fruits harvested at periodical intervals from each test plant. The fruit ridges are to be observed in the transverse section and the central cavity diameter recorded at the broadest part. The fruit cavity index shall be calculated as the ratio of the fruit cavity volume to fruit volume and expressed in percentage.

12. For the assessment of colour characteristics, Royal Horticultural Society (RHS) colour chart shall be used wherein the specific colour groups shall be mentioned with distinctiveness.

13. A code number in the sixth column of the Table of characteristics indicates the optimum stage for the observation of each characteristic during the phenological stages of the plant growth and development. The relevant growth stages corresponding to these code numbers are described below:

Sl. No.	Stage of observation	Decimal coding
1	At flowering	10
2	After fruit set and before the harvest of first fruit	20
3	At the time of first fruit harvest	30
4	At edible stage of ripe fruit after harvest	40

V. Grouping of varieties

a. The candidate varieties for DUS testing shall be divided into groups in order to facilitate the assessment of distinctiveness. Characteristics, which are suitable for grouping purpose, are those which are known from experience not to vary or to vary only slightly, within a variety and in their various states are fairly evenly distributed across all the varieties in the collection.
b. The following characteristics are proposed for the grouping of varieties:
    a. Plant: Sex type (Characteristic 4)
    b. Plant: Height to first fruit(Characteristic 6)
    c. Fruit : Shape (Characteristic 9)
    d. Fruit : Pulp Colour (Characteristic 11)
    e. Fruit: Shape of central cavity (Characteristic 20)

VI. Characteristics and symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the Table of Characteristics (Section VII) shall be used.
2. Notes (1 to 9) shall be given for each state of expression for different characteristics for the purpose of electronic data processing.

3. Legend

(*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phenological characteristic or by the environmental conditions of the testing region. Under such exceptional situation, adequate explanation shall be provided.

(+) See Explanation on the Table of characteristics in Section VIII. It is to be noted that for certain characteristics, the plant parts on which observations to be taken are given in the explanation or figure(s) for clarity and not for the colour variation.

4. Characteristics denoted with symbols **QL, QN** and **PQ** in the first column of the Table of characteristics shall be indicated as;
   QL: Qualitative characteristic
   QN: Quantitative characteristic
   PQ: Pseudo-qualitative characteristic

5. Type of assessment of characteristics indicated in column 7 of table of characteristics is as follows;
   MG: Measurement by a single observation of a group of plants or parts of plants
   MS: Measurement of a number of individual plants or parts of plants
   VG: Visual assessment by a single observation of a group of plants or parts of plants
   VS: Visual assessment by observations of individual plants or parts of plants

VII . Table of Characteristics

Sl. No	**Characteristics**	**States**	**Note**	**Example varieties**	**Stage of observation**	**Type of assessment**
1	**2**	**3**	**4**	**5**	**6**	**7**
1 (*) **QN**	Number of nodes to first flower	Low (<30)	3	Pusa Nanha	10	**MS**
		Intermediate (>30 but<40)	5	Arka Prabhath, Arka Surya, CO.2, CO.5, CO.7, TNAU PAPAYA CO.8		
		High (>40)	7			
2 **QN**	Length of middle internode on tree (cm)	Short (<3)	3	Pusa Nanha	10	**MS**
		Intermediate (>3.0 but <4.5)	5	Arka Prabhath, Arka Surya, CO,2, CO.7, CO.8		
		Long (> 4.5)	7	CO.5, Washington		
3 **PQ**	Colour of mature leaf petiole	Green	3	CO.2, CO.6	10	**VG**
		Green with light purple tinge	5	CO.4, CO.7, Sunrise Solo, Arka Prabhath		
		Purple	7	CO.5, Washington		

4 (*****) **PQ**	Sex type	Dioecious	1	Pusa Nanha, CO.2, CO.5, CO6, TNAU PAPAYA CO.8	10	**VS**
		Gynodioecious	2	Arka Surya, Arka Prabhath, CO.3, CO.7		
5 **PQ**	Colour of inflorescence stalk	Green	1	Arka Prabhath, CO.2, CO.6	10	**VG**
		Purple/Pink	2	CO.5,Washington		
6 (*****) **QN**	Height to first fruit(m) (Bearing height)	Low (<1.0)	3	Pusa Nanha	20	**MS**
		High (> 1)	5	CO.2, CO.5, CO.7, CO.8 Arka Prabhath, Surya		
7 (*) **QN**	Number of fruits on trunk at first harvest	Low <30	3	Pusa Dwarf, Pusa Nanha CO.1	30	**MS**
		Intermediate (>30 but <40)	5	Arka Prabhath, Surya		
		High (>40)	7	CO.2 CO.7, CO.8		
8 **PQ**	Stem colour of adult plant	Greenish or Greyish brown	1	Pusa Nanha, CO.2, Arka Surya	30	**VG**
		Green with shades of red – purple (pink)	2	CO.5, Washington		
9 (*****) **PQ** (+)	Fruit shape	Pear shaped (Pyriform)	1	Arka Surya, Sunrise Solo (Hermaphrodite)	40	**VG**
		Lengthened cylindrical	2	Arka Prabhath (Hermaphrodite)		
		Oblong-ellipsoid	3	CO.7		
		Globular to high round	4	Arka Surya (Female), Pusa Nanha, CO.1	40	**VG**
		Oblong-Ovate	5	CO.2, CO.8		

10 (*) **PQ** (+)	Fruit Apex (Stylar tip)	Blunt	1	Arka Surya (Female), CO.4	40	**VG**
		Depressed	2	Arka Surya (Hermaphrodite), Arka Prabahth		
		Prominent	3	Arka Prabhath (Female), CO.2, CO.8		
11 (*) **PQ**	Fruit pulp colour (As per RHS colour chart)	Yellow	3	CO1, CO.4	40	**VG**
		Yellow orange	5	Pusa Nanha		
		Orange red	7	Arka Surya, Arka Prabhath CO.7, CO.8		
12 **PQ** (+)	Fruit shape of stalk end (stylar base)	Depressed	1	Pusa Nanha	40	**VG**
		Flattened	2	Arka Prabhath, Surya, CO.7		
		Inflated	3	CO.3		
13 **QL**	Ridging on Fruit surface	Absent	3	Washington, CO.4	40	**VG**
		Present	5	CO.8, Arka Surya (Female)		
14 (*) **QN**	Fruit weight (kg)	Low (<0.5)	3	Sunrise Solo	40	**MS**
		Intermediate (>0.5 but <1.0)	5	CO.3 , Arka Surya		
		High (>1.0)	7	CO.6, TNAU PAPAYA CO.8, Arka Prabhath		
15 (*) **QN**	Fruit length (cm)	Short (<15)	3	CO.3, Sunrise Solo, Arka Surya (Female)	40	**MS**
		Intermediate (>15 but <25)	5	CO.7, CO.4 , Arka Prabhath		
		Long (>25)	7	CO.2, CO.8		
16 (*) **QN**	Fruit diameter (cm)	Low (<10)	3	CO.3, Sunrise Solo, Arka Surya	40	**MS**
		Intermediate (>11but <13)	5	CO.7, Arka Prabhath		
		High (>13)	7	CO.2, CO.8		

17 (*) **QN**	Pulp thickness (cm)	Thin (< 2.5)	3	CO.3, CO.7	40	**MS**
		Thick (>2.5)	5	Arka Prabhath, CO.3, CO.2, CO.8		
18 **QN** (+)	Central cavity diameter (cm)	Low (<7)	3	Sunrise Solo	40	**MS**
		Intermediate (>7 but <9)	5	Arka Prabhath, Pusa Nanha		
		High (>9)	7	CO.2, CO.4		
19 (*) **QN**	Fruit cavity index (%)	Low (<25)	1	CO.7, Arka Prabhath	40	**MS**
		High (>25)	2	CO.2,CO.4, CO.8		
20 (*) **PQ** (+)	Shape of central cavity	Star shaped	1	Arka Surya	40	**VG**
		Angular	2	CO.8		
		Circular or round	3	CO.1 ,CO.2,		
		Irregular	4	Washington		
21 (*) QN	TSS (°Brix)	Low (<11)	1	CO.1	40	**MS**
		High (>11)	2	ArkaPrabhath, Arka Surya, CO.2, CO.7, CO.8		
22 (*) **QN**	Pulp firmness at edible stage (kg/cm ^{2})	Low (<3)	3	CO.1	40	**VG**
		Intermediate (>3 but <5)	5	CO.2, CO.5, CO.6, Arka Surya, CO.7		
		High (>5)	7	Arka Prabhath		

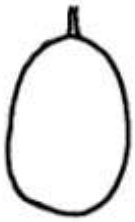
Note

19. Fruit cavity index is calculated as the ratio of fruit cavity volume to fruit volume and expressed in percentage.

22. Pulp firmness at edible ripeness is recorded using a penetrometer and expressed as kg/cm ^{2}

VIII . Explanation for the Table of Characteristics

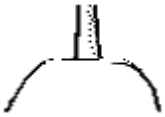
Characteristic 10. Fruit : General shape

				
Pear shaped	Lengthened cylindrical	Oblong ellipsoid	Globular to round	Oblong Ovate

Characteristic 11. Fruit: Apex (stylar tip)

		
Blunt	Depressed	Prominent

Characteristic 13. Fruit: Shape of stalk end (stylar base)

		
Depressed	Flattened	Inflated

Characteristic14. Ridging on fruit surface

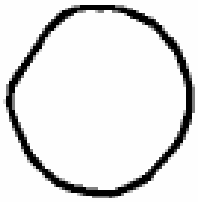
To be observed in transverse section

	
Absent	Present

Characteristic 18. Fruit : Central cavity diameter

The width of the central cavity should be recorded at the broadest part

Characteristic 21. Fruit : Shape of central cavity

			
Star shaped	Angular	Circular or absent	Irregular

IX. Working Group details

The test guidelines were developed by the Principal Investigators at the Nodal centre at Indian Institute of Horticultural Research, Hessaraghatta, Co-nodal centre at Tamil Nadu Agricultural University and the Task Force (8/2011) constituted by the PPV&FRA . Technical input was also provided by Dr. Manoj Srivastava, Registrar, PPV&FRA.

Members of the Task Force 11/2011:

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Dr. N. Kumar Dean (Hort.), TNAU, Coimbatore-641 003	Member

Dr. B.M.C. Reddy, Vice-Chancellor (Administrative Office), Dr. YSR Horticulture University, Venkataramannagudem, West Godavari-534 101, AP	Member
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Dr. C. Vasugi Senior Scientist (Hort.), PI , Nodal centre for Papaya, Indian Institute Horticulture Research , Hessaraghatta Lake Post,560089	Member
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Dr.Tejbir Singh, Registrar, PPV & FRA New Delhi-12	Member Secretary

X. Nodal Persons

Dr. C. Vasugi, Senior Scientist, Division of Fruit crops, Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bangalore – 560089.

Dr. K. Soorianathasundaram, Professor (Horticulture) and Dr. J. Auxcilia, Asst. Professor (Hort.), Department of Fruit crops, College of Horticulture, Tamil Nadu Agricultural University, Coimbatore-641 003

XI. Name of DUS Test Centres:

Nodal DUS Centre	Co-Nodal Centre
Division of Fruit Crops, Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bangalore -560089.	Department of Fruit crops, Horticultural College & Research Institute, Tamil Nadu Agricultural University, Coimbatore-641003

CHINA ASTER [*Callistephus chinensis* (L.) Nees.]

I. Subject

These Test Guidelines shall apply to all varieties of China Aster (*Callistephus chinensis* L. Nees.

II. Plant Material Required

1. The Protection of Plant Varieties & Farmers Rights' Authority (PPV&FRA) shall decides when, where and in what quantity the seeds are required for testing of a variety denomination for registration under the Protection of Plant Varieties and Farmers' Rights (PPV&FRA) Act, 2001. Applicants submitting such material from a country other than India shall make sure that all customs and quarantine requirements stipulated under relevant national legislation and regulations are complied with.

2. The material is to be supplied in the form of seed. The minimum quantity of freshly harvested seed, to be supplied by the applicant should be 2 g each in two packets. The seed should have 98% purity, 6-9% moisture content and 60% germination.

3. The seed supplied should be healthy, neither lacking in vigor, nor affected by any pest or diseases.

4. The seed should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of Tests

1. The minimum duration of tests shall be at least two similar growing seasons at two locations. If distinctiveness cannot be sufficiently established in these growing periods, the test should be extended for an additional growing period.

2. The field tests shall be carried out under conditions ensuring normal growth and expression of all test characteristics. The size of the plot should be 2.7 m x 1.2 m and plants are planted at spacing of 30 cm x 30 cm.

3. In particular, growth regulators should not be used. Planting should be taken in regular *rabi* (winter) season.

4. Thirty days old seedlings can be used for transplanting in main DUS test plot.

IV. Methods and observations

1. The characteristics described in the Table of characteristics shall be used for the testing of varieties for their DUS (section VII).

2. The assessment of the characteristics should be at the optimum stage of development i.e. at full flowering.

3. All observations on vegetative parts shall be recorded on the one third portion from the base of the plant. Colour of vegetative parts shall be observed on plants exposed to natural light. All observations on the leaf should be made on leaves at the base of the lowest flowering branch.

4. All observations on floral parts shall be made on terminal flower heads. The colour of the ray florets shall be recorded at full open stage. Time of beginning of flowering is when the first flower head has fully opened on 50% of the plants.

5. All observations on 10 single plants or parts taken from 10 plants and any other observations made on all plants in the test.

6. Each test shall include a total of at least 64 plants in two replications. For assessment of Distinctiveness and Stability, all observations shall be made on all plants. No statistical analysis is required for these tests.

7. For the assessment of colour characteristics, the latest Royal Horticultural Society (RHS) colour chart shall be used.

8. Additional tests protocols for special purpose shall be established by the PPV& FR Authority.

9. Standard cultural practices to be adopted and specified as may be relevant to the location of the DUS test centres. The DUS test centres shall finalize the standard cultural practices with the approval of the Authority.

10. System for growth stages in China aster

Code	Growth Stages
01	When the first flower head has fully opened on 50% of the plants
02	When the plants are in full flowering
03	When the outer row of the disc florets show pollen
04	When 50 per cent the disc florets opened

V. Grouping of Varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics and their states which are known from experience not to vary or to vary only slightly within a variety are suitable for grouping purpose.

2. The following characteristics shall be used for grouping China aster varieties:
   1. Plant: height: Short, medium, tall (characteristic 1)
   2. Plant type: Erect, semi-erect and spreading (characteristic 2)
   3. Flower head diameter: Small, medium and large (characteristic 12)
   4. Ray floret in outer rows: shape - pointed and blunt (characteristic 16)
   5. Ray floret in outer rows: colour of inner side (characteristic 18)
   6. Type of flower head: Semi-double (flower head with visible disc florets) and Powderpuff type (flower head with prominent disc florets) (characteristic 21)

VI. Characteristics and Symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the Table of characteristics (section VII) shall be used.

2. Notes (1-9) shall be used to describe the state of each character for the purpose of digital data processing.

3. Legend
   (*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety.
   (+) See explanations on the Table of characteristics.

4. Characteristics denoted with symbols QL, QN and PQ in first column of the Table of characteristics shall be indicated as:
   QL: Qualitative characteristic
   QN: Quantitative characteristic
   PQ: Pseudo-qualitative characteristic

5. Type of assessment of characteristics indicated in column no. seventh of the Table of characteristics is as follows:
   MG: Measurement by a single observation of a group of plants or parts of plants
   MS: Measurement of a number of individual plants or parts of plants
   VG: Visual assessment by a single observation of a group of plants or parts of plants
   VS : Visual assessment by observations of individual plants or parts of plants

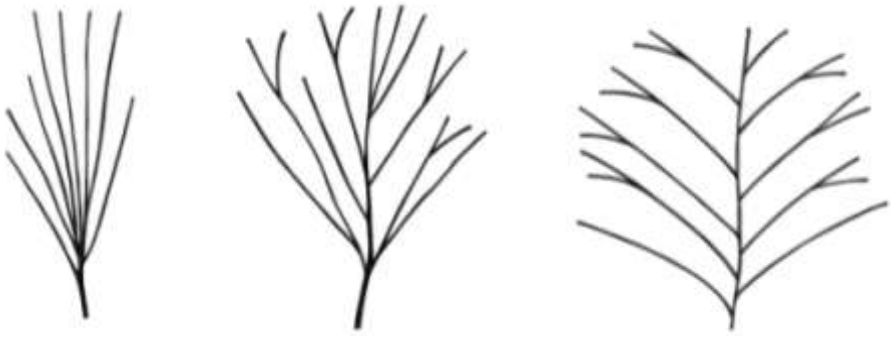
VII. Table of characteristics

Sl. No.	Characteristics	States	Notes	Stage of observation	Example varieties	Type of assessment
1. (*) QN	Plant: height (cm)	Short (20-40cm)	3	01	Matsumoto Red	MS
		Medium (>40 to 60 cm)	5		Kamini, Poornima	
		Tall (>60cm)	7		PG Pink, PG Violet, PG Purple	
2. (*) QN (+)	Plant: type	Erect	3	01	Kamini	VG
		Semi-erect	5		Poornima, PG Purple	
		Spreading	7		PG Violet, Arka Archana	
3. QN	Stem: thickness	Thin (<25 mm)	3	01	Matsumoto Sacrlet	MS
		Medium (>25 mm to 35 mm)	5		Kamini, PG Pink	
		Thick (>35 mm)	7		PG White, Shashank	
4. PQ (+)	Density of branches	Sparse	3	02	Poornima	VG
		Medium	5		Violet Cushion	
		Dense	7		Local Violet	
5. (*) QL	Stem: anthocyanin colouration of internode	Absent	1	01	Poornima, Shashank	VS
		Present	9		Kamini, Local Violet	
6. (*) QL (+)	Leaf: shape	Linear	3	01	-	VS
		Elliptic	5		Matsumoto White	
		Ovate	7		Kamini	
7. PQ	Leaf: area	Small	3	01	Shashank	VS
		Medium	5		Violet Cushion	
		Large	7		Poornima, PG White	
8. (*) QL (+)	Leaf: dentations	Absent	1	01	-	VS
		Present	9		Kamini	
9. (*) PQ	Leaf: intensity of green colour	Light	3	02	Shashank	VS
		Medium	5		Matsumoto White, Poornima	
		Dark	7		Kamini	
10. (*) PQ	Leaf midrib: pigmentation	Absent	1	02	Poornima, Shashank	VS
		Present	9		Kamini	
11.	Flower head: number of	One	3	03	Single Local	MS

(*) PQ	whorls of ray florets	Two to three	5		Local Pink	
		More than three	7		Kamini	
12. (*) QN	Flower head: diameter	Small (<4 cm)	3	03	Matsumoto Red, Matsumoto Pink	MS
		Medium (>4 cm to 5 cm)	5		Kamini, Shashank	
		Large (>5 cm)	7		Poornima, PG Pink	
13. (*) QN	Ray floret: length (outer row)	Short (<2 cm)	3	03	Matsumoto Red, Matsumoto Rose	MS
		Medium (>2 cm to 3 cm)	5		Poornima	
		Long (>3 cm)	7		PG Pink, PG White	
14. (*) QL (+)	Ray floret: shape	Narrow	3	03	Local Violet	VS
		Broad	5		Poornima, PG Pink	
15. (*) PQ	Ray floret: arrangement	Semi-upright	3	03	Kamini	VS
		Horizontal	5		Poornima	
		Reflexed	7		-	
16. (*) QL (+)	Ray floret: shape in cross section	Concave	3	03	Matsumoto White	VS
		Straight	5		Poornima	
		Convex	7		-	
17. (*) PQ (+)	Ray floret: shape at tip	Pointed	3	03	Local Violet	VS
		Blunt	5		Poornima	
18. (*) QL	Ray floret: colour of inner side	RHS colour chart (indicate reference number)	-	03	-	VS
19. (*) QL	Disc floret: colour of corolla lobe (RHS)	White	1	04	Poornima	VS
		Yellow	3		Local Violet	
		Purple	7		Violet Cushion	
20. (*) QN	Days to first flower opening	Early (60 to70)	1	01	Matsumoto Red	MG
		Medium (>70 to 80)	3		Shashank, Poornima	
		Late (>80)	5		Kamini, PG White	
21. (*) QN	Flower head: type	Semi-double	3		Kamini, PG Pink	VS
		Powderpuff	5		Poornima, Violet Cushion	

VIII. Explanation on the table of characters

Characteristic 2. Plant: type

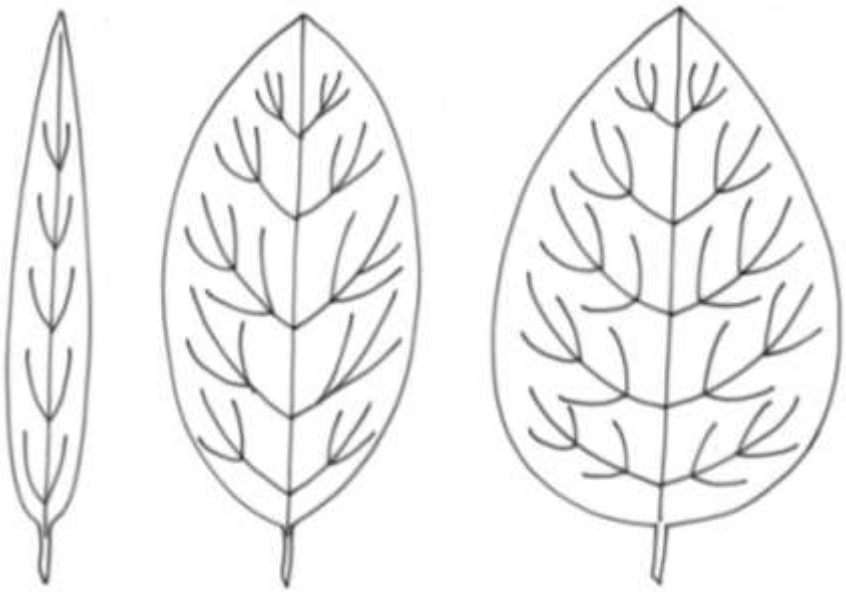


Erect **Semi-erect** **Spreading**

Characteristic 4. Density of branches

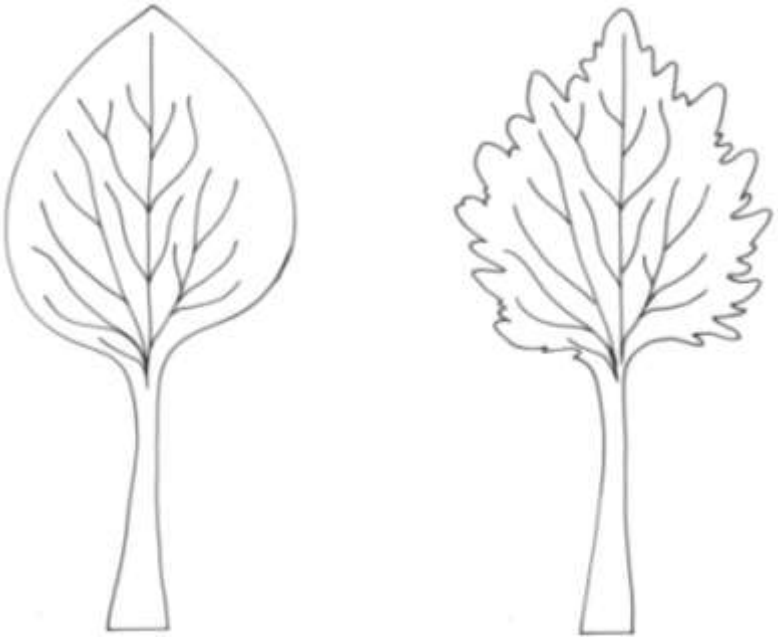
Sparse **Medium** **Dense**

Characteristic 6. Leaf: shape



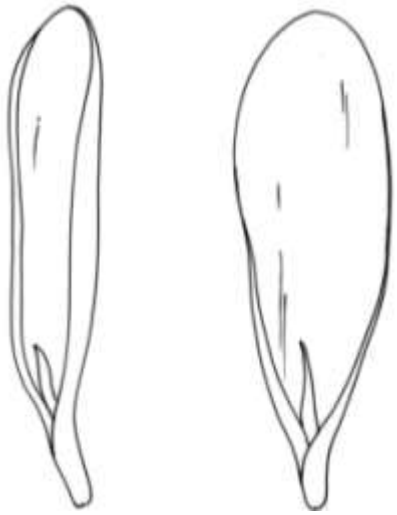
Linear **Elliptic** **Ovate**

Characteristic 8. Leaf: dentations



Absent **Present**

Characteristic 14. Ray floret: shape

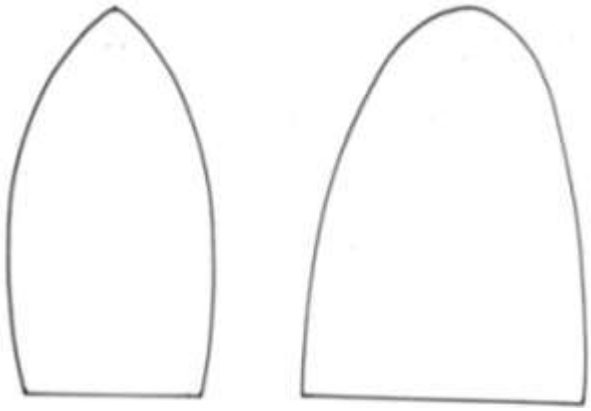


Narrow **Broad**

Characteristic 16. Ray floret: shape in cross section

Concave **Straight** **Convex**

Characteristic 17. Ray floret: shape at tip



Pointed **Blunt**

IX. Working Group Details

These test guidelines developed by Task Force (3/2013) constituted by PPV & FRA, New Delhi

Members of the Task Force (3/3013)
Dr. T. Manjunatha Rao, Chairman, Principal Scientist (Horticulture) & Head, Division of Ornamental Crops, IIHR, Bangalore
Dr. Rajiv Kumar, Senior Scientist (Horticulture), Member & PI Nodal Centre
Dr. S. M. Katwate, Geneticist, Member & PI Co-Nodal Centre
Dr. Manoj Srivastava, Member Secretary & Registrar, PPV & FR Authority, New Delhi

X. Name of DUS Test Centres:

Nodal DUS Centre	**Co-Nodal Centre**
Dr. Rajiv Kumar Division of Ornamental Crops, Indian Institute of Horticultural Research, Hessaraghatta lake Post, Bangalore 5600 089, Karnataka	Dr. S.M. Katwate National Agriculture Research Project, Ganeshkhind, Pune - 411 007, Maharashtra

Tuberose (*Polianthes tuberosa* L.*)*

1. Subject

These test guidelines shall apply to all varieties, hybrids and parental lines of Tuberose (*Polianthes tuberosa* L.*)*

II. Material required

1. The Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA) shall decide where and in what quantity and quality, the planting material is required for testing a variety denomination applied for registration under the Protection of Plant Varieties and Farmers' Rights Authority (PPV & FRA) act, 2001.Applicants submitting such seed material from a country other than India shall make sure that all customs and quarantine requirements stipulated under relevant national legislation are complied with.

2. In the case of vegetatively propagated crop like tuberose, the material has to be supplied in the form of bulbs of sufficient size to show full flowering in the first year. The bulbs should have at least one vegetation point.

3. The minimum quantity of plant material, to be supplied by the applicant, should be 75 bulbs of >2 cm (diameter at broadest point) weighing 25 to 30 grams.

4. The plant material supplied should be healthy, neither lacking in vigor, nor affected by any pest or disease.

5. The plant material should not have undergone any treatment which would affect the expression of the characteristics of the variety, unless the competent authorities allow or request such treatment. If it has been treated, full details of the treatment must be given.

III. Conduct of tests

1. The minimum duration of the DUS tests for the new varieties shall normally be at least two independent similar growing seasons.

2. The test shall normally be conducted at least at two locations. If any essential characteristic of the candidate variety is not expressed for visual observation at these locations, the variety shall be considered for further examination at another appropriate test site or under special test protocol on expressed request of the applicant.

3. The field tests shall be carried out under conditions favoring normal growth and expression of all test characteristics. The size of the plots shall be such that parts of plants could be

removed for measurement and observation without prejudicing the other to the observations on the standing plants until the end of the growing period. Each test shall include about 64 plants, in the plot size and planting space specified below across 2 replications. Separate plots for observation and for measuring can only be used if they have been subjected to similar environmental conditions. All the replications shall be sharing similar environmental conditions of the test location.

4. Test plot design

Number of rows	:	4
Row length	:	2.5m
Row to row distance	:	30 cm
Plant to plant distance	:	30 cm
Expected plants/replication	:	32
Number of replications	:	2

5.Observations should not be recorded on plants in border rows

6.Additional test protocols for special test shall be established by the PPV&FR Authority.

IV. Methods and observations

1. The characteristics described in the table of characteristics shall be used for the testing of varieties and hybrids for their DUS characteristics.
2. For the assessment of distinctiveness and stability, observation shall be made on 10 plants or parts of 10 plants, which shall be equally divided among 2 replications (5 plants per replication).
3. For the assessment of uniformity of characteristics on the plot as a whole, this shall be done on simple visual observation of a group of plants or parts of plant. During such observation the entry shall be deemed uniform when the number of aberrant or odd plants or parts of plant shall not be exceeding 1 in 64. For the assessment of uniformity of vegetatively propagated varieties, a population standard of 1% and an acceptance probability of at least 95 % should be applied.
4. All the observations on leaf related parameters will be recorded from the 5^{th} leaf from the meristem.
5. For the assessment of color characteristics, the latest Royal Horticultural Society (RHS) color chart shall be used.
6. Days taken for flowering should be recorded from date of planting to the opening of the first inflorescence on 50% of the population.
7. All observations on inflorescence, bud color, bract size, pigmentation on the peduncle and the floral characteristics should be made at the time of flowering. Flowering is considered to begin when the first flower on the inflorescence has opened and observations on the flower should be made on the most recently fully opened flowers on the inflorescence before fading of color.

8. Inflorescence axis length should be measured from the first pair of flowers till the tip of the inflorescence.
9. Measurements of the length of the Inflorescence should be taken from ground level to the tip of the inflorescence when the first pair of flowers open.
10. Inflorescence diameter should be measured at a gap of 10cm from the ground level, when the first pair of flowers open.
11. Perianth tube length (excluding the perianth lobes), perianth tube thickness and perianth lobe thickness are measured after the opening of first two flowers.
12. Fruit set is recorded under natural pollination (open pollination).
13. Fruit Locule should be recorded from fully matured capsules.
14. Standard cultural practices to be adopted specific to the area.
15. A decimal code number in the fourth column of table of characteristics indicates the optimum stage of observation of each characteristic during the growth and development of plant. The relevant growth stages corresponding to those stages are described below:

Decimal code	**Stages**
0	Planting
01	Sprouting
02	Leaf Emergence
03	Initiation of Inflorescence
04	Inflorescence Emergence
05	Opening of 1 Pair of florets
06	Opening of Last pair of florets
07	Fruit Set Initiation
08	Fruit Ripening (Green)

V. Grouping of varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics, which are known from experience not to vary or to vary only slightly, within a variety and which in their various states are fairly evenly distributed across all varieties in the collection, are suitable for grouping purposes.

2. The following characteristics are proposed to be used for grouping Tuberose varieties:
   a) Leaf variegation (Characteristic No.2)
   b) Pigmentation on leaf base on abaxial side (Characteristic. 5)
   c) Bud colour (Characteristic. 7)
   d) Flower type (Characteristic. 9)
   e) Flower shape (Characteristic.16)
   f) Inflorescence length (Characteristic .19)

g) Stigma type (Characteristic.27)
h) Stigmatic lobes (Characteristic. 28)
i) Pigmentation on peduncle (Characteristic. 31)
j) Days taken for flowering (Characteristic. 32)
k) Fruit locule (Characteristic.34)

VI. Characteristics and symbols

1. To assess Distinctiveness, Uniformity and Stability, the characteristics and their states as given in the table of characteristics (Section VII) shall be used.
2. Scale 1 to 8 is used to describe the state of each character for the purpose of digital data processing.
3. The optimum stage for taking the observation of each characteristic during the plant growth and development is indicated by a decimal code.
4. Legend :

(*) Characteristics that should be observed during every growing period on all varieties and should always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phenological characteristic or by the environmental conditions of the testing region. Under such exceptional situation, adequate explanation should be provided.

(+) See Explanations on the table of characteristics in Chapter VIII of UPOV Guidelines. Characteristics are illustrated by explanation and drawings in Explanation and Methods.

5. Characteristics denoted with symbols QL, QN and PQ in the first column of the Table of characteristics shall be indicated as
   QL: Qualitative characteristics
   QN: Quantitative characteristics
   PQ: Pseudo- qualitative characteristics
6. Type of assessment of characteristics indicated in the table 2 of characteristics is as follows:
   MG: Measurement by a single observation of a group of plants or parts of plants
   MS: Measurement of a number of individual plants or parts of plants
   VG: Visual assessment by a single observation on a group of plants or parts of plants
   VS: Visual assessment by observations of individual plants or parts of plant

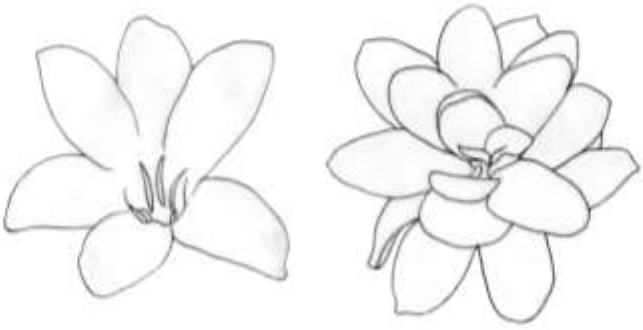
VII. Table of Characteristics

Sl. No (1)	Character (2)	State (3)	Note (4)	Stage of observation (5)	Example Variety (6)	Type of Assessment (7)
1. PQ	Leaf colour: Ref: RHS Chart	Light green Dark green	3 5	02	Phule Rajani Vaibhav	VS
2. * QL	Leaf variegation	Absent Present	1 9	02	Prajwal Variegated	VG
3. QN	Leaf length	Short <40 cm Medium 40-50 cm Long >50 cm	3 5 7	02	Suarna Rekha Arka Sugandhi Prajwal	MS
4. QN	Leaf breadth	Narrow <2 cm Medium 2-3 cm Broad >3 cm	3 5 7	02	Suarna Rekha Arka Sugandhi Prajwal	MS
5 * QL	Pigmentation at leaf base on abaxial side	Weak Medium Strong	3 5 7	02	Arka Sugandhi Hyderabad Single Hyderabad Double	VG
6 QN	Bud length	Short <5 cm Medium 5-6 cm Long >6 cm	3 5 7	05	Arka Sugandhi Shringar Prajwal	MS
7 * QL	Bud colour	Green Pink	3 5	05	Mexican Single Shringar	VG
8 QL	Flower colour	White Yellow Pink	3 5 7	05	Prajwal - -	VG
9 * (+) QL	Flower type	Single Double	3 5	05	Mexican Single Pearl Double	VG
10 QN	Flower length	Short <6 cm Medium 6-7 cm Long >7 cm	3 5 7	05	Suarna Rekha Suvasini Arka Nirantara	MS
11 QN	Flower diameter	Small <4 cm Medium 4 - 4.5 cm Large >4.5 cm	3 5 7	05	Calcutta Single Mexican Single Arka Nirantara	MS
12 (+) QL	Tepal tip	Acute Apiculate Obtuse	3 5 7	05	Arka Nirantara Prajwal Mexican Single	VG
13 QN	Rows of tepal	1 >3	3 5	05	Prajwal Suvasini	MG
14 (+) QL	Inflorescence	Straight Crooked Slightly Bent	3 5 7	05	Shringar Arka Nirantara GKTC-4	VG
15 QN	Inflorescence axis	Short <20 cm Medium 20-30 cm Long >30 cm	3 5 7	05	Phule Rajani Prajwal Suvasini	MS
16 * (+) QL	Flower shape	Tubular Narrow funnel Broad Funnel	3 5 7	05	Shringar Arka Nirantara Prajwal	VG

17 (+) QL	Flower tube shape	Bent Straight	3 5	05	Prajwal Arka Sugandhi	VG
18 (+) QL	Flower opening	Wide Open Shy	3 5	05	Suvasini Calcutta Double	VG
19 * QN	Inflorescence length	Short <70 cm Medium 70-105 cm Long >105 cm	3 5 7	05	GKTC-4 Vaibhav Prajwal	MS
20 QN	Peduncle thickness	Thin <9 mm Medium 9-10 mm Thick >10mm	3 5 7	05	GKTC-4 Mexican Single Prajwal	MS
21 QN	No of flowers/ inflorescence	Few < 42 Nos Medium 42-52 Nos Many >52 Nos	3 5 7	05	GKTC-4 Shringar Suvasini	MG
22 QN	Perianth tube length excluding tepals	Short < 3.5 cm Medium 3.5-4 cm Long >4 cm	3 5 7	05	Suarna Rekha Calcutta Double Suvasini	MS
23 QN	Perianth tube diameter	Thin <8 mm Medium 8-9 mm Thick >9 mm	3 5 7	05	GKTC-4 Vaibhav Prajwal	MS
24 QN	Perianth lobe thickness	Thin <1.1mm Medium 1.1-1.2 mm Thick >1.2 mm	3 5 7	05	Suarna Rekha Shringar Prajwal	MS
25 QL	Tepal colour on abaxial side	Greenish Tinge Pinkish Tinge	3 5	05	Vaibhav Suvasini	VG
26 (+) QL	Anthers	Normal Malformed	3 5	05	Prajwal Suvasini	VG
27 * (+) QL	Stigma type	Pin Type Thrum Type	3 5	05	Arka Sugandhi Prajwal	VG
28 * (+) QL	Stigmatic lobes	Trifid Tetrafid	3 5	05	Shringar Arka Nirantara	VG
29 QL	Fruit setting	Absent Present	1 9	08	Suvasini Arka Nirantara	VG
30 QL	Capsules	Profuse Scanty	3 5	08	Arka Nirantara Hyderabad Single	VG
31 * QL	Pigmentation on peduncle	Weak Medium Strong	3 5 7	05	Prajwal Calcutta Single Arka Sugandhi	VG
32 * QN	Days taken for flowering	Early 90-100 days Late >100days	3 5	05	Shringar Pearl Double	MG
33 QN	Bract length	Short <4cm Medium 4-6cm Long >6cm	3 5 7	05	Phule Rajani Arka Sugandhi Prajwal	MS
34 * (+) QL	Fruit locule	Trilocular Tetralocular	3 5	08	Shringar Arka Nirantara	VG
35 (+) QL	Style Shape	Straight Bent	3 5	05	Arka Sugandhi Prajwal	VG

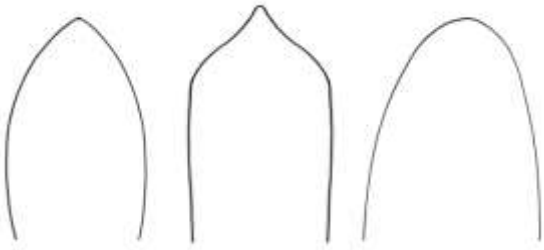
VIII. Explanations on the table of characteristics

Characteristic 9: Flower type



Single **Double**

Characteristic 12: Tepal tip

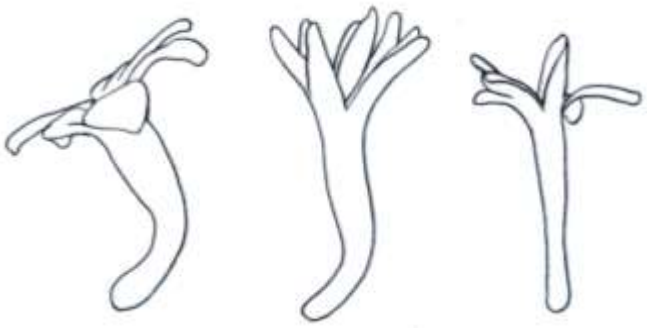


Acute **Apiculate** **Obtuse**

Characteristic 14: Inflorescence

Straight **Crooked** **Slightly bent**

Characteristic 16: Flower shape

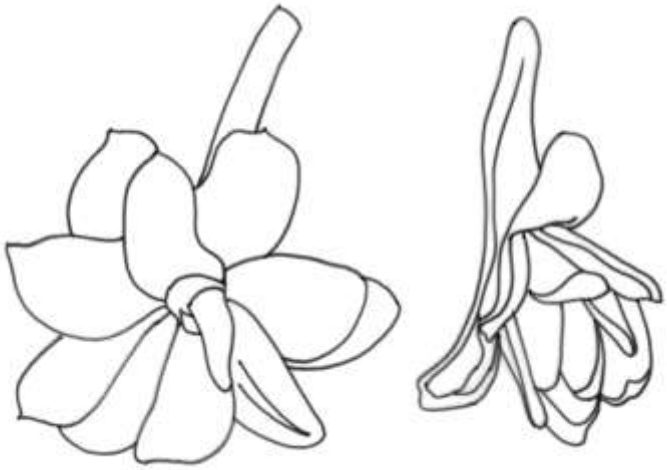


Broad **Narrow** **Tubular**

Characteristic 17: Flower tube shape

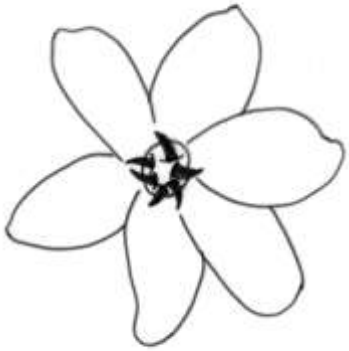
Bent **Straight**

Characteristic 18: Flower opening



Wide open **Shy**

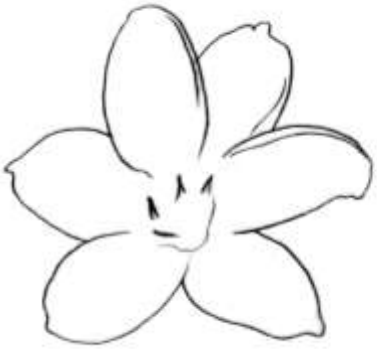
Characteristic 26: Anthers



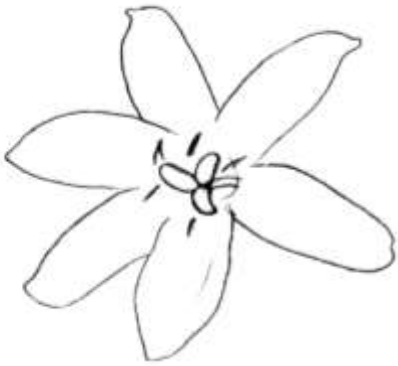
Normal

Malformed

Characteristic 27: Stigma type



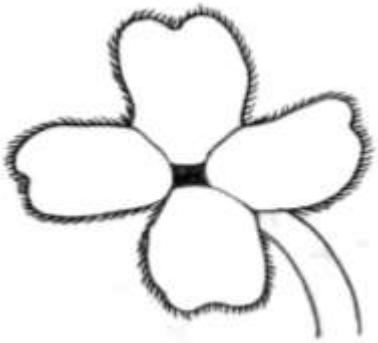
Thrum Type



Pin Type

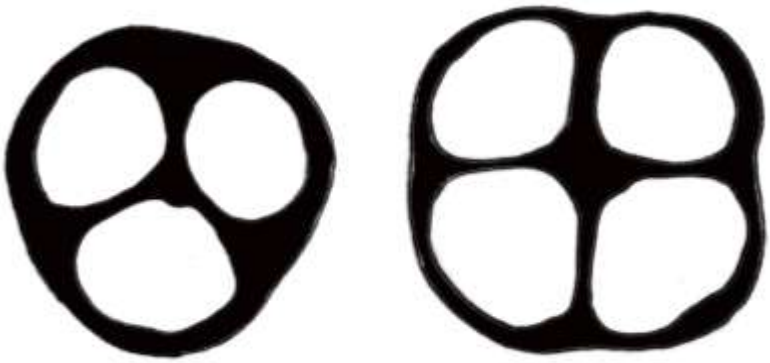
Characteristic 28: Stigmatic lobes

Trifid



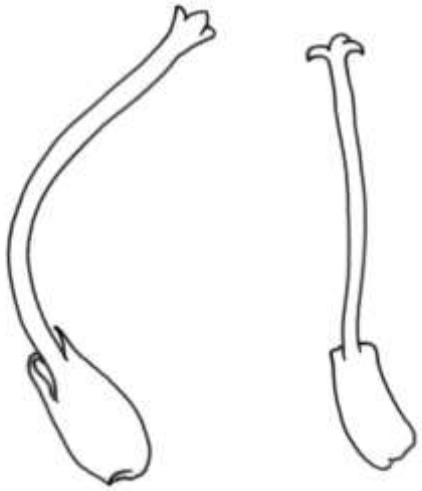
Tetrafid

Characteristic 34: Fruit Locule



Trilocular **Tetralocular**

Characteristic 35: Style shape



Bent **Straight**

VIII. Working group details

The test guidelines were developed by the Project Leader, Dr. Meenakshi Srinivas, Principal Scientist at IIHR, Bangalore. The suggestions and technical inputs provided by following task force constituted by the PPV&FR Authority (3/4/2013) for the development and finalization of this DUS test guidelines.

Members of the Task Force 3/4/2013

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Dr. Manoj Srivastava **Member Secretary**
Registrar
PPV &FRA
New Delhi

XI. DUS Test Centres

Nodal DUS Centre	**Co-Nodal centre(s)**
ICAR-Indian Institute of Horticultural Research, Hessarghatta, Bengaluru -560089	-

Strawberry (*Fragaria x ananasan* Duch.)

I. Subject

These test guidelines shall apply to all varieties, hybrids and parental lines of Strawberry (*Fragaria x ananasan* Duch.)

II. Material required

1. The Protection of plant varieties and farmer's Rights Authority (PPV & FRA) shall decide the quantity and quality of plant material required for testing the variety and when and where it is to be delivered for registration under the Protection of Plant Varieties and Farmers Right (PPV & FR) Act 2001. The applicants submitting such testing material from the country other than India, shall make sure that all customs and quarantine requirements stipulated under the relevant national legislation are complied with.
2. The testing material to be supplied in the form of runners, plant propagules or seedling plants
3. The minimum quantity of plant material to be supplied by the applicant should be 120 runners or plant propugules (tissue cultured plants hardened at 4-5 leaf stage)
4. Plant material supplied should be healthy, with good vigour and not affected by any pest or disease.
5. Plant material should not have undergone any treatment which would affect the expression of characteristics of the variety, unless the PPV & FRA, allow or request such treatment. If it has been treated, the full details of treatments must be given.

III. Conduct of tests

1. The minimum duration of test should be two independent fruiting seasons. Test shall be conducted at least at two locations.
2. The test should be carried out under conditions ensuring satisfactory growth for expression of relevant characteristics of varieties and for conduct of examination. In particular, it is essential that plant produce satisfactory crop of fruit in each of the two fruiting seasons.
3. Test plot design.

The design of the tests should be such that plants or parts of plants may be removed for measurement or counting without prejudice to the observations, which must be made up to the end of the growing cycle. The additional test protocol for special purpose may be established by PPV & FRA

a. Locations : Two (CITH, Srinagar and IIHR, Banglore)
b. No. of replications : Three
c. Treatment unit : 20 plants per replication per location
d. Spacing : 60 x 60 cm

IV. Methods and Observations

The characteristics described in the Table of Characteristics (see section VII) shall be used for the testing of varieties/ hybrids for their DUS.

1. For the assessment of Distinctiveness and Stability, observations shall be made on 10 plants from the middle of the plot. Whereas plant parts should be taken from each plant in each replication. In the case of parts of plants, the number to be taken from each of the plant should be at least three.
2. Mature leaves in the middle of youngest shoot not showing sign of active shoot growth should be selected for observation of leaves.
3. Observation on the inflorescence should be made at a time of full bloom on terminal panicles of typical shoots from exposed regions of the plants.
4. The observation on stolon of plants should be made towards the end of growing season.
5. Observation on fruits should be made on secondary fruits (at maturity).
6. For assessment of uniformity, a population standard of 5% and a probability of at least 95% should be applied. In case same size of 20 plants, one off type is allowed.
7. Type of assessment of characteristics as indicated in column of section VII (Table of characteristics) is as follows.

    a) ***MG**: Measurement by a single observation of a group of plants or parts of plants*
    b) ***MS**: Measurement by a single observation of individual plants or parts of plant*
    c) ***VG**: Visual assessments by a single observation of a group of plants or parts of plants*
    d) ***VS**: Visual assessments by a single observation of individual plants or parts of plant*

V. Grouping of varieties

1. The candidate varieties for DUS testing shall be divided into groups to facilitate the assessment of distinctiveness. Characteristics, which are known from experience not to vary, or to vary only slightly within a variety and which in their various states are fairly evenly distributed across all varieties in the collection are suitable for grouping purpose.
2. Grouping characteristics are those in which the documented state of expression even where produced different locations, can be used either individually or in combination with other such characteristics: to select varieties of common knowledge that can be excluded from the growing trial used for examination of distinctiveness and to organize growing trial so that similar varieties can be grouped together.

Following characteristics are to be used for grouping strawberry varieties

a. Terminal leaflet: Margin ----------(Characteristic 15)
b. Flower- Relative position of petals ----(Characteristic 23)
c. Fruit- Fruit shape ----------(Characteristic 30)
d. Fruit- Width of band without achenes-(Characteristic 36)
e. Fruit- Position of achenes ----------(Characteristic 37)
f. Fruit- Attitude of calyx ----------(Characteristic 39)

VI. Characteristics and symbols

1. To assess distinctiveness, uniformity and stability, the characteristics and their states as given in the Table of characteristics (Section VII) shall be used.
2. Notes (1 to 9) shall be given for each state of expression for different characteristics for the purpose of electronic data processing.
3. Legend

(*) Characteristics that shall be observed during every growing season on all varieties and shall always be included in the description of the variety, except when the state of expression of any of these characters is rendered impossible by a preceding phonological characteristics.

(+) See Explanation on the Table of characteristics in Section VII. It is to be noted that for certain characteristics, the plant parts on which observations to be taken are given in the explanation or figure (s) for clarity and not the colour variation.

A code number in the sixth column of Table of characteristics for observation of each characteristics during growth and development of plants. The explanation of the type of characteristics is provided in general introduction.

(a) The observations on the plant growth habit and vigour, foliage density and leaf stipules should be made on plants shortly before flowering.
.
(b) The observations of the inflorescence (including the flower) should be made on plants during flowering. Unless otherwise indicated, observations on the flower should be made on the secondary flower. In the case of remontant varieties, the characteristics should be observed on the first flush of flowers.
(c) The observations on leaves should be made during fruiting on fully mature leaves.
(d) The Observations fruits and stolon should be made after the fruiting.

VII. Table of characteristics

S. No.	Characteristics	States	Notes	Varieties characterized	Stages of observation	Type of assessment
1	**2**	**3**	**4**	**5**	**6**	**7**
1. (+)	**Plant: Growth habit**	Upright	1	Tillamook, Doughlas, Gorella	a	VG
		Semi-upright	2	Kimberley, Brighton, Festival		
		Spreading	3	Anthea, Katrain Sweet,		
2. (+)	**Plant: Density of foliage**	Sparse	3	Howard, Brighton	a	VG
		Medium	5	Kimberley, Blackmore, Cammarosa		
		Dense	7	Tillamook, Missionary, Bangalora,		
3.	**Plant: Vigour**	Weak	3	Regina	a	VG
		Medium	5	Festival, Kimberley, Blackmore		
		Strong	7	Tillamook, Missionary, Shasta		
4. (*)	**Plant: Position of inflorescence in relation to foliage**	Beneath	1	Brighton, Heera, Blackmore,	b	VG
		Same level	2	Tillamook, Kimberley, Missionary		
		Above	3	-		

5. (*)	**Plant: Number of stolon**	Few (< 5)	3	Sweet Charlie, Florida, Tioga	d	MG
		Medium (5-10)	5	Kimberley, Blackmore, Douglas		
		Dense (>10)	7	Tillamook, Missionary, Brighton		
6.	**Stolon: Anthocyanin coloration**	Absent	1	Kimberley, Missionary, Douglas	d	VG
		Weak	3	Tillamook, Bangalora, Phenomen		
		Medium	5	Howard, Brighton, Heera		
		Strong	7	Shasta, Larson, Katrain Sweet		
7. (+)	**Leaf: Circumfrence (**mm**)**	Small (<80)	3	Lucundi	c	MG
		Medium (80-120)	5	Tillamook, Red Coat		
		Large (>120)	7	Kimberley, Missionary, Brighton		
8.	**Leaf: Colour of upper side**	Light Green	3	Kimberley, Bangalora, Dil Pasand	c	VG
		Green	5	Douglas, Bangalora, Anthea		
		Dark green	7	Tillamook, Howard, Brighton		
9. (*) (+)	**Leaf: Blistering**	Absent or weak	1	Banglora, Elista, Howard	c	VG
		Medium	2	Tillamook, Kimberley, Missionary,		
		Strong	3	Majestic, Phenomen		
10. (*)	**Leaf: Glossiness**	weak	3	Heera, Blackmore	c	VG
		Medium	5	Tillamook, Kimberley, Brighten		
		Strong	7	Banglora		
11. (*)	**Terminal leaflet: Length width ratio**	Shorter (<1)	1	Tillamook, Howard, Brighten	a	MS
		Equal (=1)	2	Heera, Blackmore, Majestic		
		larger (>1)	3	Camarosa, Missionary, Phenomen		
12.	**Terminal leaflet:**	Acute	1	Missionary, Blackmore, Tillamook	c	VG

(*) (+)	**Shape of base**	Obtuse	2	Shasta, Phenomen, Majestic		
		Rounded	3	Elista		
13. (+)	**Terminal leaflet: Margin**	Serrate	1	Tillamook. Shasta	c	VG
		Intermediate	2	Doughlas		
		Crenate	3	Kimberley, Missionary, Howard		
14. (+)	**Terminal Leaflet: Shape in cross section**	Concave	1	Tillamook, Kimberley, Phenomen,	c	VG
		Straight	2	Howard		
		Convex	3	Missionary, Majestic Brighton		
15.	**Petiole: Length (cm)**	Short (< 8)	3	Douglas, Fiana, Florida	c	MG
		Medium (8-12)	5	Kimberley, Missionary, Shasta		
		Long (> 12)	7	Tillamook, Howard, Phenomenon		
16. (+)	**Petiole** **: Attitude of hair**	Upwards	1	Blackmore, Kimberley, Heera	c	VG
		Horizantal	3	Brighton, Katrain Sweet-2, VL-l		
17.	**Stipule: Anthocyanin coloration**	Weak	3	Tillamook, Missionary, Douglas	a	VG
		medium	5	Howard, Heera, Blackmore		
		Strong	7	Shasta, Wild		
18.	**Inflorescence: Number of flowers/** **Inflorescence**	Few (< 4)	3	Bangalora, Cammarosa	b	VS
		Medium (4-7)	5	Missionary, Blackmore, Shasta, Douglas		
		Many (>7)	7	Tillamook, Kimberley, Majestic		
19.	**Flower Diameter(mm)**	Small (< 27)	3	Dana, Florida, Kimberley	b	MS
		Medium (27-32)	5	Brighton, Howard, Tillamook		

		Large (> 32)	7	Heera, Shasta, Douglas		
20. (*) (+)	**Flower: Relative arrangement of petals**	Free	1	Brighton, Heera, Howard	b	VG
		Touching	2	Katrain Sweet, Dilpasand		
		Overlapping	3	Kimberley, Blackmore, Tillamook		
21. (*) (+)	**Flower: Size of calyx in relation to corolla**	Smaller (<1)	1	Blackmore, Phenomen, Larson	b	MS
		Same size (=1)	2	Douglas, Heera		
		Larger (>1)	3	Brighton, Kimberley		
22.	**Petal: Length width ratio**	shorter (<1)	3	Cammarosa, Tillamook, Brighton	b	MG
		Equal (=1)	5	-		
		Larger (>1)	7	Katrain Sweet-1, Howard		
23. (*)	**Petal: Colour of upper side**	Greenish White	1	Larson, Kimberley, Tillamook, Brighton,	b	VG
		White	2	Sweet Heart, Shimla Delicious, Julicot		
		Pink	3	-		
		Red	4	-		
24. (*)	**Fruit: Length width ratio**	shorter (<1)	3	Tillamook, Heera, Elista,	d	MG
		Equal (=1)	5	Phenomen, Majestic		
		longer (>1)	7	Missionary, Howard, Brighton		
25. (*)	**Fruit: Size (weight in g)**	Small (<6)	3	Blackmore, Catskill, Fair Fax	d	MG
		Medium (6-9)	5	Phenomen, Florida, Pajaro		
		Large (>9)	7	Brighton, Missionary, Howard		

26. (*) (+)	**Fruit: Shape**	Reniform	1	Early Dawn	d	VS
		Obloid	2	Blackmore, Red Coat, Heera		
		Globose	3	Phenomen, Larson, Elista		
		Conical	4	Brighton, Missionary, Jutogh Special		
		Rhomboid	5	Gorella, Rear Ground, Swiss-2		
		Ovoid	6	Catskill, Swiss		
		Cylindrical	7	Douglas		
		Wedged	8	-		
		Cordiform	9	-		
27. (*)	**Fruit: Colour**	Whitish yellow	1	-	d	VS
		Orange	2	Phenomen, Red Coat		
		Orange red	3	Majestic, Cavaliar, Blackmore		
		Red	4	Catskill, , Florida		
		Dark red	5	Missionary, Bangalora, Rear Ground		
		Redish black	6	Jutogh Special, Douglas, Gorella		
28.	**Fruit: Evenness of color**	Even	1	Kimberley, Howard, Brighton	d	VS
		Slightly uneven	2	Phenomen, Catskill, Rear Ground		
		Uneven	3	Majestic, Jutogh Special, Fiana		
29.	**Fruit: Glossiness**	Weak	1	Robinson, Larson, Katrain Sweet-1	d	VS
		Medium	2	Missionary, Phenomen, Majestic		
		Strong	3	Brighton, Howard, Tillamook		
30.	**Fruit: Evenness of surface**	Even or very slightly uneven	1	Phenomen, Missionary, Camarosa	d	VS
		Slightly uneven	2	Swiss, Shasta, Majestic		
		Strongly uneven	3	Jutogh Special, Catskill, Anthea		
31.	**Fruit: Width of band without**	Narrow	3	Camarosa, Heera, Larson	d	VS

(+)	**achenes**	Medium	5	Blackmore, Kimberley, Missionary		
		Broad	7	Gorella, , Swiss-2		
32. (*) (+)	**Fruit: Position of achnes**	Below surface	1	Phenomenon, Fiana, Douglas	d	VS
		Level with surface	2	Shasta, Majestic, Cavaliar		
		Above surface	3	Tillamook, Kimberley, Howard		
33. (*) (+)	**Fruit: Position of calyx attachment**	Inserted	1	Elista, Bangalora	d	VS
		Level with ground	2	Tillamook, Kimberley, Missionary		
		Exserted	3	Majestic, Fair Fax, Addie		
34. (*) (+)	**Fruit: attitude of sepals**	Upward	1	Majestic, Sweet Heart, Shimla Delicious	d	VS
		Downwards	2	Kimberley, Doughlas, Howard,		
		Outward	3	Tillamook, Elista, Red Cross		
35.	**Fruit: Diameter of calyx in relation to diameter of fruit (mm)**	smaller (<0.8)	3	Kimberley, Elista, Tillamook	d	MG
		Equal (0.8-1.2)	5	Howard, Cammarosa,		
		Slightly larger (>1.2)	7	Red Cross, Missionary, Brighton		
36.	**Fruit: Adherence of calyx**	Weak	3	Cavaliar Missionary, Majestic	d	VS
		Medium	5	Heera, Blackmore, Howard		
		Strong	7	Tillamook, Kimberley, Camarosa		
37.	**Fruit: Firmness (RI)**	Soft (<20)	3	Brighton, Tillamok, Missionary	d	MG
		Medium (20-30)	5	Katrain Sel-2, Heera,		

		Firm (>30)	7	Phenomenon, Majestic, Kimberley, Howard		
38. (+)	**Fruit : Colour of flesh (excluding core)**	Whitish	1	Blackmore, Shasta, Howard	d	VS
		Light Pink	2	Sweet Heart, Addie		
		Orange Red	3	Red Cross, Kimberley, Missionary		
		Red	**4**	**Douglas, Gorella**		
39. (+)	**Fruit: Colour of core**	White	1	Blackmore, Shasta, Banglora	d	VS
		Pink	**2**	**Catskill**		
		Orange	**3**	**Heera**		
		Red	**4**	**Swiss-2, Anthea ,**		
40. (+)	**Fruit: Cavity**	Small	3	Kimberley, Doughlas, Missionary	d	VS
		Medium	5	Brighten, Camarosa, Cavaliar		
		Large	7	Zem, Howard, Heera		
41. (*)	**Time of beginning of flowering**	Early	3	Brighton, Cavaliar, Swiss-2	b	VG
		Medium	5	Phenomen, Jutogh Special, Missionary		
		Late	7	Addie, Blackmore, Fair Fax		
42.	**Time of beginning of ripening**	Early	3	Kimberley, Lucundi, Sweet Heart	d	VG
		Mid season	5	Phenomenon, Jutogh Special, Douglas		
		Late	7	Camarosa, Katrain Sweet, Howard		
43.	**Type of bearing**	Not remontant	1	Kimberley, Missionary, Elista,	d	VS

(*)		Partially remontant	2	Sweet Charlie		
		Fully remontant	3	-		
		Day neutral	4	-		

XIII. Explanation for the Table of characteristics

Characteristics 1: Plant growth habit

Upright

(1)

Semi- upright

(2)

Spreading

(3)

Characteristics 2: Density of foliage

Sparse

(3)

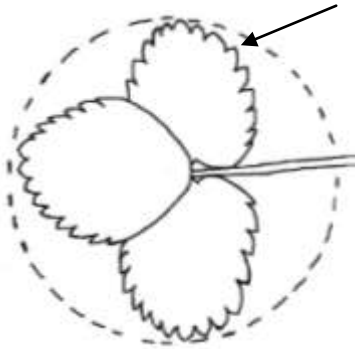
Medium

(5)

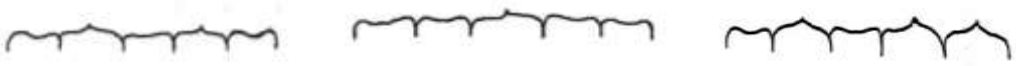
Dense

(7)

Characteristics 7: Leaf Circumference



Characteristics 9: Leaf: blistering



Absent (1)

Medium (3)

Strong (3)

Characteristics 12: Terminal leaflet: Shape of base

Acute (1)

Obtuse (2)

Rounded (3)

Characteristics 13: Terminal leaflet: Margin

Serrate (1)

Intermediate (2)

Crenate (3)

Characteristics 14: Terminal leaflet: shape in cross section

Concave

Straight

Convex

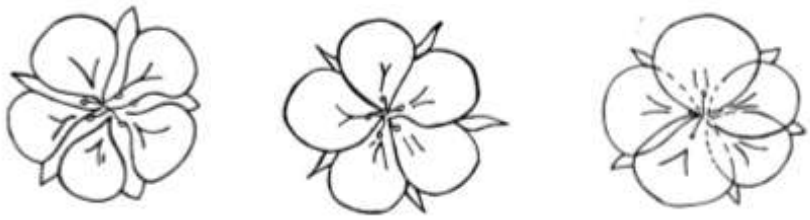
Characteristics 16: Petiole: attitude of hairs

Upwards
(1)

Slightly
Outwards
(2)

Horizontal
(3)

Characteristics 20: Flower: relative arrangement of petals

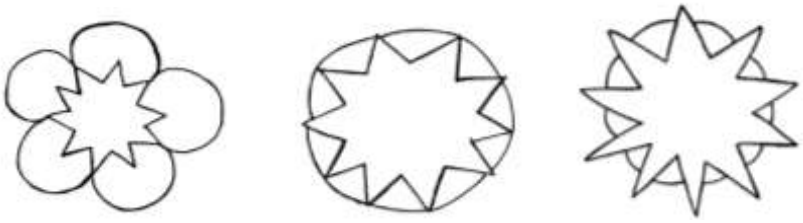


Free
(1)

Touching
(2)

Overlapping
(3)

Characteristics 21: Flower: size of clayx in relation to corolla



Smaller
(3)

Same size
(5)

Larger
(7)

Characteristics 26: Fruit: Shape

Reniform
(1)

Obloid
(2)

Globose
(3)

Conic (4)

Rhomboid
(5)

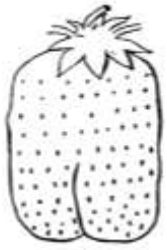
Ovoid
(6)

Cylindric
(7)

Wedged
(8)

Cordiform
(9)

Characteristics 31: Fruit: width of band without achenes

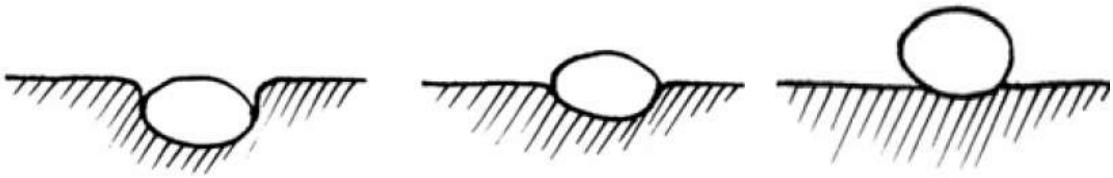


Narrow
(3)

Medium
(5)

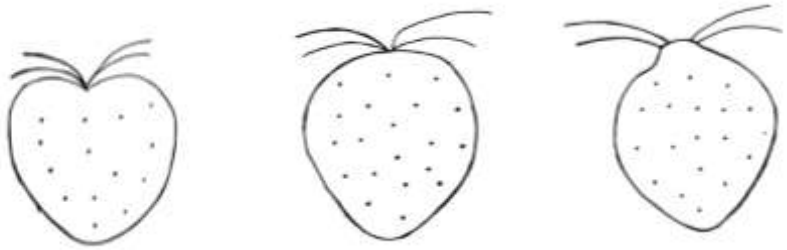
Broad
(7)

Characteristics. 37: Fruit: Position of achnes



Below Surface | Level With Surface | Above surface

Characteristics. 33: Fruit: position of calyx attachment



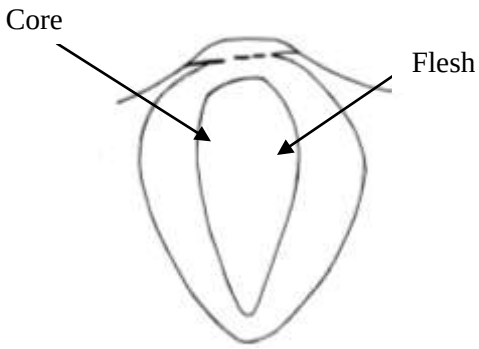
Inserted (1) | Level with fruit (2) | Exerted (3)

Characteristics 34: Fruit: attitude of sepals

Upwards (1) | Downwards (3) | Outwards (2)

Characteristics 38: Fruit: color of Flesh (excluding Core)

Characteristics 39: Fruit: color of core (excluding Flesh)



Characteristics 40: Fruit: Cavity

Absent (1)

Medium (2)

Large (3)

Working Group details:

The task force has finalized the DUS test guidelines for Strawberry with support of Dr. S. R. Singh, Prof. Nazeer Ahmed and Senior Research Fellow Dr. Raja Hadin Shafi Raja from nodal centre and Dr. BNS Murthy, Nodal office of sub centre, IIHR, Bangalore. The officials of the PPV&FR Authority including Dr. Tejbir Singh, Registrar and Sh. Dipal Roy Choudhury, Joint Registrar also provided technical input

The members of task force

1	**Dr. J. P. Tiwari,** Ex- Dean, College of Agriculture **irman** G. B. Pant University of Agriculture & Technology, **Resi:** 14/495, Sector-14, Vikas Nagar, Lucknow-226022	Chair Man
2	**Dr. Nazeer Ahmed,** Director, Central Institute of Temperate Horticulture, Srinagar-190 007	**Member**
3	**Dr. S. R. Singh,** Senior Scientist, Central Institute of Temperate Horticulture, (CITH) Srinagar-190 007	**Member**
4	**Dr. K.K. Srivastava,** Senior Scientist, Division of Fruit Science Central Institute for Subtropical Horticulture PO Kakori, Rehmankhera, Lucknow- 227107	**Member**
5	**Dr. B. N. S. Murthy,** Principal Scientist Division of Fruit Crops Indian Institute of Horticulture Research, Bangalore-560089	**Member**
6	**Dr. Manoj Srivastava** Registrar PPV&FR Authority, New Delhi	**Member Secretary**

1. Nodal Person from Nodal Centre- Central Institute of Temperate Horticulture Rangregth Srinagar

Dr. S.R.Singh and Prof. Nazeer Ahmed
Central Institute of Temperate Horticulture Rangregth Srinagar
2.Nodal Person from Sub Centre- Indian Institute of Horticulture Research, Bangalore
Dr. B. N. S. Murthy,
Indian Institute of Horticulture Research, Bangalore-560089

PUBLIC NOTICE

Details of registration certificate for inviting claims of benefit sharing under sub section 1 of section 26 of PPV&FR Act, 2001 read with rule 40 of PPV&FR Rules, 2003.

The details of registration certificates which have been issued under section 24 (2) of PPV &FR Act, 2001 are published herein for invitation of claims for benefit sharing.

Any person or group of persons, being citizen(s) of India or firm or governmental or non-governmental organization formed or established in India shall submit their claims for benefit sharing (under Section 26 (2) of PPV&FR Act, 2001 read with Rule 41 of PPV&FR Rules, 2003) in Form PV 7 of the First schedule (in triplicate) within a period of six months from the date of publication. Claims for benefit sharing if any shall be submitted to the Registrar, PPV&FR Authority, NASC Complex, DPS Marg, New Delhi-110012 accompanied with the fee of Rs. 5000/- (Rupees Five Thousand Only) by way of Demand Draft drawn in favour of the "Registrar, PPV&FR Authority" payable at New Delhi.

Certificate of Registration No. 201 of 2013

(1) Registration Number and date of grant:- **201 of 2013 & 14/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Bioseed Research India Private Limited, Plot No. 206, Road No-14, Jubliee Hills, Hyderabad-50003, A.P.

(3) Denomination of the variety:- **BIO 404**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Extant (VCK)/hybrid/Rice**

(5) Parentage and geographical location of the variety:-

IR58025A/IR58025 BX HR 411120R

(6) Details of the distinguishing features or the characteristics:-

Long panicle length of main axis and Present panicle awns.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 202 of 2013

(1) Registration Number and date of grant:- **202 of 2013 & 15/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Krishidhan Seeds Private Limited, D3 to D6, Additional MIDC Area, Aurangabad Road, JALNA (MS)

(3) Denomination of the variety:- **KSL-120014**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **New/hybrid/Rice**

(5) Parentage and geographical location of the variety:-

KSL-1A/KSL-1B X RR-84

(6) Details of the distinguishing features or the characteristics:-

Well exerted panicle.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 203 of 2013

(1) Registration Number and date of grant:- **203 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Budura Poraja and others, Kadali Munda, Block-Kundra, Dist-Koraput, State-Orisha

(3) Denomination of the variety:- **LADARI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Medium amylase content in endosperm.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 204 of 2013

(1) Registration Number and date of grant:- **204 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Parameswar Mahapatra and others, Ramabilli, Block-Tangi, Dist-Khurdha, State-Odisha

(3) Denomination of the variety:- **RATAN CHUDI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Medium amylase content in endosperm.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 205 of 2013

(1) Registration Number and date of grant:- **205 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dilip Kumar Rawla and others, Ranpa, Block-Khuntuni, Dist-Cuttack, State-Odisha

(3) Denomination of the variety:- **KALABHUTIA**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Purple black colour of lemma and Palea.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 206 of 2013

(1) Registration Number and date of grant:- **206 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Bhagirathi Sahu and others, Bhutibabal, Block-Gaisilat Dist-Bargarh, State-Odisha

(3) Denomination of the variety:- **DENGABARI**

(4) Name of:

Family: Poaceae

Genus: *Oryza*

Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Medium amylase content in Endosperm.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 207 of 2013

(1) Registration Number and date of grant:- **207 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dharmu Dhala and others, Duhulpali, Block-Birmahasaipur, Dist-Sonepur, State-Odisha

(3) Denomination of the variety:- **KUSUMKHUNTALA**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Medium amylase content in Endosperm, Medium size of grain length.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 208 of 2013

(1) Registration Number and date of grant:- **208 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dhanurjay Ghiuria and others, Nuaguda, Block-Kundra, Dist-Koraput, State-Odisha

(3) Denomination of the variety:- **JAKSARU**

(4) Name of:
Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-
Strong density of lemma pubescence.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 209 of 2013

(1) Registration Number and date of grant:- **209 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dilip Kumar Behera and Others, Antapali, Block-Bhatli, Dist-Baragarh, State-Odisha

(3) Denomination of the variety:- **BASPATARI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Strong density of lemma pubescence, Purple color of sterile lemma.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 210 of 2013

(1) Registration Number and date of grant:- **210 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Jugal Behera and Others, Bhardhara, Block-Khariar, Dist-Nuapada, State-Odisha

(3) Denomination of the variety:- **LAL GORI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Strong density of lemma pubescence.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 211 of 2013

(1) Registration Number and date of grant:- **211 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Santosh Saha and Others, Siletpali, Block-Padampur, Dist-Baragarh, State-Odisha

(3) Denomination of the variety:- **DANISARIA**

(4) Name of:
Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Strong density of lemma pubescence.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 212 of 2013

(1) Registration Number and date of grant:- **212 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Sri Pyari Duria and Others,

Saipala, Block-Nuapada, Dist-Nuapada, State-Odisha

(3) Denomination of the variety:- **SAPARI**

(4) Name of:
Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Absence of awns and medium grain width.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 213 of 2013

(1) Registration Number and date of grant:- **213 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Hadan Majhi and others,

Tundamuhi, Block-Th-Rampur, Dist-Kalahandi, State-Odisha

(3) Denomination of the variety:- **SENKARA**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Presence of awns.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 214 of 2013

(1) Registration Number and date of grant:- **214 of 2013 & 29/10/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Sunil Kumar Majhi and others,

Chikalchuan, Block-Boden, Dist-Nuapada, State Odisha

(3) Denomination of the variety:- **PUAGI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:- **NA**

(6) Details of the distinguishing features or the characteristics:-

Strong density of lemma pubescence, awns and distributed on tip only.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 215 of 2013

(1) Registration Number and date of grant:- **215 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Nirmal Seeds Pvt. Ltd.,

P.O. Box-63, Bhadgaon Road, Pachora-424201

(3) Denomination of the variety:- **Kranti (NR-89)**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *Sativa.*

Variety and common name: **Extant(VCK)/hybrid/Rice**

(5) Parentage and geographical location of the variety:-

Acc-63 X Acc-11/HD

(6) Details of the distinguishing features or the characteristics:-

Decorticated grain shape (in lateral view).

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 216 of 2013

(1) Registration Number and date of grant:- **216 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Nusun Genetic Research Limited,
Inspire, Plot # 21, Huda Technoenclave Hitec City,
Madhapur, Hyderabad

(3) Denomination of the variety:- **VSFH-2006 (FAME)**

(4) Name of:

Family: Compositae
Genus: *Helianthus*
Species: *annuus.*

Variety and common name: **Extant(VCK)/hybrid/Sunflower**

(5) Parentage and geographical location of the variety:-

210002A X 230077

(6) Details of the distinguishing features or the characteristics:-

Early time of 50% flowering and convex shape of grain head side.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 217 of 2013

(1) Registration Number and date of grant:- **217 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Vibha Agrotech Limited, Inspire Plot # 21, HUDA Technoenclave, Hitech City, Madhapur, Hyderabad.

(3) Denomination of the variety:- **VSFH-1006 (CLARA)**

(4) Name of:
Family: Compositae
Genus: *Helianthus*
Species: *annuus.*

Variety and common name: **Extant(VCK)/hybrid/Sunflower**

(5) Parentage and geographical location of the variety:-

210020A X 230021

(6) Details of the distinguishing features or the characteristics:-

Convex shape of grain head side.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 218 of 2013

(1) Registration Number and date of grant:- **218 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Kaveri Seeds Company Limited, # 513-B, 5th Floor, Minerva Complex, S.D. Road, Secunderabad-500003, A.P..

(3) Denomination of the variety:- **KSFH-678**

(4) Name of:

Family: Compositae
Genus: *Helianthus*
Species: *annuus.*

Variety and common name: **Extant(VCK)/hybrid/Sunflower**

(5) Parentage and geographical location of the variety:-

K-678 A X K-678 R

(6) Details of the distinguishing features or the characteristics:-
Convex shape of grain side of head.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 219 of 2013

(1) Registration Number and date of grant:- **219 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, dr. Rajendra Prasad Road, New Delhi-14

(3) Denomination of the variety:- **Maya (RK-9902)**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *Juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Varuna X KRV-11

(6) Details of the distinguishing features or the characteristics:-

Medium green leaf colour, medium leaf number of lobes, medium leaf length, medium leaf width, medium flower length of petals, long plant main shoot length, medium siliqua number on main shoot, late maturity period, brown seed colour and medium seed size.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Maya (RK-9902) has been commercialized since 2001.

Certificate of Registration No. 220 of 2013

(1) Registration Number and date of grant:- **220 of 2013 & 05/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research, Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **BASANTI (RK 8501)**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *Juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Varuna X K1

(6) Details of the distinguishing features or the characteristics:-

Absent leaf hairiness, high leaf number of lobes, medium leaf length, medium leaf width, short flower length of petals, long plant main shot length, very tall plant height, very few siliqua number on main shoot, high siliqua density on main shoot, few siliqua number of seeds per siliqua, yellow seed colour and medium seed sire.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
BASANTI (RK 8501) has been commercialized since 2001.

Certificate of Registration No. 221 of 2013

(1) Registration Number and date of grant:- **221 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

CSK Himachal Pradesh Krishi Vishvavidyalaya,

Palampur-176062 (H.P.)

(3) Denomination of the variety:- **RCC 4**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *Juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Nil

(6) Details of the distinguishing features or the characteristics:-

Serrate dentations of margin, early time of flowering, yellow flower colour of petals, very few siliqua number of seeds per siliqua, dark drown seed colour, medium seed size and medium seed oil content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
RCC 4 has been commercialized since 2001.

Certificate of Registration No. 222 of 2013

(1) Registration Number and date of grant:- **222 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

CSK Himachal Pradesh Krishi Vishvavidyalaya,

Palampur-176062 (H.P.)

(3) Denomination of the variety:- **NEELAM (HPN 3)**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *napus.*

Variety and common name: **Extant/Gobhi Sarson**

(5) Parentage and geographical location of the variety:-

Nil

(6) Details of the distinguishing features or the characteristics:-

Very tall plant height, dark green leaf colour, late time of flowering, yellow flower colour of petal, medium seed size and high seed oil content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NEELAM (HPN 3) has been commercialized since 2001.

Certificate of Registration No. 223 of 2013

(1) Registration Number and date of grant:- **223 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

CSK Himachal Pradesh Krishi Vishvavidyalaya,

Palampur-176062 (H.P.)

(3) Denomination of the variety:- **KBS-3**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *rapa.*

Variety and common name: **Extant/Rapeseed**

(5) Parentage and geographical location of the variety:-

Pusa Kalyani X Yukina

(6) Details of the distinguishing features or the characteristics:-

Medium time of flowering, yellow flower colour of petal, reddish brown seed colour, small seed size and high oil content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
KBS-3 has been commercialized since 2001.

Certificate of Registration No. 224 of 2013

(1) Registration Number and date of grant:- **224 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **YSH 0401**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *rapa.*

Variety and common name: **Extant/Rapeseed**

(5) Parentage and geographical location of the variety:-

Selection from germplasm

(6) Details of the distinguishing features or the characteristics:-

Long leaf, length, broad leaf width, yellow flower colour of petals, medium plant height, long siliqua length of beak and bold seed size.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
YSH 0401 has been commercialized since 2009.

Certificate of Registration No. 225 of 2013

(1) Registration Number and date of grant:- **225 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **Vasundhra (RH 9304)**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

RH839 X RH30

(6) Details of the distinguishing features or the characteristics:-

Medium leaf length, medium leaf width, bold seed size, high siliqua density on main shoot and short siliqua length.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Vasundhra (RH 9304) has been commercialized since 2003.

Certificate of Registration No. 226 of 2013

(1) Registration Number and date of grant:- **226 of 2013 & 06/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **RH0119**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Pusa Bold X Rajat (PCR 7)

(6) Details of the distinguishing features or the characteristics:-

Long leaf length, long plant main shoot length, medium siliqua length and brown seed colour.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
RH0119 has been commercialized since 2010.

Certificate of Registration No. 227 of 2013

(1) Registration Number and date of grant:- **227 of 2013 & 07/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **Swarna Jyoti (RH 9801)**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Selection from germplasm lines RC 1670

(6) Details of the distinguishing features or the characteristics:-

High leaf number of lobes, medium plant height, dentate leaf dentation of margin, medium seed size and medium maturity period.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Swarna Jyoti (RH 9801) has been commercialized since 2003.

Certificate of Registration No. 228 of 2013

(1) Registration Number and date of grant:- **228 of 2013 & 07/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-114

(3) Denomination of the variety:- **RB-50**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Laxmi X RH 9617

(6) Details of the distinguishing features or the characteristics:-

Medium number of seeds per siliqua, long siliqua length, bold seed size and undulated siliqua texture.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
RB-50 has been commercialized since 2009.

Certificate of Registration No. 229 of 2013

(1) Registration Number and date of grant:- **229 of 2013 & 07/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Punjab Agricultural University, Ferozepur Road, Ludhiana-141004

(3) Denomination of the variety:- **GSC 5**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *napus.*

Variety and common name: **Extant/Gobhi Sarson**

(5) Parentage and geographical location of the variety:-

Hyola 401 X (Agat X GSL 8888)

(6) Details of the distinguishing features or the characteristics:-

Medium green leaf colour, present leaf lobes, yellow flower colour of petals, medium plant height, long siliqua length, few siliqua number on main shoot, medium number of seeds per siliqua, late maturity period and medium seed oil content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
GSC 5 has been commercialized since 2007.

Certificate of Registration No. 230 of 2013

(1) Registration Number and date of grant:- **230 of 2013 & 07/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Punjab Agricultural University,

Ferozepur Road, Ludhiana-141004

(3) Denomination of the variety:- **OCN – 3**

(4) Name of:

Family: Brassicacae
Genus: *Brassica*
Species: *napus.*

Variety and common name: **Extant/Gobhi Sarson**

(5) Parentage and geographical location of the variety:-

NECN 13 X (Tribute X NECN 13)

(6) Details of the distinguishing features or the characteristics:-

Medium green leaf colour, present leaf lobes, yellow flower colour of petals, tall plant height, long siliqua length, medium siliqua number on main shoot, smooth siliqua texture, dark brown seed colour and medium oil content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
OCN – 3 has been commercialized since 2008.

Certificate of Registration No. 231 of 2013

(1) Registration Number and date of grant:- **231 of 2013 & 08/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dantiwada Seed Private Limited,
211, Sakar-V, B/H Natraj Cinema,
Ashram Road, Ahmedabad-380009, Gujarat.

(3) Denomination of the variety:- **DSP 222 (DSP 222)**

(4) Name of:

Family: Euphorbiaceae
Genus: *Ricinus*
Species: *communis.*

Variety and common name: **Extant/Castor**

(5) Parentage and geographical location of the variety:-

DI2 X DI 17

(6) Details of the distinguishing features or the characteristics:-
Present hypocotyls pigmentation, present leaf anthocyanin pigmentation of young emerging leaves, absent leaf waxi bloom on upper side, present leaf waxi bloom on lower side, present stem waxi bloom, mahogany stem colour, elongated stem type of internodes, long leaf length of 4th leaf from top etc.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
DSP 222 (DSP 222) has been commercialized since 2012.

Certificate of Registration No. 232 of 2013

(1) Registration Number and date of grant:- **232 of 2013 & 08/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **BINWA (KL-210)**

(4) Name of:

Family: Linaceae
Genus: *Linum*
Species: *usitatissimum.*

Variety and common name: **Extant/Linseed**

(5) Parentage and geographical location of the variety:-

Flak-1 X SPS47/7 -10-3

(6) Details of the distinguishing features or the characteristics:-

Red-violet flower colour, twisted flower aestivation, blue flower venation colour, blue anther colour, semi erect plant growth habit, yellow seed colour and low seed weight of 1000 seeds.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
BINWA (KL-210) has been commercialized since 2005.

Certificate of Registration No. 233 of 2013

(1) Registration Number and date of grant:- **233 of 2013 & 08/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Baner (KL-224)**

(4) Name of:

Family: Linaceae
Genus: *Linum*
Species: *usitatissimum.*

Variety and common name: **Extant/Linseed**

(5) Parentage and geographical location of the variety:-

EC-21741 X LC-216

(6) Details of the distinguishing features or the characteristics:-

Blue flower colour, twisted flower aestivation, blue flower venation colour and non-dehiscent capsule dehiscence.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Baner (KL-224) has been commercialized since 2005.

Certificate of Registration No. 234 of 2013

(1) Registration Number and date of grant:- **234 of 2013 & 08/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Syngenta India Limited,
Amar paradigm, S.No. 110/11/3,
Baner-Balewadi Road, Baner, Pune-411045, Maharashtra.

(3) Denomination of the variety:- **SYN-RI-NR 7098**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **New/typical/Rice**

(5) Parentage and geographical location of the variety:-

NR 1563 X Nr 6196

(6) Details of the distinguishing features or the characteristics:-
Long of decorticated grain length.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 235 of 2013

(1) Registration Number and date of grant:- **235 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

CSK Himachal Pradesh Krishi vishvavidyalaya,

Palampur-176062 (HP).

(3) Denomination of the variety:- **Him Sarson-1**

(4) Name of:

Family: Brassicaceae
Genus: *Brassica*
Species: *napus.*

Variety and common name: **Extant/Gobhi Sarson**

(5) Parentage and geographical location of the variety:-

Selection from exotic line EC-129127

(6) Details of the distinguishing features or the characteristics:-

Light green leaf colour, late time of flowering, yellow flower colour of petals, reddish brown seed colour, medium seed size, long siliqua length, many number of seeds per siliqua, absent leaf hairiness and very tall plant height .

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Him Sarspm-1 has been commercialized since 2009.

Certificate of Registration No. 236 of 2013

(1) Registration Number and date of grant:- **236 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Kanti (RK-9807)**

(4) Name of:

Family: Brassicaceae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Selection from germplasm collected from Kanput Dehat

(6) Details of the distinguishing features or the characteristics:-
Medium leaf number of lobes, medium leaf length, medium leaf width, medium time of flowering, short flower length of petals, medium plant main shoot length, medium plant height, short siliaqua length, medium siliqua length of beak, very few siliqua number on main shoot etc.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Kanti (RK-9807) has been commercialized since 2003.

Certificate of Registration No. 237 of 2013

(1) Registration Number and date of grant:- **237 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Urvashi (RK 9501)**

(4) Name of:

Family: Brassicaceae
Genus: *Brassica*
Species: *juncea.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-
Varuna X Kranti

(6) Details of the distinguishing features or the characteristics:-

High leaf number of lobes, long leaf length, broad leaf width, short flower length of petals, long plant main shoot length, medium siliqua number on main shoot, late maturity period, brown seed colour and medium seed size.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Urvashi (RK 9501) has been commercialized since 2001.

Certificate of Registration No. 238 of 2013

(1) Registration Number and date of grant:- **238 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

M/s Kaveri Seed Company Limited
 # 513 B, 5th Floorm Minerva Complex,
S.D. Roadm Secunderabad-500003, A.P.

(3) Denomination of the variety:- **Kaveri Rice-1**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **New/typical/Rice**

(5) Parentage and geographical location of the variety:-

KPG-233 X KPG-84

(6) Details of the distinguishing features or the characteristics:-

Erect flag leaf and short length of main axis of panicle.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 239 of 2013

(1) Registration Number and date of grant:- **239 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

M/s Kaveri Seed Company Limited
 # 513 B, 5th Floorm Minerva Complex,
S.D. Roadm Secunderabad-500003, A.P.

(3) Denomination of the variety:- **KSFH-7049**

(4) Name of:

Family: Asteraceae
Genus: *Helianthus*
Species: *annuus.*

Variety and common name: **Extant (VCK)/hybrid/Sunflower**

(5) Parentage and geographical location of the variety:-

KSF-270A X KSF-097 R

(6) Details of the distinguishing features or the characteristics:-
Short seed length.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
NA.

Certificate of Registration No. 240 of 2013

(1) Registration Number and date of grant:- **240 of 2013 & 19/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Uttara (PT-2002-25)**

(4) Name of:

Family: Brassicaceae
Genus: *Brassica*
Species: *rapa.*

Variety and common name: **Extant/Rapeseed**

(5) Parentage and geographical location of the variety:-
Recurrent selection prom PT-303

(6) Details of the distinguishing features or the characteristics:-
Absent leaf hairiness, late time of flowering, medium flower length of petals, long plant main shoot length, very tall plant height, medium siliqua length, medium siliqua number on main shoot, high siliqua density on main.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Uttara (PT-2002-25) has been commercialized since 2010.

Certificate of Registration No. 241 of 2013

(1) Registration Number and date of grant:- **241 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Jawahar Soybean 97-52 (JS97-52)**

(4) Name of:

Family: Fabaceae
Genus: *Glycine*
Species: *max (L.) Merrill).*

Variety and common name: **Extant/Soybean**

(5) Parentage and geographical location of the variety:-

PK 327 X L 129

(6) Details of the distinguishing features or the characteristics:-

Semi-determinate plant growth type, medium plant time of 50% flowering, medium plant height, medium plant days to maturity, small seed size, black seed hilum colour, high seed oil content and medium seed protein content.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Jawahar Soybean 97-52 (JS97-52) has been commercialized since 2008.

Certificate of Registration No. 242 of 2013

(1) Registration Number and date of grant:- **242 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Samrudhi (MAUS-71)**

(4) Name of:

Family: Fabaceae
Genus: *Glycine*
Species: *max (L.) Merrill).*

Variety and common name: **Extant/Soybean**

(5) Parentage and geographical location of the variety:-

JS-71-05 X JS-87-38

(6) Details of the distinguishing features or the characteristics:-

Dark green leaf colour, medium plant height, absent pod pubescence and black seed hilum colour.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Samrudhi (MAUS-71) has been commercialized since 2002.

Certificate of Registration No. 243 of 2013

(1) Registration Number and date of grant:- **243 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Dr. Punjabrao Deshumkh Krishi Vidyapeeth,

Akola, College of Agriculture, Krishinagarm P.O. Akola-444104.

(3) Denomination of the variety:- **Shatabdi (CAN-9)**

(4) Name of:

Family: Cruciferae
Genus: *Brassica*
Species: *juncea L. Czern & coss.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

Seeta X RW 351

(6) Details of the distinguishing features or the characteristics:-

High leaf number of lobes, early time of flowering, long plant main shoot length, short plant height, early maturity period and small seed size.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Shatabdi (CAN-9) has been commercialized since 2007.

Certificate of Registration No. 244 of 2013

(1) Registration Number and date of grant:- **244 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **JS-93-05 (Jawahar Soybean 93-05)**

(4) Name of:

Family: Fabaceae
Genus: *Glycine*
Species: *max (L.) Merrill.*

Variety and common name: **Extant/Soybean**

(5) Parentage and geographical location of the variety:-

Secondary selection from PS 73-22

(6) Details of the distinguishing features or the characteristics:-

Present hypocotyls anthocyanin pigmentation, semi determinate plant growth type, medium plant days to 50% flowering, purple flower colour, absent pod pubescence, black pod colour, early plant days to maturity medium seed size, yellow seed colour, black seed hilum colour and yellow seed cotyledon colour.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
JS-93-05 (Jawahar Soybean 93-05) has been commercialized since 2002.

Certificate of Registration No. 245 of 2013

(1) Registration Number and date of grant:- **245 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Central Sole Salinity Research Institute,

Zarifa Farm, Kachhwa Road, Karnal-132001, Haryana.

(3) Denomination of the variety:- **CS 56 (CS 234-2)**

(4) Name of:

Family: Brassicaceae
Genus: *Brassica*
Species: *juncea L. czern & coss.*

Variety and common name: **Extant/Indian Mustard**

(5) Parentage and geographical location of the variety:-

RH 851 X Pusa Bold

(6) Details of the distinguishing features or the characteristics:-

Medium time of flowering, late maturity period, very long plant main shoot length, brown seed colour, bold seed size, medium seed oil content percentage, sparle leaf hairiness and semi oppressed siliqua angle with main shoot.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
CS 56 (CS 234-2) has been commercialized since 2008.

Certificate of Registration No. 246 of 2013

(1) Registration Number and date of grant:- **246 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Indian Council of Agricultural Research,

Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi.

(3) Denomination of the variety:- **Jawahar Soybean 95-60 (JS 95-60)**

(4) Name of:

Family: Fabaceae
Genus: *Glycine*
Species: *max (L.) Merrill.*

Variety and common name: **Extant/Soybean**

(5) Parentage and geographical location of the variety:-

Secondary selection from PS 73-22

(6) Details of the distinguishing features or the characteristics:-

Present hypocotyl anthocyanin, pigmentation, determinate plant growth type, early time of 50% flowering, purple flower colour, absent pod pubescence, brown pod colour, early plant days to maturity, large seed size, yellow seed colour and yellow seed cotyledon colour.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.
Jawahar Soybean 95-60 (JS 95-60) has been commercialized since 2007.

Certificate of Registration No. 247 of 2013

(1) Registration Number and date of grant:- **247 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Basudha, Binodbati, P.O. Layekbandh, Bankura-722157.

(3) Denomination of the variety:- **LILABATI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Attitude of blade of flag leaf in semi erect, length of main axis of panicle is long and medium amylase content in endosperm.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 249 of 2013

(1) Registration Number and date of grant:- **249 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Kishore Chandra Debta and others,

Jamutpali, Block-Gaisilet, Dist-Baragarh, State-Odisha.

(3) Denomination of the variety:- **SARSOFUL**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Light purple colour of leaf auricle, and strong density of lemma pubescence in spikelet.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 250 of 2013

(1) Registration Number and date of grant:- **250 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Basudha, Binodbati, P.O. Layekbandh, Bankura-722157, West Bangal.

(3) Denomination of the variety:- **KERALA SUNDARI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Very short stem length, gold and gold furrow on straw background of lemma and palea, late leaf senescence.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 251 of 2013

(1) Registration Number and date of grant:- **251 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Basudha, Binodbati, P.O. Layekbandh, Bankura-722157, West Bengal.

(3) Denomination of the variety:- **DUDHSAR**

(4) Name of:

Family: Poaceae

Genus: *Oryza*

Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Pubescence Of Leaf Blade Surface Is Medium, well exerted panicle and medium amylase content in endosperm.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 252 of 2013

(1) Registration Number and date of grant:- **252 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Trinath Challan and others,

Khoirimundi Block-Jaypore, Dist-Koraput, State-Odisha.

(3) Denomination of the variety:- **HALADI CHUDI**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Straw colour of sterile lemma.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 253 of 2013

(1) Registration Number and date of grant:- **253 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Basudha, Binodbati, P.O. Layekbandh,

Bankura-722157, West Bengal.

(3) Denomination of the variety:- **KELAS**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Absence of awns in spikelet, black colour of lemma tip.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

Certificate of Registration No. 254 of 2013

(1) Registration Number and date of grant:- **254 of 2013 & 20/11/2013**

(2) Name and address of applicant or breeder in whose name the certificate has been issued or registered:-

Basudha, Binodbati, P.O. Layekbandh, Bankura-722157, West Bengal.

(3) Denomination of the variety:- **ASIT KALMA**

(4) Name of:

Family: Poaceae
Genus: *Oryza*
Species: *sativa.*

Variety and common name: **Farmer/typical/Rice**

(5) Parentage and geographical location of the variety:-

NA.

(6) Details of the distinguishing features or the characteristics:-

Awns are present in spikelet.

(7) In case of 'essentially derived variety', the details of the 'initial variety' from which the 'essentially derived variety' is claimed to have been derived:- **NA**

(8) Name and address of the contributor, nature and amount of the contribution or the community knowledge used in the development of the plant variety:- **NA**

(9) Terms and conditions of the agreement, if any, entered into between the breeder and contributor:- **NA**

(10) If the variety is sold or otherwise disposed of, details thereof.

NA

PUBLIC NOTICE

Sub: Advertisement is given under sub-section (2) and (3) of Section 21 of the Protection of Plant Varieties and Farmers' Rights Act, 2001 and Rules 30 and 31 of PPV & FR Rules, 2003

It is hereby advertised that the application (s) for registration of varieties listed herein have been accepted subject to the condition of fulfillment of provisions under section 19 of the Act read with Rule 29 of PPV&FR Rules, 2003. The passport data of each variety furnished by the applicant are herewith advertised as specified for calling objections from the interested persons in the matter.

The place or places where the specimen of the variety may be inspected can be obtained in writing from the Registrar of the PPV & FR Authority.

Any person may, within three months from the date of advertisement of the application(s) give notice of opposition in writing to the registration of variety (as per Form PV-3 of the First Schedule of PPV&FR Rules, 2003). Oppositions, if any, to the registration must be submitted, in triplicate, to the Registrar, PPV&FRA, NASC Complex, DPS Marg, New Delhi -110 012 accompanied with the fee of Rs.1,500/- (Rupees One Thousand and Five Hundred Only) by way of Demand Draft drawn in favour of "The Registrar, PPV & FR Authority" payable at New Delhi.

FORM O - 1
(See Rule 30)
Government of India, Plant Varieties Registry
Advertisement of accepted application for registration

01. Application No. | **E49** | **SB11** | **08** | **57** | filed on **03.01.2008** by **The Director & Project Coordinator, National Research Centre for Sorghum (NRCS), Rajendranagar, Hyderabad-500030 (AP)** on behalf of **Indian Council of Agricultural Research (ICAR), Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-110001** for an **Extant** (Variety of Common Knowledge) of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **RS 627,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **RS 627**

Applicant : Indian Council of Agricultural Research (ICAR)

Address of the Applicant : Krishi Bhawan, Dr. Rajendra Prasad Road,
New Delhi-110001

Nationality of Applicant : Indian

Application details

a. Number : | **E49** | **SB11** | **08** | **57** |

b. Date of receipt : 03.01.2008

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : RS 627

Type of Variety : Extant (Variety of Common Knowledge)

Classification of Variety : Typical Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : RS 71 X M 35-1

Name of Reference Varieties : RS 673, RS 29

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: total height	Medium
Panicle: shape	Symmetric
Caryopsis : color after threshing	Yellow white

B. Distinct Characteristics: RS 627 has distinguishing character as

Grain: Shape in profile view: Circular.

Stigma: Yellow colouration: Presnt.

Panicle: Length without peduncle: Medium.

C. Reference variety:

RS 29 has distinguishing character as **Grain: Shape in profile view: Elliptic.**

RS 673 have distinguishing characters as **Stigma: Yellow colouration: Absent.**

Panicle: Length without peduncle: Long.

D. Date of commercialization of the variety	5/11/2004

02. Application No. | **E31** | **SB55** | **09** | **475** | Filed on **03.11.2009** by **Nuziveedu Seeds Pvt. Limited, Sy. No. 69, Gundlapochampally (Vill.), Medchal-Mandal, Ranga Reddy District- 501401, Andhra Pradesh, India** for an **Extant** (Variety of Common Knowledge) of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **NS-509 A,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- --- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA---- ---, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **NS-509 A**

Applicant : Nuziveedu Seeds Pvt. Limited

Address of the Applicant : Sy. No. 69, Gundlapochampally (Vill.),
Medchal-Mandal, Ranga Reddy District-501401
Andhra Pradesh, India

Nationality of Applicant : Indian

Application details

a. Number : | **E31** | **SB55** | **09** | **475** |

b. Date of receipt : 03.11.2009

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : NS-509 A

Type of Variety : Extant (Variety of Common Knowledge)

Classification of Variety : OTHER (Parental line)

Previously proposed : Not applicable

Denomination

Name of Parental Material : 296A(Cytoplasm donar) X NS 509B

Name of Reference Varieties : MS 27A, 296A

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: total height	Medium
Panicle: shape	Symmetric
Caryopsis : color after threshing	White

B. Distinct Characteristics: NS-501A has distinguishing character as

Lemma Arista formation: Absent.

Stigma: Yellow colouration: Present.

Panicle: Length without peduncle: Medium.

C. Reference varieties:

MS 27A has distinguishing character as

Lemma Arista formation: Present.

Panicle: Length without peduncle: Long.

296A has distinguishing character as

Lemma Arista formation: Present.

Stigma: Yellow colouration: Absent.

Panicle: Length without peduncle: Long.

D. Date of commercialization of the variety	19.08.1997

03. Application No. | **E32** | **SB56** | **09** | **476** | filed on **03.11.2009** by **Nuziveedu Seeds Pvt. Limited, Sy. No. 69, Gundlapochampally (Vill.), Medchal-Mandal, Ranga Reddy District- 501401, Andhra Pradesh, India** for an **Extant** (Variety of Common Knowledge) of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **NS-444R,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- --- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **NS-444R**

Applicant : Nuziveedu Seeds Pvt. Limited

Address of the Applicant : Sy. No. 69, Gundlapochampally (Vill.),
Medchal-Mandal, Ranga Reddy District-501401
Andhra Pradesh, India

Nationality of Applicant : Indian

Application details

a. Number : | **E32** | **SB56** | **09** | **476** |

b. Date of receipt : 03.11.2009

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : NS-444R

Type of Variety : Extant (Variety of Common Knowledge)

Classification of Variety : OTHER (Parental line)

Previously proposed Denomination : Not applicable

Name of Parental Material : NSGP 118 X NSGP 92)-52-14-3-2-1

Name of Reference Varieties : CSV 14R, C 43

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: Total height	Medium
Panicle: Shape	Symmetric
Caryopsis : Color after threshing	White
B. Distinct Characteristics: NS-444R has distinguishing character as Lemma Arista formation: Absent.	

C. Reference variety: CSV 14R has distinguishing character as Lemma Arista formation: Present.

D. Date of commercialization of the variety	2004

04. Application No. | **N1** | **RC1** | **012** | **215** | filed on **20.06.2012** by **The Project Director, Directorate of Oilseeds Research, Rajendranagar, Hyderabad-500030 (AP)** on behalf of **Indian Council of Agricultural Research (ICAR), Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-110001** for a **New Variety** of crop **Castor** [*Ricinus communis* L.] having denomination **DCS-107,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number --------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **DCS-107**

Applicant : Indian Council of Agricultural Research (ICAR)

Address of the Applicant : Krishi Bhawan, Dr. Rajendra Prasad Road,
New Delhi-110001

Nationality of Applicant : Indian

Application details

a. Number : | **N1** | **RC1** | **012** | **215** |

b. Date of receipt : 20.06.2012

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Castor [*Ricinus communis* L.]

Denomination : DCS-107

Type of Variety : New Variety

Classification of Variety : Typical Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : DCH 177 X JI 133

Name of Reference Varieties : HARITHA, VI-9

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Leaf: Waxi bloom on upper side	Absent
Leaf: Waxi bloom on lower side	Present
Stem: Waxi bloom	Present
Stem: Colour (after removal of bloom)	Green
Stem: Number of nodes on main stem	High
Capsule: Spininess	Dense

B. Distinct Characteristics: DCS-107 has distinguishing character as

Seed:Weight of 100 seeds (g): **High.**

Seed: Shape: **Elongated.**

Seed: Coat colour: **Dark brown.**

C. Reference variety: Hartiha has distinguishing character as

Seed:Weight of 100 seeds (g): **Medium.**

Seed: Shape: **Oval.**

Seed: Coat colour: **Light brown**

D. Date of commercialization of the variety	----

05. Application No. | **E9** | **OS27** | **12** | **187** | filed on **04.06.2012** by **Pioneer Overseas Corporation Indian Branch Corporate Office, 3rd & 4th floor, Babukhans's Millennium Centre, 6-3-1099/1100,Raj bhawan road,Somajiguda, Hyderabad-500 082, A.P., India** for a **Extant Variety** of crop **Rice** [*Oryza sativa* (L.)] having denomination **27P88,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- ------- NA -----

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **27P88**

Applicant : **Pioneer Overseas Corporation**

Address of the Applicant : **3rd & 4th floor, Babukhans's Millennium, Centre, 6-3-1099/1100, Raj bhawan road, Somajiguda, Hyderabad-500 082, A.P., India**

Nationality of Applicant : Indian

Application details

a. Number : | **E9** | **OS27** | **12** | **187** |

b. Date of receipt : **04.06.2012**

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Rice [*Oryza sativa* (L.)]

Denomination : **27P88**

Type of Variety : **Extant Variety**

Classification of Variety : Hybrid Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : R870F x R860.

Name of Reference Varieties : Hemavathi, DRR DHAN 38.

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Basal Leaf: Sheath colour	Green
Time of heading (50% of Plant with panicles)	Medium
Stem: Length (excluding panicle; excluding floating rice)	Short
Decorticated grain: Length	Long
Decorticated grain: Shape	Long slender
Decorticated grain: Colour	White
Endosperm: Content of amylase	Medium
Decorticated grain: Aroma	Absent

B. Distinct Characteristics: 27P88 has distinguishing character as

Leaf: Pubescence of blade surface: **Medium**.

Lemma: Anthocyanin colouration of apex: **Absent**.

Spikelet: Colour of stigma: **White**.

Decorticated Grain Length**: Long**

Decorticated Grain Shape : Long

C. Reference variety: Hemavathi has distinguishing character as

Leaf: Pubescence of blade surface: **Strong.**

Lemma: Anthocyanin colouration of apex: **Strong.**

Spikelet: Colour of stigma: **Purple.**

Decorticated Grain Length**: Medium**

Decorticated Grain Shape : Long Bold

D. Date of commercialization of the variety	20/05/2010

06. Application No. | **E8** | **OS26** | **12** | **186** | filed on **04.06.2012** by **Pioneer Overseas Corporation Indian Branch Corporate Office, 3rd & 4th floor, Babukhans's Millennium Centre, 6-3-1099/1100, Raj bhawan road, Somajiguda, Hyderabad-500 82, A.P., India** for a **Extant Variety** of crop **Rice** [*Oryza sativa* (L.)] having denomination **27P52,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- ------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **27P52**

Applicant : **Pioneer Overseas Corporation**

Address of the Applicant : **3rd & 4th floor, Babukhans's Millennium, Centre, 6-3-1099/1100, Raj bhawan road, Somajiguda, Hyderabad-500 082, A.P., India**

Nationality of Applicant : Indian

Application details

a. Number : | **E8** | **OS26** | **12** | **186** |

b. Date of receipt : 04.06.2012

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Rice [*Oryza sativa* (L.)]

Denomination : 27P52

Type of Variety : Extant Variety

Classification of Variety : Hybrid Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : R871F x R860.

Name of Reference Varieties : VL Dhan 81, DRR Dhan 38.

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Basal Leaf: Sheath colour	Green
Time of heading (50% of Plant with panicles)	Medium
Stem: Length (excluding panicle; excluding floating rice)	Short
Decorticated grain: Length	Long
Decorticated grain: Shape	Long bold
Decorticated grain: Colour	White
Endosperm: Content of amylase	Medium
Decorticated grain: Aroma	Absent
B. Distinct Characteristics: 27P52 has distinguishing character as Leaf: Pubescence of blade surface: **Medium**. Flag leaf: Attitude of blade (late observation):**Semi-erect**. Decorticated grain: Length: **Long**	

C. Reference variety: VL Dhan 81 has distinguishing character as Leaf: Pubescence of blade surface: **Week**. Flag leaf: Attitude of blade (late observation): **Horizontal**. Decorticated grain: Length: **Long**

D. Date of commercialization of the variety	16/05/2010

07. Application No. | **E1** | **BJ2** | **10** | **270** | filed on **09.09.2010** by **Pioneer Overseas Corporation Indian Branch Corporate Office, 3rd & 4th floor, Babukhans's Millennium Centre, 6-3-1099/1100,Raj bhawan road,Somajiguda, Hyderabad-500 82, A.P., India** for a **Extant (VCK) Variety** of crop **Indian Mustard** [*Brassica juncea* L. Czern & Coss] having denomination **44S01,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number --------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **44S01**

Applicant : **Pioneer Overseas Corporation**

Address of the Applicant : **3rd & 4th floor, Babukhans's Millennium, Centre, 6-3-1099/1100, Raj bhawan road, Somajiguda, Hyderabad-500 082, A.P., India**

Nationality of Applicant : Indian

Application details

a. Number : | **E1** | **BJ2** | **10** | **270** |

b. Date of receipt : 09.09.2010

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Indian Mustard [*Brassica juncea* L. Czern & Coss]

Denomination : 44S01

Type of Variety : Extant Variety

Classification of Variety : Hybrid Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : J10602FC x J10821MC.

Name of Reference Varieties : Varuna, GM-1.

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Leaf: Number of lobes	High
Flower: Time of flowering (50 % of the plant with at least one open flower)	Medium
Plant: Main shoot length(cm)	Very long
Siliqua: Number of seeds per siliqua	Medium
Seed: Size (Weight of 1000 seeds)	Small
B. Distinct Characteristics: 44S01 has distinguishing character as Siliqua: Number of seeds per siliqua: **Medium.** Seed: Size (Weight of 1000 seeds): **Small**	

C. Reference variety: Varuna, GM-1 have distinguishing characters as Siliqua: Number of seeds per siliqua: **Few.** Seed: Size (Weight of 1000 seeds): **Medium**

D. Date of commercialization of the variety	23/09/2008

08. Application No. | **N6** | **SB10** | **09** | **244** | filed on **11.05.2009, Nuziveedu Seeds Pvt. Limited, Sy. No. 69, Gundlapochampally (Vill.), Medchal-Mandal, Ranga Reddy District- 501401, Andhra Pradesh, India** for a **New Variety** of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **NRJ-01,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **NRJ-01**

Applicant : Nuziveedu Seeds Pvt. Limited

Address of the Applicant : Sy. No. 69, Gundlapochampally (Vill.),
Medchal-Mandal, Ranga Reddy District-501401
Andhra Pradesh, India

Nationality of Applicant : Indian

Application details

a. Number : | **N6** | **SB10** | **09** | **244** |

b. Date of receipt : 11.05.2009

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : NRJ-01

Type of Variety : New Variety

Classification of Variety : Typical Variety

Previously proposed : Not applicable

Denomination

Name of Parental Material : NS-259R x NS-265R

Name of Reference Varieties : M 35-1, CSV 14R

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: total height	Long
Panicle: shape	Symmetric
Caryopsis : color after threshing	Yellow white
B. Distinct Characteristics: NRJ-01 has distinguishing character as Stigma: Anthocyanin colouration: **Absent.**	

C. Reference variety: M 35-1 & CSV 14R has distinguishing character as Stigma: Anthocyanin colouration: **Present**.

D. Date of commercialization of the variety	--27-10-2009

09. Application No. | **N7** | **SB11** | **09** | **245** | filed on **11.05.2009** by **Nuziveedu Seeds Pvt. Limited, Sy. No. 69, Gundlapochampally (Vill.), Medchal-Mandal, Ranga Reddy District- 501401, Andhra Pradesh, India** for a **New Variety** of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **NRJ-02,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **NRJ-02**

Applicant : Nuziveedu Seeds Pvt. Limited

Address of the Applicant : Sy. No. 69, Gundlapochampally (Vill.),
Medchal-Mandal, Ranga Reddy District-501401
Andhra Pradesh, India

Nationality of Applicant : Indian

Application details

a. Number : | **N7** | **SB11** | **09** | **245** |

b. Date of receipt : 11.05.2009

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : NRJ-02

Type of Variety : New Variety

Classification of Variety : Typical Variety

Previously proposed : Not applicable

Denomination

Name of Parental Material : NSGP-258 x NSGP-414

Name of Reference Varieties : M 35-1, CSV 14R

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: total height	Medium
Panicle: shape	Symmetric
Caryopsis : color after threshing	White
B. Distinct Characteristics: NRJ-02 has distinguishing character as Stigma: Anthocyanin colouration: **Absent.**	

C. Reference variety: M 35-1 & CSV 14R has distinguishing character as Stigma: Anthocyanin colouration: **Present**.

D. Date of commercialization of the variety	--

10. Application No. | **N13** | **SB13** | **10** | **146** | filed on **03.06.2010** by M/S **Kaveri Seed Company Limited, #513-B, 5th Floor, Minerva Complex, S.D. Road, Secunderabad, 500003, A.P.** for a **New Variety** of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **KSR 6176,** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **KSR 6176**

Applicant : Kaveri Seed Company Limited

Address of the Applicant : #513-B, 5th Floor, Minerva Complex,
S.D. Road, Secunderabad, 500003,
A.P.

Nationality of Applicant : Indian

Application details

a. Number : | **N13** | **SB13** | **10** | **146** |

b. Date of receipt : 03.06.2010

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : KSR 6176

Type of Variety : New Variety

Classification of Variety : Typical Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : **S**elfing and sib matting from own germplasm.

Name of Reference Varieties : C 43, Indore 12

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Medium
Plant: total height	Medium
Panicle: shape	Broader in upper part
Caryopsis : color after threshing	Yellow orange
B. Distinct Characteristics: KSR 6176 has distinguishing character as Stigma: Anthocyanin colouration: **Absent.**	

C. Reference variety: C43 has distinguishing character as Stigma: Anthocyanin colouration: **Present**.

D. Date of commercialization of the variety	--

11. Application No. | **E3** | **SB6** | **11** | **254** | filed on **27.05.2011** by **The Director & Project Coordinator, Acharya N.G. Ranga Agricultural University, Rajendranagar, Hyderabad-500030 (AP)** on behalf of **N.G. Ranga Agricultural University, Rajendranagar, Hyderabad-500030 (AP)** for a **Extant** (Variety of Common Knowledge) of crop **Sorghum** [*Sorghum bicolor* (L.) Moench] having denomination **NTJ 4 (NJ 2401),** the specification includes its drawing and or photograph(s) of which are given below, has been accepted and given registration number ---------NA ----------on ---------- NA --------.

The convention application no. -----NA-----, in respect of the said variety has been filed on -----NA-----, in ---NA----.

Appropriate office for the opposition of proceeding under Rule 29, of the Protection of Plant Varieties and Farmers' Rights Rules, 2003 is **Office of the Registrar, PPV & FR Authority, New Delhi – 110 012.**

Passport data of the variety : **NTJ 4 (NJ 2401)**

Applicant : Acharya, N.G. Ranga Agricultural University

Address of the Applicant : Rajendranagar, Hyderabad-500030
(AP)

Nationality of Applicant : Indian

Application details

a. Number : | **E3** | **SB6** | **11** | **254** |

b. Date of receipt : 27.05.2011

c. Date of acceptance : --

Crop (Taxonomical Lineage) : Sorghum [*Sorghum bicolor* (L.) Moench]

Denomination : NTJ 4 (NJ 2401)

Type of Variety : Extant (Variety of Common Knowledge)

Classification of Variety : Typical Variety

Previously proposed Denomination : Not applicable

Name of Parental Material : NTJ 1 x CMS 3

Name of Reference Varieties : CSV 14R, CSV 18R

Variety Description:

A. Group Characteristics	**Remarks measured values, example varieties, etc.**
Plant: Time of panicle emergence (50% of the plants with 50% anthesis)	Early
Plant: total height	Medium
Panicle: shape	Symmetric
Caryopsis : color after threshing	Yellow white
B. Distinct Characteristics: NTJ 4 (NJ 2401) has distinguishing character as Leaf sheath: Anthocyanin colouration: **Yellow green.** Lemma: Arista formation: Absent.	

C. Reference variety: CSV 14R & CSV 18R have distinguishing character as Leaf sheath: Anthocyanin colouration: **Grayed purple.** Lemma: Arista formation: **Present.**

D. Date of commercialization of the variety	24.07.2002