



सत्यमेव जयते

भारत सरकार  
GOVERNMENT OF INDIA

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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 जर्नल, खण्ड 05, अंक 10  
अक्टूबर 03, 2011 / अश्विन-शुक्ल 07, शक् 1932

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‘भारतीय पौधा किस्म जर्नल’ पौधा किस्म और कृषक अधिकार संरक्षण प्राधिकरण (पौ.कि.कृ.अ.सं.प्रा.) का आधिकारिक जर्नल है। पीपीवी और एफआर अधिनियम, 2001 तथा पीपीवी और एफआर नियमावली, 2003 के नियम 2 (जी) के अंतर्गत अध्यक्ष, पीपीवी और एफआर, एनएएससी काम्प्लेक्स (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 (II<sup>nd</sup> 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.

## PUBLIC NOTICE

**Sub: Notice for registration of extant varieties under Section 15 (2) of PPV&FR Act, 2001 read with Rule 24 of PPV & FE Rules, 2003.**

The Central Government in exercise of its powers under Section 29 (2) of PPV & FR Act, 2001 notified vide S.O. 1913 (E) dated 18<sup>th</sup> August, 2011 the following crops with their genera and species which are eligible for registration as new varieties.

S. No.	Common Name	Hindi/Local Name	Botanical Name
1.	<i>Triticum durum</i> Desf.	Gehun	Wheat
2.	<i>Triticum dicoccum</i> L.		
3.	<i>Triticum</i> species (other than <i>Triticum aestivum</i> L., <i>Triticum durum</i> Desf. and <i>Triticum dicoccum</i> L.)		
4.	<i>Cocos nucifera</i> L.	Nariyal	Coconut
5.	<i>Catharanthus roseus</i> (L.) G. Don	Sadabahar	Periwinkle
6.	<i>Bacopa monnieri</i> (L.) Pennell	Brahmi	Indian pennywort
7.	<i>Rosa damascena</i> Mill.	Gulab	Rose
8.	<i>Plantago ovata</i> Forsk.	Isabgol	Blond Psyllium
9.	<i>Mentha arvensis</i> L.	Pudina	Menthol Mint

Accordingly, this public notice is issued under Rule 24 of PPV & FR Rules, 2003 inviting applications for registration of extant varieties in the above-said crops / crop species with their genera and species. It is also hereby brought to notice that the applications for registration of extant varieties in the above – said crops / crop species should be filed within a period of three years from the date of notification of the above said crops / crop species in the gazette namely 18<sup>th</sup> August, 2011 and in case of applications for registration of farmers' varieties in the above-said crops / crop species the same should be filed within a period of five years from the date of notification of the above said crops / crop species in the gazette namely 18<sup>th</sup> August, 2011.

## **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 specific DUS test guideline for three species of Orchid namely *Cymbidium* Sw., *Dendrobium* Sw. and *Vanda* Jones ex R.Br. is hereby published in 'Plant Variety Journal of India', Vol. 05, No. 06, June 01, 2011. Interested parties may read these guidelines and act accordingly.

## **Orchid (*Cymbidium* Sw.)**

### **I. Subject**

These Test Guidelines apply to all vegetatively propagated varieties of *Cymbidium* Sw. of the family Orchidaceae.

### **II. Plant material 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 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 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.
2. For all varieties, only 3 to 4 years old 20 plants (10 for each Centre) with at least two pseudobulbs and one back-bulb shall be required for DUS testing.
3. The plant material supplied should be visibly healthy, not lacking in vigour or affected by any pests or diseases or mechanical damage.
4. Plant material shall not have undergone any chemical or bio-physical treatment unless the competent authority allow or request such treatment. If it has been treated, details of the treatment must be given.

### **III. Conduct of tests**

1. A test should normally be conducted for two growing seasons.
2. Tests should normally be conducted at two places. If any essential characteristics of the variety are not expressed for visual observations at these places, 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 tests should be carried out in the greenhouse under conditions ensuring normal growth for the plant concerned. The size of the pots/ containers should be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the growing period. Each test should include a total of 10 plants.

4. Test should be done only in pots of prescribed size. The pots should be kept at a standard spacing recommended for each type or at the spacing specified by the applicant.
5. Additional tests for special purposes may be established.
6. Normally growth regulators should not be used.

#### **IV. Methods and observations**

1. The characteristics described in the Table of characteristics (section VII) shall be used for the testing of varieties for their DUS.
2. For the assessment of Distinctiveness and Stability, all observations shall be made on 10 plants or parts taken from each of 10 plants.
3. For the assessment of Uniformity, 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, the maximum number of off-types allowed would be 1.
4. All observations of on the pseudobulbs shall be made on the flowering pseudobulb.
5. All observations on the leaf shall be made on the longest leaf of a flowering pseudobulb.
6. All observations on the inflorescence and the flower shall be made at the time when 50% of the flowers on the inflorescence have opened and on the most recently fully opened flower on the inflorescence before fading of colour.
7. All observations on the length and width of the flower and parts of the flower shall be made in the spread out positions.
8. All observations on the colour of sepal, petal, lip and column shall be made both on the inner and outer sides.
9. For the assessment of colour characteristics, the Royal Horticultural Society (RHS) colour chart shall be used.

#### **V. Grouping of varieties**

1. The candidate varieties for DUS test shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics which are known from experience not to vary or to vary 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. The following characteristics shall be used for grouping of Cymbidium varieties:
  - a) Pseudobulb: shape (Characteristic 2)
  - b) Inflorescence: length (Characteristic 12 or 13)

- c) Inflorescence: number of flowers (Characteristic 16)
- d) Flower: length (Characteristic 20 or 21)
- e) Flower: width (Characteristic 22 or 23)
- f) Flower: predominant colour (Characteristic 27)
- g) Lip: colour pattern inside (Characteristic 56)
- h) Flowering: season (Characteristic 62)

## **VI. Characteristics and Symbols**

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

### 3. Legend

(\*): Characteristics that shall be observed during every growing season for all varieties and hybrids shall always be included in the description of the varieties and hybrids, 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.

(+) See explanations on the Table of characteristics

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. **(a)-(e):** see Section VIII for explanation
6. Type of assessment of characteristics indicated in column six of the Table of characteristics are 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

S. No.	Characteristics	States	Notes	Example Varieties /hybrids	Type of Assessment
1. * QN (a)	Pseudobulb size (length x breadth)	Small ( $<30 \text{ cm}^2$ )	1	Cym. 'Velvet Green', Cym. 'Red Star', Cym. 'Show Girl', Cym. Bob Marlin 'Lucky', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	MS
		Medium ( $30-60 \text{ cm}^2$ )	3	Cym. 'Red Beauty', Cym. 'Fire Storm', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King'	
		Large ( $>60 \text{ cm}^2$ )	5	Cym. 'Penneshow Winter Flush', Cym. San Francisco 'Monalisa', Cym. 'Miss Sanders'	
2. * PQ (a) (+)	Pseudobulb shape in longitudinal section	Narrow cylindrical	1	--	VG
		Round	3	Cym. 'Lucky Rainbow'	
		Ovoid	5	Cym. 'Soul Hunt', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'Show Girl', Cym. 'Sleeping Nymph'	
		Conical	7	Cymb. 'Luna Pink'	
3. * QN (a)	Number of leaves on flowering pseudobulb	Few ( $<3$ )	1	--	VS
		Medium (3-6)	3	--	
		Many ( $>6$ )	5	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Red Star', Cym. 'Show Girl', Cym. 'Sleeping Nymph'	
4.	Leaf length	Short	1	--	VS

* QN (a)		(<40 cm)			
		Medium (40-80 cm)	3	Cym. 'Tracey Reddaway', Cym. 'Soul Hunt', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
		Long (>80 cm)	5	Cym. 'H.C. Aurora', Cym. 'Angelica December Gold', Cym. San Francisco 'Monalisa', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King'	
5. QN (a)	Leaf width	Narrow (<1.5 cm)	1	--	VS
		Medium (1.5-3.0 cm)	3	Cym. 'Soul Hunt', Cym. 'Ammesbury', Cym. 'H.C. Aurora', Cym. 'Tracey Reddaway', Cym. 'Hawtescens', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous', Cym. 'Show Girl'	
		Broad (>3.0 cm)	5	Cym. 'Fire Storm', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
6.* (+) PQ (a)	Leaf shape	Linear	1	Cym. 'Yankilla', Cym. 'Soul Hunt', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	VG
		Linear- oblong	3	Cym. 'Lucky Rain Bow', Cym. 'Sainte Lapine'	
		Lanceolat e	5	Cym. 'Stanley Fouraker White Magic'	
7. PQ (a)	Leaf petiole	Absent	1	Cym. 'Yankilla', Cym. 'Soul Hunt', Cym. 'Fire Storm'	VG

		Present	9	--	
8. (+) PQ (a)	Leaf apex shape	Acute	1	Cym. 'Ammesbury', Cym. 'H.C. Aurora', Cym. 'Tracey Reddaway', Cym. 'Hawtescens', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	VG
		Obtuse	3	--	
		Bi-lobed	5	Cym. 'Soul Hunt'	
9. QN (b)	No. of flower spike / pseudobulb	One	1	Cym. 'Tracey Reddaway', Cym. 'Canon Color', Cym. 'Hawtescens', Cym. 'Jungfrau Snow Queen', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous'	MS
		Two	3	Cym. 'Sleeping Nymph'	
		> Two	5	Cym. 'H.C. Aurora'	
10. PQ (b)	Inflorescence orientation	Erect	1	Cym. 'H.C. Aurora', Cym. 'Ammesbury', Cym. 'Red Imperial Red Tower', Cym. 'Hawtescens', Cym. 'Jungfrau Snow Queen', Cym. 'Sleeping Nymph'	VG
		Horizontal / Arching	3	Cym. 'Yankilla', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	
		Drooping / Pendulus	5	--	
11. PQ (b)	Inflorescence type	Dense	1	Cym. 'Winter Beach Sea Green', Cym. 'Sleeping Nymph'	VG
		Lax (Sparsely arranged)	3	Cym. 'Hawtescens', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky',	

				Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Red Star'	
12. * QN (b)	Inflorescence length of Standard type	Short (<75 cm)	1	Cym. 'Soul Hunt', Cym. 'Stanley Fouraker White Magic' Cym. 'Yankilla', Cym. 'Ammesbury', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	MS
		Medium (75-90 cm)	3	Cym. 'Hawtescens', Cym. 'Winter Beach Sea Green'	
		Long (>90cm)	5	Cym. 'Red Star', Cym. 'Madrid Forest King'	
13. QN (b)	Inflorescence length of Miniature type	Short (<30 cm)	1	--	MS
		Medium (30-60 cm)	3	Cym. 'Sun Gold'	
		Long (>60 cm)	5	--	
14. QN (b)	Peduncle length	Short (<30 cm)	1	Cym. 'Yankilla', Cym. 'Pine Clash Moon Venus', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Sleeping Nymph'	MS
		Medium (30-60 cm)		Cym. 'Soul Hunt', Cym. 'H.C. Aurora', Cym. 'Fire Storm', Cym. 'W.W. Wondrous'	
		Long (>60 cm)	3	Cym. 'Madrid Forest King', Cym. 'Baltic Glaciers Mint Ice'	
15. QN (b)	Peduncle diameter	Thin (<0.5 cm)	1	Cym. Bob Marlin 'Lucky'	MS
		Medium (0.5-0.8 cm)	3	Cym. 'Soul Hunt', Cym. 'Show Girl', Cym. Tracey Reddaway', Cym. 'Fire Storm', Cym. 'Winter Beach Sea	

				Green',	
		Thick (>0.8 cm)	5	Cym. 'Yankilla', Cym. 'Red Star', Cym. 'H.C. Aurora', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous' Cym. 'Sleeping Nymph'	
16. * QN (b)	Number of flowers per inflorescence	<12	1	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	VS
		12-20	3	Cym. 'Madrid Forest King', Cym. 'Red Star'	
		>20	5	--	
17. QL (b)	Anthocyanin colouration in peduncle	Absent	1	Cym. 'Yankilla', Cym. 'Amesbury', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	VG
		Present	9	Cym 'Soul Hunt', Cym. 'H.C. Aurora', Cym. 'Red Imperial Red Tower', Cym. 'Tracey Reddaway', Cym. 'Fire Storm', Cym. 'Sleeping Nymph'	
18. PQ (b)	Peduncle bract	Absent	1	--	VG
		Present	9	Cym 'Soul Hunt', Cym. 'H.C. Aurora', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
19. QN (b)	No. of inflorescences / plant	Few (<5)	1	Cym. 'W.W. Wondrous', Cym. 'Ensikhan', Cym. 'Soul Hunt', Cym. 'Pine Clash Moon Venus', Cym. 'Sleeping Nymph'	VS

		Medium (5-10)	3	Cym. 'H.C. Aurora', Cym. 'Forest King', Cym. 'Yankilla', Cym. 'Hawtescens', Cym. 'Margaret Thatcher'	
		Many (>10)	5	Cym. 'Sungold', Cym. 'Baltic Glaciers Mint Ice'	
20. * QN (c)	Flower length of Standard type (Tip of dorsal sepal to tip of lip)	Short (<4.0cm)	1	Cym. 'Show Girl', Cym. 'Canon Color',	MS
		Medium (4.0-8.0cm)	3	Cym. 'Soul Hunt', Cym. 'Yankilla', Cym. 'Hawtescens', Cym. 'Takarjoke', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
		Long (>8.0cm)	5	Cym. 'H.C. Aurora', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous'	
21. * QN (c)	Flower length of miniature type (Tip of dorsal sepal to tip of lip)	Short (<2 cm)	1	--	MS
		Medium (2 cm - 4 cm)	3	--	
		Long (>4 cm)	5	Cym. 'Sun Gold'	
22. * QN (c)	Flower width of standard type (Tip distance of two lateral petals) Standard	Narrow (<4 cm)	1	--	MS
		Medium (4-8 cm)	3	Cym. 'Soul Hunt', Cym. 'Yankilla', Cym. 'Show Girl', Cym. 'Amesbury', Cym. 'Velvet Green', Cym. 'Takarjoke', Cym. 'Sleeping Nymph'	
		Broad (>8 cm)	5	Cym. 'H.C. Aurora' Cym. Tracey Reddaway', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King',	

				Cym. 'W.W. Wondrous'	
23. * QN (c)	Flower width of miniature type (Tip distance of two lateral petals)	Narrow (<2 cm)	1	--	MS
		Medium (2 cm - 4 cm)	3	--	
		Broad (>4 cm)	5	Cym. 'Sun Gold'	
24. QL (b)	Flower fragrance	Absent	1	Cym. 'Yankilla', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous'	MG
		Present	9	Cym. 'Ammesbury', Cym. 'H.C. Aurora', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
25. * QN (b)	Flower longevity on the plant	Short (<20 days)	1	--	VG
		Medium (20-40 days)	3	Cym. 'Red Star'	
		Long (> 40 days)	5	Cym. 'H.C. Aurora', Cym. 'Yankilla', Cym. 'Amesbury', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
26. PQ (b)	Flower orientation on inflorescence	Facing one side	1	Cym. 'Fire Storm', Cym. 'W.W. Wonders', Cym. 'Madrid Forest King', Cym. 'Winter Beach Sea Green'	VG
		Facing all directions	3	Cym. 'H.C. Aurora', Cym. 'Jungfrau Dos Pueblos', Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Red Star', Cym. 'Sleeping Nymph'	
27.	Flower	White	1	Cym. 'Takarjoke',	VG

QL (b)	predominant colour			Cym. 'W.W. Wondrous'	
		Pink	2	--	
		Yellow	3	Cym. 'Angelica December Gold', Cym. 'Hawtescens',	
		Green	4	Cym. 'Yankilla', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King'	
		Red	5	Cym. 'Soul Hunt', Cym. 'Miss Sanders', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky'	
		Brown	6	Cym. 'Tracey Reddaway'	
		Maroon	7	Cym. 'Show Girl', Cym. 'Ammesbury'	
28. QN (c)	Dorsal sepal size (length x breadth)	Small (<6 cm <sup>2</sup> )	1	--	MG
		Medium (6 cm <sup>2</sup> – 24cm <sup>2</sup> )	3	Cym. 'Soul Hunt', Cym. 'Yankilla', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Red Star'	
		Large (>24 cm <sup>2</sup> )	5	Cym. 'H.C. Aurora', Cym. Jungfrau Dos Pueblos', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
29. (+) PQ (c)	Dorsal sepal shape	Linear	1	Cym. 'Yankilla'	VG
		Oblong	3	Cym. 'Ammesbury', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
		Elliptic	5	Cym. 'Red Star', Cym. 'H.C. Aurora', Cym. Bob Marlin 'Lucky'	
		Obovate	7	Cym. 'Soul Hunt', Cym. 'Miss Sanders', Cym. 'W.W. Wondrous'	
30. (+) PQ (c)	Dorsal sepal curvature	Incurved with deflexed apex	1	Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	VG



		Incurved with straight apex	3	Cym. 'Soul Hunt', Cym. 'Yankilla', Cym. 'Ammebury', Cym. H.C. Aurora, Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Sleeping Nymph'	
		Straight	5	Cym. 'Miss Sanders'	
		Deflexed	7	--	
31. (+) PQ (c)	Dorsal sepal apex	Acute	1	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	VG
		Obtuse	3	Cym. 'H.C. Aurora', Cym. 'Ammebury'	
		Premorse	5	--	
		Bilobed	7	Cym. 'Show Girl'	
32. QN (c)	Lateral sepal size (length x breadth)	Small (<6 cm <sup>2</sup> )	1	Cym. 'Yankilla'	MG
		Medium (6 – 24 cm <sup>2</sup> )	3	Cym. 'Red Star', Cym. 'Angelica December Gold', Cym. 'Fire Storm', Cym. 'Winter Beach Sea Green'	
		Large (>24 cm <sup>2</sup> )	5	Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
33. (+) PQ (c)	Lateral sepal shape	Linear	1	Cym. 'Yankilla'	VG
		Oblong	3	Cym. 'Ammebury', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
		Elliptic	5	Cym. 'Nonina Pale Face', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Show Girl'	
		Obovate	7	Cym. 'Soul Hunt', Cym. 'W.W. Wondrous'	

34. (+) PQ (c)	Lateral sepal curvature	Incurved with deflexed apex	1	Cym. 'Fire Storm', Cym. 'Red Star'	VG
		Incurved with straight apex	3	Cym. 'Ammesbury', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
		Straight	5	Cym 'Yankilla', Cym. 'Miss Sanders'	
		Deflexed	7	Cym. 'Soul Hunt', Cym. 'H.C. Aurora',	
35. (+) PQ (c)	Lateral sepal apex	Acute	1	Cym. 'Tracey Reddaway', Cym. 'Fire Storm', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	VG
		Obtuse	3	Cym. 'Yankilla', Cym. 'Show Girl', Cym. 'Ammesbury', Cym. 'H.C. Aurora', Cym. 'Hawtescens'	
		Premorse	5	--	
		Bilobed	7	--	
36. QL (d)	Sepals colour pattern	Uniform	1	Cym. 'Sparkle Late Green (Green)', Cym. 'Madrid Forest King'(Green), Cym. 'Levis Duke Bella Vista (Green), Cym. 'Yankilla'(Green)	VG
				Cym. Jungfrau 'Dos Pueblos'(White), Cym. 'Jungfrau Show Queen', (White)	
				Cym. Tracey Reddaway', (Yellow)	
				Cym. 'Red Imperial Red Tower'(Red), Cym. 'Soul Hunt'(Red), Cym. 'Miss Sanders'(Red)	

				Cym. 'Ammesbury'(Brown)
				Cym. 'Canon Color'(Purple), Cym. 'Norelia Jennifer' '(Purple), Cym. 'Bob Marlin Lucky'(Purple)
		Spotted	3	Cym. 'H.C. Aurora', (Green)
				Cym. 'W.W. Wondrous'(White)
				Cym. 'Soul Hunt'(Red), Cym. 'Red Star'(Red), Cym. 'Red Imperial Red Tower'(Red), Cym. 'Miss Sanders'(Red), Cym. 'Show Girl'(Red)
				Cym. 'Show Girl'(Maroon), Cym. 'Ammesbury'(Maroon), Cym. 'Jungfrau Snow Queen'(Maroon), Cym. 'Angelica December Gold'(Maroon), Cym. 'Hawtescens'(Maroon)
				Cym. Penneshaw Winter Flush'(Pink),
				Cym. 'Bob Marlin 'Lucky'(Purple), Cym. 'Winter Beach Sea Green'(Purple)
		Blotched	5	--
		Streak/stri ped	7	Cym 'Soul Hunt', (Red brown)
				Cym. 'Red Star'(Red), Cym. Miss Sanders'(Red), Cym. 'Madrid Forest King'(Red)
				Cym. 'Ammesbury'(Maroon), Cym. 'H.C. Aurora'(Maroon), Cym. 'Velvet Green'(Maroon)
				Cym. 'Fire Storm'(Purple), Cym. Bob Marlin 'Lucky'(Purple), Cym. 'Firestorm'(Purple), Cym. 'Madrid Forest King'(Purple), Cym. 'Sleeping Nymph' (Purple)

				Cym. 'Penneshaw Winter Flush'(Pink)	
				Cym. 'Takarjoke'(Yellow)	
				Cym. 'Winter Beach Sea Green'(Green)	
		Mottled	9	--	
37. QN (c)	Petal size (length x breadth)	Small (<6cm <sup>2</sup> )	1	Cym. 'Canon Color' ,	MG
		Medium (6-24cm <sup>2</sup> )	3	Cym. 'Yankilla', Cym. 'H.C. Aurora', Cym. 'Fire Storm', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'Red Star', Cym. 'Show Girl'	
		Large (>24cm <sup>2</sup> )	5	Cym. 'Jungfrau Dos Pueblos', Cym. Bob Marlin 'Lucky', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
38. (+)* PQ (c)	Petal shape	Linear	1	Cym. 'Yankilla', Cym. 'Red Star'	VG
		Oblong	3	--	
		Elliptic	5	Cym. 'Ammesbury', Cym. 'Tracey Reddaway', Cym. 'Fire Storm'	
		Lanceolate	7	Cym. 'Madrid Forest King', Cym. 'Red Star'	
		Obovate	9	Cym. 'Soul Hunt', Cym. 'H. C. Aurora', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
39. (+) PQ (c)	Petal curvature	Incurved with deflexed apex	1	--	VG
		Incurved with straight apex	3	Cym. 'Ammesbury', Cym. 'Yankilla', Cym. 'Sleeping Nymph'	
		Straight	5	Cym. 'Red Beauty', Cym. 'H.C. Aurora',	

				Cym. 'Hawtescens',	
		Deflexed	7	Cym. 'Yankilla', Cym. 'Soul Hunt', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous',	
		Deflexed with incurved apex	9	Cym. 'Winter Beach Sea Green'	
40. (+) PQ (c)	Petal apex	Acute	1	Cym. 'Ammesbury', Cym. 'Tracey Reddaway', Cym. 'Fire Storm', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	VG
		Obtuse	3	Cym. 'Yankilla', Cym. 'Soul Hunt', Cym. 'H.C. Aurora', Cym. 'Velvet Green', Cym. Bob Marlin 'Lucky', Cym. 'Show Girl'	
		Premorse	5	Cym. Stanley Fouraker White Magic'	
		Bilobed	7	--	
41. (+) PQ (c)	Petal margin	Entire	1	Cym. 'Fire Storm', Cym. 'Sleeping Nymph'	VG
		undulate	3	Cym. 'Soul Hunt', Cym. 'H. C. Aurora', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Red Star',	
		Erose	5	--	
42. QL (d)	Petal colour (No.) inside	Single	1	Cym. 'Pine Clash Moon Venus' (yellow), Cym. 'Sun Gold' (yellow), Cym. 'Winter Beach Sea Green'(yellow green), Cym. 'Madrid Forest King' (yellow green),	VG

				Cym. 'Yankilla (yellow green), Cym. 'Sleeping Nymph'(grey yellow)	
		Double	3	Cym. 'W.W. Wondrous' (white, red purple), Cym. 'H.C. Aurora'(yellow, red purple)	
		Triple or more	5	Cym. 'Fire Storm'(red purple, yellow & white), Cym. Bob Marlin 'Lucky'(red purple, red & white)	
43. QL (d)	Petal colour (No.) outside	Single	1	Cym. 'Pine Clash Moon Venus' (yellow), Cym. 'Sun Gold' (yellow), Cym. 'Winter Beach Sea Green'(yellow green), Cym. 'Madrid Forest King' (yellow green), Cym. 'Yankilla (yellow green), Cym. 'Sleeping Nymph'(grey yellow)	VG
		Double	3	Cym. 'W.W. Wondrous' (white, red purple), Cym. 'H.C. Aurora'(yellow, red purple)	
		Triple or more	5	Cym. 'Fire Storm'(red purple, yellow & white), Cym. Bob Marlin 'Lucky'(red purple, red & white)	
44. QL (d)	Petal colour pattern inside	Absent	1	Cym. 'Sun Gold'	VG
		Spotted	3	Cym. 'Jungfrau Dos Pueblos' (red purple), Cym. 'Winter Beach Sea Green' (yellow green), Cym. 'W.W. Wondrous' (red purple), Cym. 'Red Star'(red purple), Cym. 'Show Girl' (red purple), Cym. 'H.C. Aurora'(red purple)	
		Blotched	5	--	
		Streaked/S	7	Cym. 'Takarjoke'(yellow	

		triped		green), Cym. 'Winter Beach Sea Green'(yellow green), Cym. 'Madrid Forest King' (red purple), Cym. 'Yankilla' (green), Cym. 'Sleeping Nymph'(grey purple)	
45. QL (d)	Petal colour pattern outside	Absent	1	Cym. 'Jungfrau Dos Pueblos, Cym. 'Show Girl'	VG
		Spotted	3	Cym. 'W.W. Wondrous'(red purple)	
		Blotched	5	--	
		Streaked/S triped	7	Cym. 'Takarjoke' (yellow green), Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green' (yellow green), Cym. 'Madrid Forest King'(red purple), Cym. 'H.C. Aurora'(red purple), Cym. 'Yankilla'(green), Cym. 'Sleeping Nymph'(grey purple)	
46. QN (c)	Lip length (Spread out)	Short (< 3cm)	1	--	MG
		Medium (3cm-5cm)	3	Cym. 'Soul Hunt', Cym. 'Sungold', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	
		Long (>5cm)	5	Cym. 'Baltic Glaciers Mint Ice', Cym. 'H.C. Aurora', Cym. 'Pine Clash Moon Venus', Cym. 'Sleeping Nymph'	
47. QN	Lip width (spread out)	Narrow (<3cm)	1	--	MG

(c)		Medium (3cm-5cm)	3	Cym. 'Yankilla', Cym. 'Baltic Glaciers Mint Ice', Cym. 'Soul Hunt', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	
		Broad (>5cm)	5	Cym. 'H.C. Aurora', Cym. 'Pine Clash Moon Venus', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Sleeping Nymph'	
48. (+) * PQ (c)	Lip shape (Spread out)	Oblanceolate	1	--	VG
		Ovate	3	Cym. 'Jungfrau Dos Pueblos', Cym. 'W.W. Wondrous'	
		Obovate	5	--	
		Orbicular	7	--	
49. (+) PQ (c)	Lip apex	Acute	1	Cym. 'Red Star', Cym. 'Sleeping Nymph'	VG
		Obtuse	3	Cym. 'Takarjoke', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous'	
		Notched	5	Cym. 'Winter Beach Sea Green',	
50. (+) PQ (c)	Lip curvature	Straight	1	--	VS
		Reflexed with straight apex	3	Cym. 'Fire Storm'	
		Reflexed with incurved apex	5	Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
51.	Lip lobation	Absent	1	--	VS



PQ (c)		Present	9	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
52. * QN (c)	Lip: No. of keels	Absent	1	--	VS
		Two	3	Cym. 'Takarjoke', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
		Three	5	--	
		Four	7	--	
53. PQ (c)	Lip surface texture	Glabrous (Smooth)	1	--	VG
		Pubescence (Hairy)	9	Cym. 'Takarjoke', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Red Star', Cym. 'Show Girl', Cym. 'Sleeping Nymph'	
54. (+) QL (d)	Lip colour (No.) inside	Single	1	Cym. 'Sun Gold'(yellow)	VG
		Double	3	Cym. 'Pine Clash Moon Venus' (yellow, orange), Cym. 'H.C. Aurora'(yellow, orange), Cym. 'Fire Storm'(yellow & red purple), Cym. 'Bob Marlin Lucky'(yellow-white, red purple)	
		Triple or more	5	Cym. 'Takarjoke'(red purple, white & yellow orange), Cym. 'Winter Beach Sea Green' (red purple, yellow green & yellow orange),	

				Cym. 'Madrid Forest King'(red purple, yellow green & yellow orange)	
55. QL (d)	Lip colour (No.) outside	Single	1	Cym. 'Pine Clash Moon Venus'(yellow), Cym. 'H.C. Aurora'(yellow), Cym. 'Red Star' (yellow), Cym. 'Sleeping Nymph'(yellow)	VG
		Double	3	Cym. 'Jungfrau Dos Pueblos'(white,red purple), Cym. 'Takarjoke'(yellow orange, red purple), Cym. 'W.W. Wondrous'(white, red purple), Cym. 'Fire Storm'(red purple, grey yellow)	
		Triple or more	5	Cym. 'Winter Beach Sea Green'(yellow, orange & white), Cym. Bob Marlin 'Lucky'(grey yellow,yellow white & orange white), Cym. 'Madrid Forest King'(yellow, green & white)	
56. QL (d)	Inside lip colour pattern	Absent	1	--	VG
		Spotted	3	Cym. 'Jungfrau Dos Pueblos'(red purple), Cym. 'Takarjoke'(red purple), Cym. 'Fire Storm'(red purple), Cym. Bob Marlin 'Lucky'(red purple), Cym. 'W.W. Wondrous'(red purple), Cym. 'Winter Beach Sea Green'(red purple), Cym. 'Madrid Forest King'(red purple)	
		Blotched	5	Cym. 'Pine Clash Moon Venus'(red purple), Cym. 'H.C. Aurora', (red purple), Cym. 'Sun Gold' (yellow orange), Cym. 'Jungfrau Dos	

				Pueblós'(red purple), Cym. Bob Marlin 'Lucky', Cym. 'Madrid Forest King'(red purple), Cym. 'Sleeping Nymph'(red purple)	
		Streaked/S triped	7	Cym. 'Winter Beach Sea Green'(red purple), Cym. 'Red Star' (red purple)	
57. QL (d)	Outside lip colour pattern	Absent	1	Cym. 'Jungfrau Dos Pueblós', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	VG
		Spotted	3	Cym. 'H.C. Aurora' (red purple), Cym. 'Takarjoke'(red purple), Cym. 'Fire Storm'(red purple), Cym. Bob Marlin 'Lucky'(red purple), Cym. 'Winter Beach Sea Green'(red purple), Cym. 'W.W. Wondrous'(red purple), Cym. 'Show Girl'(red purple)	
		Blotched	5	Cym. 'Fire Storm' (red purple), Cym. Bob Marlin 'Lucky'(red purple), Cym. 'Sun Gold'(yellow orange)	
		Streaked/S triped	7	Cym. 'Fire Storm' (red purple)	
58. QN (c)	Column length	Short (<2cm)	1	--	MS
		Medium (2cm- 4cm)	3	Cym. 'Yankilla', Cym. 'Pine Clash Moon Venus', Cym. 'Soul Hunt', Cym. 'Sun Gold', Cym. 'Takarjoke', Cym. 'Fire Storm', Cym. 'W.W. Wondrous', Cym. 'Red Star'	
		Long (>4cm)	5	Cym. 'H. C. Aurora', Cym. 'Hawtescens', Cym. 'H.C. Aurora', Cym. Bob Marlin 'Lucky',	

				Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'Sleeping Nymph'	
59. (+) QL (e)	Column colour (Nos.) inside	Single	1	Cym. 'Pine Clash Moon Venus'(yellow), Cym. 'Sun Gold'(yellow), Cym. 'H.C. Aurora'(yellow)	VG
		double	3	Cym. 'Takarjoke'(yellow & red purple), Cym. 'Fire Storm'(red purple & yellow), Cym. 'Bob Marlin Lucky'(red purple & yellow)), Cym. 'Winter Beach Sea Green'(yellow green, & yellow orange),	
		Triple or more	5	Cym. 'Jungfrau Dos Pueblos'(orange, white & yellow),	
60. QL (e)	Column: colour pattern inside	Absent	1	--	VG
		Spotted	3	Cym. 'Pine Clash Moon Venus'(red purple), Cym 'H.C. Aurora'(red purple), Cym. 'Jungfrau Dos Pueblos'(red purple), Cym. 'Madrid Forest King'(red purple), Cym. 'Show Girl'(red purple), Cym. 'Sleeping Nymph'(red purple)	
		Blotched	5	Cym. 'Winter Beach Sea Green'(red purple),	
		Streaked /Striped	7	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky'(red purple), Cym. 'Winter Beach Sea Green'(red purple),	
		Spotted	3	Cym. 'Winter Beach Sea Green'(red purple), Cym. 'Pine Clash Moon	

				Venus'(red purple), Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky'(red purple), Cym. 'W.W. Wondrous', Cym. 'Madrid Forest King'(red purple), Cym. 'Sleeping Nymph'(red purple)	
		Blotch	5	Cym. 'W.W. Wondrous'	
		Streaked/s triped	7	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky'(red purple)	
61. * QN (c)	Pedicel length	Short (<4cm)	1	Cym. 'Yankilla', Cym. 'Ammesbury',	MS
		Medium (4cm-8cm)	3	Cym. 'H.C. Aurora', Cym. 'Takarjoke', Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Winter Beach Sea Green', Cym. 'Madrid Forest King', Cym. 'W.W. Wondrous', Cym. 'Sleeping Nymph'	
		Long (>8cm)	5	Cym. 'Penneshaw Winter Flush'	
62. (+) PQ	Flowering season	Winter	1	Cym. 'Fire Storm', Cym. Bob Marlin 'Lucky', Cym. 'Red Star', Cym. 'Soul Hunt', Cym. 'Yankilla', Cym. 'Sleeping Nymph'	VG
		Spring	3	Cym. 'Ammesbury', Cym. 'H.C. Aurora', Cym. 'Red Imperial Red Tower', Cym. 'Hawtescens', Cym. 'Fire Storm', Cym. 'Bob Marlin Lucky', Cym. 'Winter Beach Sea Green', Cym. 'W.W. Wondrous',	
		Summer	5	--	
		Rainy	7	--	

## VIII. Explanation on the Table of characteristics

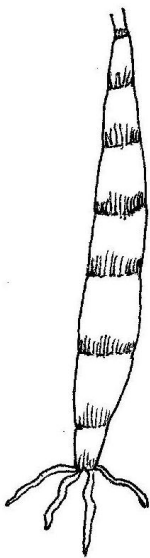
### 8.1 Guidelines for recording the observations of vegetative and flowering characteristics

Characteristics indicated with (a), (b), (c), (d) and (e) in the first column of the Table of characteristics shall be examined as indicated below:

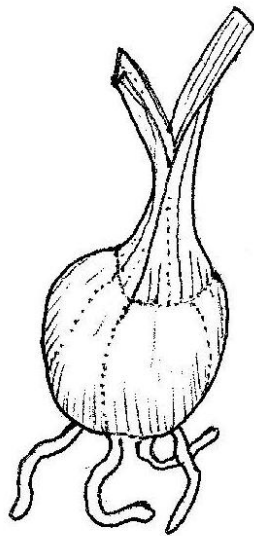
- (a) Observations on the leaf, pseudobulb and internode length shall be made on the flowering pseudobulb.
- (b) Observations on inflorescence and flower shall be made at the time when 50% of the flowers on the inflorescence have opened and on the most recently fully opened flower on the inflorescence before the colour starts to fade.
- (c) Observations on the length and width of the flower and parts of the flower shall be made on the spread out positions.
- (d) Observations on the colour of sepal, petal and lip shall be made on the outer side and inner side at apex, mid and base portion.
- (e) Observations on the colour of column shall be made on the inner side at apex, mid and basal region.

### 8.2 Explanations for individual characteristics

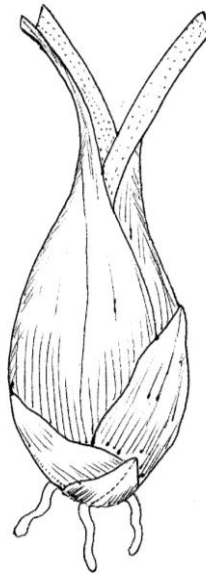
#### Characteristic 2: Pseudobulb shape



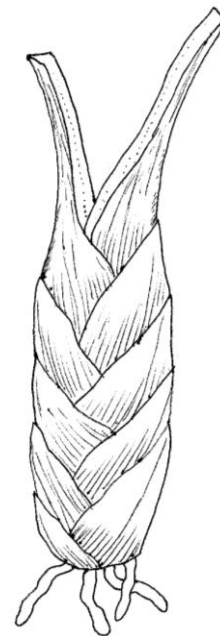
**1**  
**Narrow cylindrical**



**3**  
**Round**



**5**  
**Ovoid**



**7**  
**Conical**

**Characteristics 6: Leaf shape**



**1**  
**Linear**



**3**  
**Linear oblong**



**5**  
**Lanceolate**

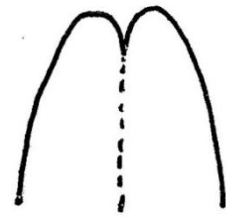
**Characteristics 8: Apex (Tip) of leaf**



**1**  
**Acute**



**3**  
**Obtuse**

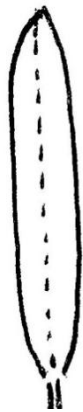


**5**  
**Bilobed**

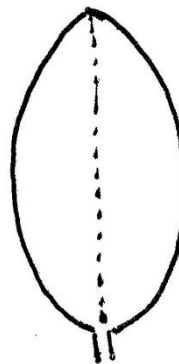
**Characteristics 29 & 33: Dorsal and lateral sepal shape**



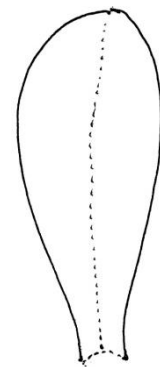
**1**  
**Linear**



**3**  
**Oblong**

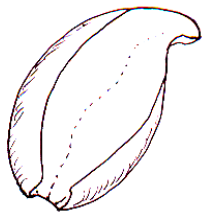


**5**  
**Elliptic**



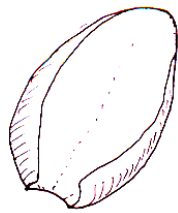
**7**  
**Obovate**

**Characteristics 30 & 34: Dorsal sepal and lateral sepal curvature**



**1**

**Incurved with  
deflexed apex**



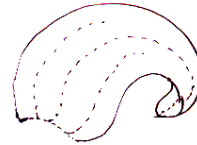
**3**

**Incurved with  
straight apex**



**5**

**Straight**



**7**

**Deflexed**

**Characteristics 31, 35, 40: Apex of dorsal sepal, lateral sepal and petal**



**1**

**Acute**



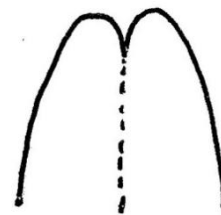
**3**

**Obtuse**



**5**

**Praemorse**



**7**

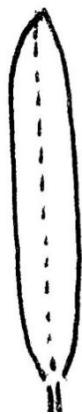
**Bilobed**

**Characteristics 38: Petal shape**



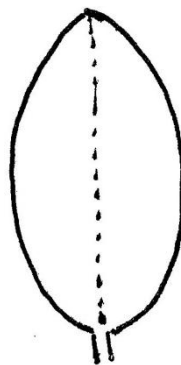
**1**

**Linear**



**3**

**Oblong**



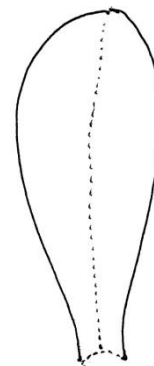
**5**

**Elliptic**



**7**

**Lanceolate**

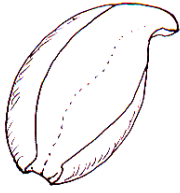


**9**

**Obovate**

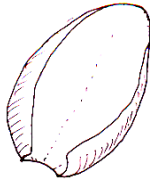


**Characteristics 39: Petal curvature**



**1**

**Incurved with  
deflexed apex**



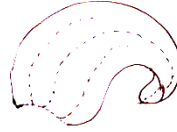
**3**

**Incurved with  
straight apex**



**5**

**Straight**



**7**

**Deflexed**



**9**

**Deflexed with  
incurved apex**

**Characteristics 41: Petal margin**



**1**

**Entire**



**3**

**Undulate**



**5**

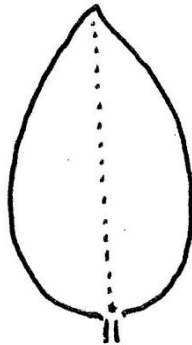
**Erose**

**Characteristics 48: Lip shape**



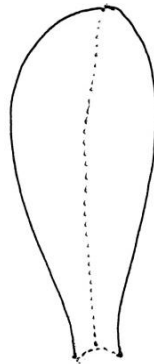
**1**

**Oblanceolate**



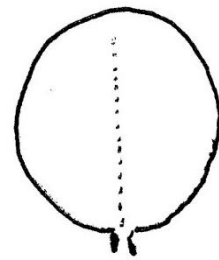
**3**

**Ovate**



**5**

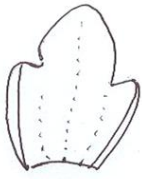
**Obovate**



**7**

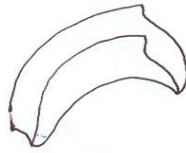
**Orbicular**

### Characteristics 50: Lip curvature



**1**

**Straight**



**3**

**Deflexed with straight apex**



**5**

**Deflexed with incurved apex**

### IX. Name of DUS Test Centre

Nodal DUS Centre	Other Test Centre
National Research Centre for Orchids, Pakyong-737106, Sikkim	State Forest Research Institute, Chimpu, Itanagar, Arunachal Pradesh

## **Orchid (*Dendrobium Sw.*)**

### **I. Subject**

These test guidelines apply to all vegetatively propagated varieties of *Dendrobium Sw.* of the family Orchidaceae.

### **II. Plant material 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 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 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.
2. For all varieties, only 2 to 3 years old 20 plants (10 for each Centre) with at least two shoots shall be required for DUS testing.
3. The plant material supplied should be visibly healthy, not lacking in vigour or affected by any pests or diseases or mechanical damage.
4. Plant material shall not have undergone any chemical or bio-physical treatment unless the competent authority allow or request such treatment. If it has been treated, details of the treatment must be given.

### **III. Conduct of Tests**

1. A test shall normally be conducted for two flowering seasons.
2. Test shall normally be conducted at two places. If any essential characteristics of the variety are not expressed for visual observations at these places, 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 test shall be carried out in the greenhouse under conditions ensuring normal growth for the plant concerned. The size of the pots/ containers shall be such that plants or parts of plants may be removed for measurement and counting without prejudice to the observations which must be made up to the end of the flowering period. Each test shall include a total of 10 plants.

4. Test shall be done only in pots of prescribed size. The pots shall be kept at a standard spacing recommended for each type or at the spacing specified by the applicant.
5. Additional tests for special purposes may be established.
6. Normally, growth regulators shall not be used.

#### **IV. Methods and Observations**

1. The characteristics described in the Table of characteristics (Section VII) shall be used for the testing of varieties for their DUS.
2. For the assessment of Distinctiveness and Stability, all observations shall be made on 10 plants or parts taken from each of 10 plants.
3. For the assessment of Uniformity, 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, the maximum number of off-types allowed would be 1.
4. All observations of on the shoot shall be made on the flowering shoot.
5. All observations on the leaf shall be made on the longest leaf of a flowering shoot.
6. All observations on the inflorescence and the flower shall be made at the time when 50% of the flowers on the inflorescence have opened and on the most recently fully opened flower on the inflorescence before fading of colour.
7. All observations on the length and width of the flower and parts of the flower shall be made in the spread out positions.
8. All observations on the colour of sepal, petal, lip and column shall be made on the inner side.
9. For the assessment of colour characteristics, the Royal Horticultural Society (RHS) colour chart shall be used.

#### **V. Grouping of Varieties**

1. The candidate varieties for DUS test shall be divided into groups to facilitate the assessment of Distinctiveness. Characteristics which are known from experience not to vary or to vary 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. The following characteristics shall be used for grouping of Dendrobium varieties and hybrids:

a) Plant: height	(Characteristic 1)
b) Internode: number	(Characteristics 3)
c) Inflorescence: number per shoot per year	(Characteristic 10)
d) Flower size: width in front view	(Characteristic 16)
e) Flower: predominant colour	(Characteristic 25 & 32)
f) Lip: predominant colour	(Characteristic 41)
g) Lip: colour pattern	(Characteristic 43)
h) Flowering: season	(Characteristics 52)

## VI. Characteristics and symbols

1. To assess Distinctness, Uniformity and Stability, the characteristics and their states as given in the Table of characteristics shall be used.
2. Notes 1-9 (numbers) shall be used to describe the state of each character for the purpose of electronic data processing.
3. Legend

(\*) Characteristics that shall be observed during every growing season for varieties and hybrids and shall always be included in the description of the varieties and hybrids, 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.

(+) See explanations on the Table of characteristics

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. **(a)-(e)** see Section VIII for explanation
6. Type of assessment of characteristics indicated in column six of the Table of characteristics are 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

Sl. No.	Characteristic	State	Note	Example Varieties /hybrids	Type of Assessment
1. * QN	Plant height (From base to the tip of the flowering shoot)	Very small (<20 cm)	1	Den. 'Bangkok Blue', Den. 'Erika'	MS
		Small (20-40 cm)	3	Den. 'Burana Stripe', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Triple Pink'	
		Medium (41-60 cm)	5	Den. 'Abraham', Den. 'Madam Pink'	
		Large (61-80 cm)	7	Den. 'Emma White'	
		Very large (>80 cm)	9	--	
2. (+) * QN (a)	Nature of shoot (at flowering)	Cane (woody)	1	--	VG
		Cane (cylindric fleshy)	3	--	
		Cane (clavate fleshy)	5	Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Thongchai Gold', Den. 'Erika', Den. 'Triple Pink', Den. 'Madam Pink'	
		Bulbous (round)	7	Den. 'Julie'	
3. * QN (a)	Internode number (flowering shoot)	Few (<5)	1	--	VS
		Medium (5-10)	3	Den. 'Big White-4N', Den. 'Thongchai Gold',	

				Den. 'Bangkok Blue', Den. 'Julie', Den. 'Erika', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Madam Pink', Den. 'Triple Pink'	
		Many (>10)	5	Den. 'Abraham', Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Kating Dang'	
4. QN (a)	Internode diameter (widest part of shoot)	Small (<2.0 cm)	1	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	MS
		Medium (2.0-4.0 cm)	3	Den. 'Julie'	
		Large (>4.0 cm)	5	--	
5. QN (a)	Number of leaves (on flowering shoot)	Absent	1	--	MS
		Few (<3)	3	--	
		Medium (3-6)	5	Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Erika', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Triple Pink'	
		Many (>6)	7	Den. 'Abraham', Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Madam Pink'	

6. QN (a)	Leaf length (largest leaf)	Very short (< 5.0 cm)	1	--	MS
		Short (5.0-10.0 cm)	3	Den. 'Bangkok Blue', Den. 'Erika', Den. 'Earsakul'	
		Medium (10.1-15.0 cm)	5	Den. 'Burana Stripe', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Long (>15.0 cm)	7	Den. 'Abraham', Den. 'Emma White', Den. 'Julie'	
7. QN (a)	Leaf width (largest leaf)	Narrow (<2.0 cm)	1	Den. 'Julie', Den. 'Erika'	MS
		Medium (2.0-4.0 cm)	3	Den. 'Abraham', Den. 'Emma White', Den. 'Big White-4N', Den. 'Bangkok Blue', Den. 'Earsakul', Den. 'Triple Pink'	
		Broad (4.1-6.0cm)	5	Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
		Very broad (>6.0 cm)	7	Den. 'Thongchai Gold'	
8. (+) PQ (a)	Leaf shape (largest leaf)	Linear	1	Den. 'Julie'	VG
		Elliptic	3	Den. 'Erika'	
		Lanceolate	5	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Madam Pink', Den. 'Triple Pink'	
		Ovate	7	Den. 'Thongchai Gold', Den. 'Big White Jumbo',	



				Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang'	
9. (+) PQ (a)	Leaf apex (largest leaf)	Acute	1	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	VG
		Obtuse	3	--	
		Bilobed	5	Den. 'Big White Jumbo'	
		Retuse	7	Den. 'Abraham', Den. 'Bangkok Blue'	
		Acuminate	9	--	
10. * QN (b)	Inflorescence: number per plant	Few (< 3)	1	Den. 'Abraham', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Triple Pink', Den. 'Big White-4N', Den. 'Madam Pink'	VS
		Medium (3-5)	3	Den. 'Bangkok Blue', Den. 'Julie'	
		Many (> 5)	5	Den. 'Earsakul', Den. 'Emma White', Den. 'Thongchai Gold'	
11. PQ (b)	Inflorescence orientation	Erect	1	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang',	VG

				Den. 'Madam Pink', Den. 'Triple Pink'	
		Horizontal	3	--	
		Arching	5	--	
		Pendulus	7	--	
12. * QN (b)	Inflorescence length	Short (<20 cm)	1	Den. 'Thongchai Gold', Den. 'Big White Jumbo',	MS
		Medium (20-40 cm)	3	Den. 'Emma White', Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Triple Pink'	
		Long (41-60 cm)	5	Den. 'Madam Pink'	
		Very long (>60 cm)	7	--	
13. QN (b)	Peduncle length (Base of inflorescence to the 1 <sup>st</sup> Flower)	Short (<10 cm)	1	--	MS
		Medium (10-20 cm)	3	Den. 'Bangkok Blue', Den. 'Julie', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Madam Pink', Den. 'Triple Pink'	
		Long (>20 cm)	5	Den. 'Emma White', Den. 'Abraham', Den. 'Big White-4N'	
14. * QN (b)	Flower number per inflorescence	Few (< 7)	1	Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Earsakul', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	MS
		Medium (7-10)	3	Den. 'Abraham', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia'	
		Many	5	Den. 'Emma White',	

		(>10)		Den. 'Julie', Den. 'Dang Saard'	
15. QN (c)	Flower Length (Tip of dorsal sepal to tip of lip)	Short (<3.0 cm)	1	--	MS
		Medium (3.0-6.0 cm)	3	Den. 'Abraham', Den. 'Emma White', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Long (>6.0 cm)	5	Den. 'Earsakul'	
16. * QN (c)	Flower width in front view (Tip distance of two lateral petals)	Narrow (<3.0 cm)	1	--	MS
		Medium (3.0-6.0 cm)	3	Den. 'Abraham', Den. 'Emma White', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Dang Saard'	
		Broad (>6.0 cm)	5	Den. 'Abraham', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Earsakul', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
17. QL (b)	Flower fragrance	Absent	1	Den. 'Abraham', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	VG

		Present	9	Den. 'Big White-4N', Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Triple Pink'	
18. QN (b)	Flower longevity on the plant	Short (<15 days)	1	--	VG
		Medium (15-30 days)	3	Den. 'Julie'	
		Long (> 30 days)	5	Den. 'Abraham', Den. Bangkok Blue, Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
19. QN (c)	Dorsal sepal length	Short (<2.0 cm)	1	--	MS
		Medium (2.0-4.0 cm)	3	Den. 'Abraham', Den. 'Emma White', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
		Long (> 4.0 cm)	5	Den. 'Earsakul', Den. 'Triple Pink'	
20. QN (c)	Dorsal sepal width (at middle)	Narrow (<1.0 cm)	1	--	MS
		Medium (1.0-2.0 cm)	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia'	

				Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
		Broad (>2.0cm)	5	Den. 'Triple Pink'	
21. (+) PQ (c)	Dorsal sepal shape	Linear	1	--	VG
		Oblong	3	Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Elliptic	5	Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia'	
		Obovate	7	Den. 'Emma White'	
		Orbicular	9	Den. 'Renappa'	
22. (+) PQ (c)	Dorsal sepal apex	Acute	1	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang'	VG
		Acuminate	3	Den. 'Abraham', Den. 'Earsakul', Den. 'Madam Pink', Den. 'Triple Pink'	
		Obtuse	5	Den. 'Thongchai Gold'	
		Retuse	7	--	
23. (+) PQ (c)	Lateral sepal shape	Linear	1	--	VG
		Oblong	3	Den. 'Julie', Den. 'Erika'	
		Elliptic	5	--	
		Obovate	7	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Big White Jumbo', Den. 'Earsakul',	

				Den. 'Dang Saard', Den. 'Kating Dang'	
		Triangular	9	Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Madam Pink', Den. 'Triple Pink'	
24. (+) PQ (c)	Lateral sepal apex	Acute	1	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang'	MG
		Acuminate	3	Den. 'Abraham', Den. 'Earsakul', Den. 'Madam Pink', Den. 'Triple Pink'	
		Obtuse	5	--	
25. QL (d)	Sepal dominant colour	Green	1	Den. 'Dang Saard'	VG
		White	2	Den. 'Big White-4N', Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia'	
		Pink	3	--	
		Yellow	4	Den. 'Thongchai Gold'	
		Red	5	Den. 'Julie', Den. 'Kating Dang'	
		Purple	6	Den. 'Abraham', Den. 'Bangkok Blue', Den. 'Earsakul', Den. 'Madam Pink', Den. 'Triple Pink'	
		Blue	7	--	
		Violet	8	--	
26. QL (d)	Sepal colour pattern inside	Uniform	1	--	MG
		Mixed	2	Den. 'Julie', Den. 'Earsakul'	
		Spotted	3	--	
		Blotched	4	--	
		Shaded /Striped	5	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold',	

				Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Dang Saard', Den. 'Madam Pink'	
		Netted	6	Den. 'Abraham', Den. 'Bangkok Blue', Den. 'Kating Dang', Den. 'Triple Pink'	
27. QN (c)	Petal length	Short (<2.0 cm)	1	--	MG
		Medium (2.0-4.0 cm)	3	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
		Long (> 4.0 cm)	5	Den. 'Earsakul', Den. 'Triple Pink'	
28. QN (c)	Petal width (at middle)	Narrow (<2.0 cm)	1	Den. 'Julie' Den. 'Emma White', Den. 'Abraham', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang'	MS
		Medium (2.0-3.0 cm)	3	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Earsakul', Den. 'Madam Pink'	
		Broad (>3.0 cm)	5	Den. 'Triple Pink' Den. 'Renappa'	
29. (+) PQ (c)	Petal shape	Linear	1	--	VG
		Oblong	3	--	
		Elliptic	5	Den. 'Earsakul'	
		Obovate	7	Den. 'Abraham', Den. 'Emma White', Den. 'Big White-4N', Den. 'Thongchai Gold',	

				Den. 'Bangkok Blue', Den. 'Erika', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Ovate	9	Den. 'Big White Jumbo',	
30. (+) PQ (c)	Petal curvature	Straight	1	--	VG
		Deflexed	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Spiral	5	--	
31. (+) PQ (c)	Petal apex	Acute	1	Den. 'Emma White', Den. 'Bangkok Blue', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	VG
		Acuminate	3	Den. 'Abraham', Den. 'Earsakul'	
		Obtuse	5	Den. 'Big White-4N', Den. 'Julie'	
		Retuse	7	Den. 'Thongchai Gold', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Big White Jumbo'	
32. QL (d)	Petal predominant colour	Green	1	Den. 'Daang Saard',	VG
		White	2	Den. 'Big White 4N', Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Lervia'	
		Yellow	3	Den. 'Thongchai Gold'	
		Pink	4	Den. 'Madam Pink', Den. 'Triple Pink', Den. 'Earsakul'	
		Red	5	Den. 'Kating Dang'	



		Purple	6	Den. 'A. Abraham', Den. 'Madam Pink',	
		Blue	7	Den. 'Thongchai Blue'	
		Violet	8	Den. 'Bangkok Blue'	
33. QL (d)	Petal colour (No.) inside	Single	1	Den. 'A. Abraham'(purple), Den. 'Big White 4N'(white), Den. 'Emma White'(white), Den. 'Big White Jumbo'(white), Den. 'Kating Dang' (red purple), Den. 'Madam Pink'(purple)	VG
		Double	3	Den. 'Bangkok Blue'(purple violet, violet), Den. 'Julie'(red purple, yellow orange), Den. 'Daang Saard' (yellow green), Den. 'Kating Dang'(red, purple)	
		Triple or more	5	--	
34. QL (d)	Petal colour pattern	Uniform	1	Den. 'Big White-4N, Den. 'Emma White', Den. 'Big White Jumbo', Den. 'Dang Saard'	VG
		Mixed	3	Den. 'Abraham', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Earsakul', Den. 'Triple Pink'	
		Spotted	5	--	
		Striped/ shaded	7	Den. 'Thongchai Gold', Den. 'Lervia', Den. 'Madam Pink'	
		Netted	9	Den. 'Kating Dang'	
35. QN (c).	Lip length	Short (< 2 cm)	1	Den. 'Julie'	MG
		Medium (2-4 cm)	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold',	

				Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Long (>4 cm)	5	--	
36. * QN (c)	Lip width	Narrow (<2 cm)	1	Den. 'Julie'	MG
		Medium (2-4 cm)	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
		Broad (>4 cm)	5	Den. 'Triple Pink'	
37. (+) PQ (c)	Lip shape	Ovate	1	--	VG
		Oblanceolate	3	--	
		Orbicular	5	Den. 'Abraham', Den. 'Big White-4N',	
		Obovate	7	--	
38. (+) PQ (c)	Lip apex	Acute	1	Den. 'Bangkok Blue', Den. 'Julie', Den. 'Lervia', Den. 'Kating Dang', Den. 'Triple Pink'	VG
		Obtuse	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Erika', Den. 'Dang Saard', Den. 'Madam Pink'	
		Retuse	5	Den. 'Big White Jumbo'	
		Praemorse	7	Den. 'Emma White',	
		Acuminate	9	Den. 'Earsakul'	

39. PQ (c)	Lip curvature	Straight	1	Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Erika', Den. 'Kating Dang', Den. 'Triple Pink'	VG
		Reflexed with straight apex	3	Den. 'Abraham'	
		Reflexed with curved apex	5	Den. 'Big White-4N', Den. 'Big White Jumbo', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Madam Pink'	
		Incurved with straight apex	7	--	
40. * PQ (c)	Lip lobation	Absent	1	--	VG
		Present	9	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
41. * QL (d)	Lip predominant colour	Green	1	--	VS
		White	2	Den. 'Big White-4N', Den. 'Emma White', Den. 'Big White Jumbo'	
		Yellow	3	Den. 'Thongchai Gold'	
		Pink	4	--	
		Red	5	Den. 'Kating Dang'	
		Purple	6	Den. 'Abraham', Den. 'Julie', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Madam Pink'	
		Blue	7	Den. 'Thongchai Blue'	

		Violet	8	Den. 'Bangkok Blue', Den. 'Erika', Den. 'Triple Pink'	
42. QL (d)	Lip colour (Nos.)	Single	1	Den. 'Thongchai Gold'(yellow green), Den. 'Madam Pink'(purple)	VS
		Double	3	Den. 'Abraham'(purple, green yellow), Den. 'Lervia'(purple, yellow green), Den. 'Earsakul' (purple, green yellow), Den. 'Big White-4N'(white, yellow green), Den. 'Emma White'(white, yellow green), Den. 'Big White Jumbo'(white, yellow green), Den. 'Bangkok Blue' (purple violet, white)	
		Triple or more	5	Den. 'Dang Saard'(red purple, yellow, green ), Den. 'Triple Pink'(purple, purple violet, white)	
43. * QL (d)	Lip colour pattern	Uniform	1	Den. 'Big White Jumbo'	VG
		Mixed	3	--	
		Spotted	5	--	
		Striped/ Shaded	7	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Triple Pink'	
		Netted	9	Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	
44. (+) PQ (c)	Lip margin	Entire	1	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue',	VG

				Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Triple Pink'	
		Undulate	3	Den. 'Big White Jumbo', Den. 'Erika', Den. 'Kating Dang'	
		Fimbriate	5	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Big White-4N', Den. 'Thongchai Gold'	
45. PQ (c)	Lip callus	Absent	1	--	VG
		Present	9	Den. 'Abraham'(5), Den. 'Big White-4N'(5), Den. 'Emma White'(5), Den. 'Thongchai Gold', Den. 'Bangkok Blue' (5), Den. 'Julie' (3), Den. 'Big White Jumbo'(5), Den. 'Erika' (5), Den. 'Lervia'(5), Den. 'Earsakul'(5), Den. 'Dang Saard'(5), Den. 'Kating Dang'(7), Den. 'Madam Pink'(5), Den. 'Triple Pink'(5)	
46. PQ (c)	Lip surface texture	Glabrous	1	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie',	VG

				Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Pubescent	9	--	
47. QN (c)	Column width across stigma	Narrow (<0.5 cm)	1	--	MS
		Medium (0.5-1.0 cm)	3	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Bangkok Blue', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'	
		Broad (>1.0 cm)	5	Den. 'Earsakul'	
48. QL (e)	Column colour (Nos.)	Single	1	Den. 'Emma White'(white), Den. 'Lervia'(white), Den. 'Abraham'(purple), Den. 'Julie' (red purple), Den. 'Big White-4N'(green white), Den. 'Big White Jumbo' (green white)	VG
		Double	3	Den. 'Earsakul' (red purple, white), Den. 'Erika' (purple, green white), Den. 'Kating Dang'(purple, green white), Den. 'Madam Pink'(purple, white), Den. 'Triple Pink'(white, purple)	

		Triple or more	5	--	
49. QL (e)	Column colour pattern	Uniform	1	Den. 'Abraham', Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Big White Jumbo', Den. 'Dang Saard'	VG
		Spotted	3	Den. 'Madam Pink', Den. 'Triple Pink'	
		Blotch	5	Den. 'Earsakul', Den. 'Kating Dang'	
		Streaked / striped /shaded	7	Den. 'Bangkok Blue', Den. 'Lervia', Den. 'Abraham'	
50. QL	Anther cap colour	White	1	Den. 'Bangkok Blue', Den. 'Madam Pink'	VG
		Yellow	3	Den. 'Big White-4N', Den. 'Emma White', Den. 'Lervia', Den. 'Kating Dang', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Dang Saard', Den. 'Earsakul', Den. 'Triple Pink'	
		Purple	5	Den. 'Abraham', Den. 'Julie'	
51. QN (c)	Spur / Mentum length	Short (< 1.5 cm)	1	Den. 'Big White-4N', Den. 'Emma White', Den. 'Thongchai Gold', Den. 'Julie', Den. 'Erika', Den. 'Earsakul', Den. 'Dang Saard', Den. 'Kating Dang', Den. 'Madam Pink'	MS
		Medium (1.5-2.0 cm)	3	Den. 'Abraham', Den. 'Bangkok Blue', Den. 'Big White Jumbo', Den. 'Lervia'	
		Long (>2.0 cm)	5	Den. 'Triple Pink'	
52. *	Flowering season	Winter	1	--	VG
		Spring	3	Den. 'Abraham',	

PQ			Den. 'Big White-4N', Den. 'Thongchai Gold', Den. 'Bangkok Blue
	Summer	5	Den. 'Julie', Den. 'Big White Jumbo', Den. 'Erika', Den. 'Lervia', Den. 'Dang Saard'
	Rainy	7	Den. 'Abraham', Den. 'Kating Dang', Den. 'Madam Pink', Den. 'Triple Pink'
	Year round	9	Den. 'Earsakul', Den. 'Emma White',

## VIII. Explanations on the Table of characteristics

### 8.1 Guidelines for recording the observations of vegetative and flowering characteristics

Characteristics indicated with (a), (b), (c), (d) and (e) in the first column of the Table of characteristics should be examined as indicated below:

- (a) Observations on the leaf, shoot and internode length shall be made on the flowering shoot.
- (b) Observations on the inflorescence and the flower shall be made at the time when 50% of the flowers on the inflorescence have opened and the most recently fully opened flower on the inflorescence before the color starts to fade.
- (c) Observations on the length and width of the flower and parts of the flower shall be made on the spread out positions.
- (d) Observations on the color of the sepal, the petal and the lip shall be made on inner side at apex, mid and base portion.
- (e) Observations on the colour of column shall be made on inner side at apex, mid and basal region.



## 8.2 Explanations for individual characteristics

### Characteristics 2: Nature of shoot



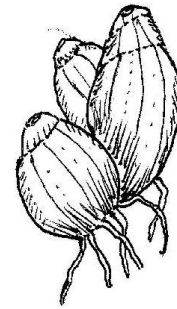
1  
Cane (woody)



3  
Cane cylindric (fleshy)



5  
Cane clavate fleshy

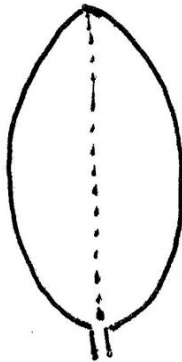


7  
Bulbous (round)

### Characteristics 8 : Leaf shape



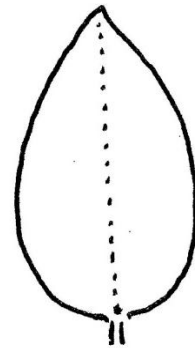
1  
Linear



3  
Elliptic



5  
Lanceolate



7  
Ovate

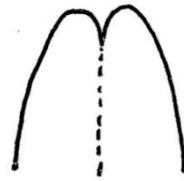
**Characteristics 9: Apex of leaf**



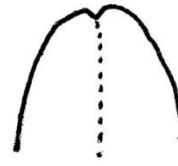
**1**  
**Acute**



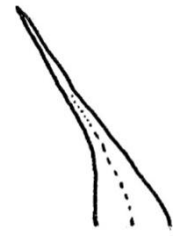
**3**  
**Obtuse**



**5**  
**Bilobed**



**7**  
**Retuse**

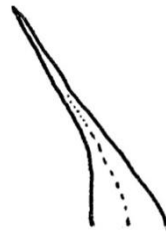


**9**  
**Acuminate**

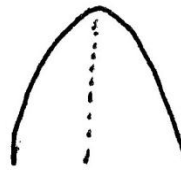
**Characteristics 22 & 31: Apex of dorsal sepal & petal**



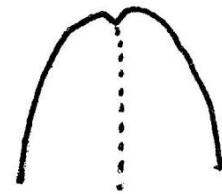
**1**  
**Acute**



**3**  
**Acuminate**



**5**  
**Obtuse**

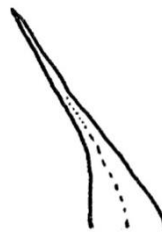


**7**  
**Retuse**

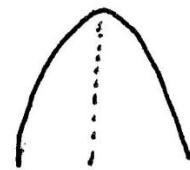
**Characteristics 24: Apex of lateral sepal**



**1**  
**Acute**



**3**  
**Acuminate**



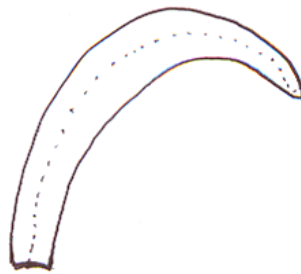
**5**  
**Obtuse**

**Characteristics 30: Petal curvature**



**1**

**Straight**



**3**

**Deflexed**



**5**

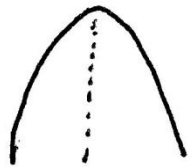
**Spiral**

**Characteristics 38: Apex of lip**



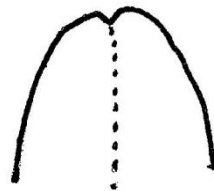
**1**

**Acute**



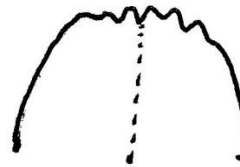
**3**

**Obtuse**



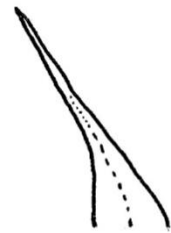
**5**

**Retuse**



**7**

**Praemose**



**9**

**Acuminate**

**Characteristics 21: Dorsal sepal shape**



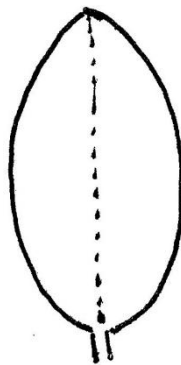
**1**

**Linear**



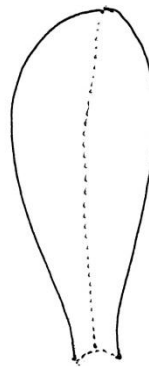
**3**

**Oblong**



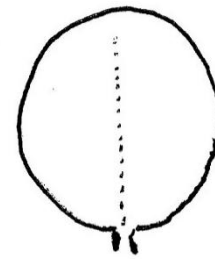
**5**

**Elliptic**



**7**

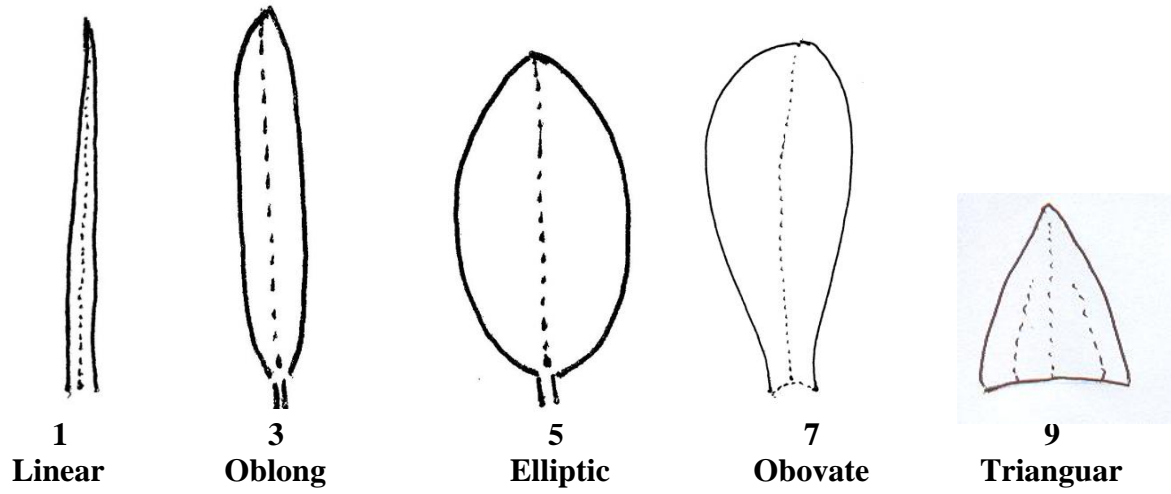
**Obovate**



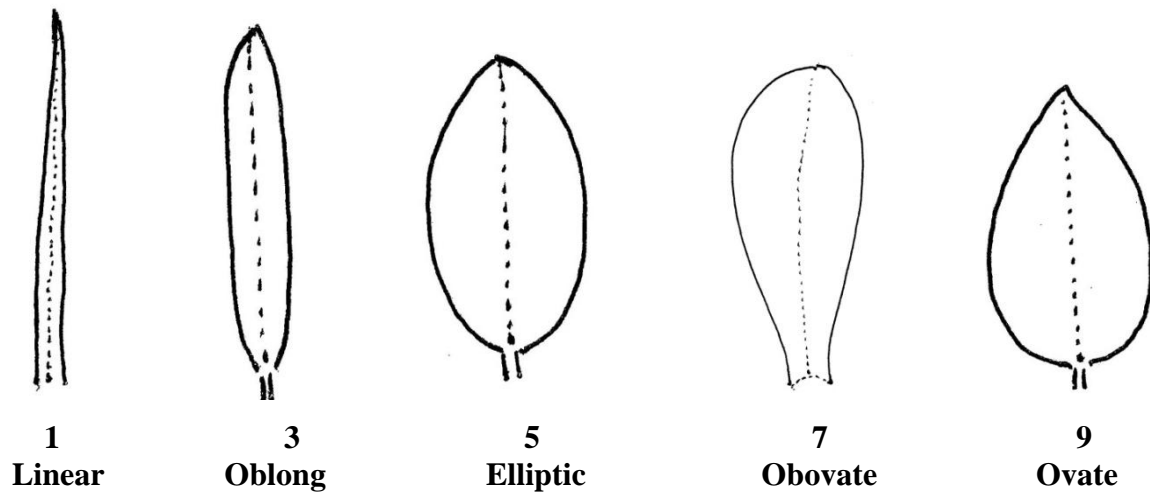
**9**

**Orbicular**

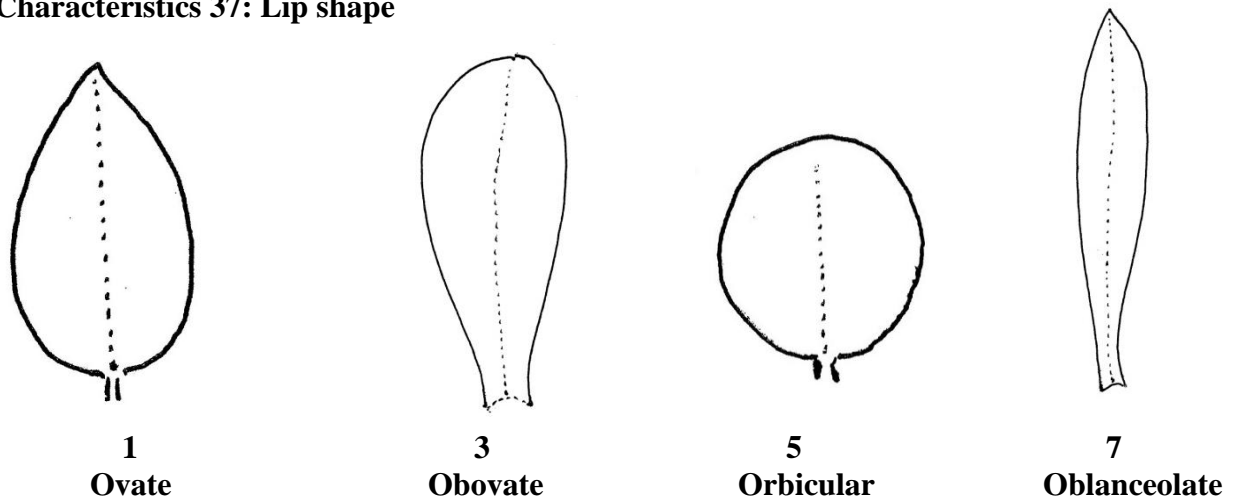
**Characteristics 23: Lateral sepal shape**



**Characteristics 29: Petal shape**



**Characteristics 37: Lip shape**



**Characteristics 44: Lip margin**



**1**

**Entire**



**3**

**Undulate**



**5**

**Fimbriate**

**X. Name of DUS Test Centres**

<b>Nodal DUS Centre</b>	<b>Other Test Centre</b>
National Research Centre for Orchids, Pakyong-737106, Sikkim	1. State Forest Research Institute, Chimpur, Itanagar, Arunachal Pradesh  2. College of Horticulture, Kerala Agricultural University, Trichur

## **Orchid (*Vanda Jones ex R.Br.*)**

### **I. Subject**

These test guidelines shall apply to all vegetatively propagated varieties of *Vanda Jones ex R.Br.* of the family Orchidaceae.

### **II. Plant material 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 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 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.
2. For all varieties, only 2 to 3 years old 20 plants (10 for each Centre) that have not flowered previously shall be required for DUS testing.
3. The plant material supplied shall be visibly healthy, not lacking in vigour or affected by any pests or diseases or mechanical damage.
4. Plant material shall not have undergone any chemical or bio-physical treatment unless the competent authority allow or request such treatment. If it has been treated, details of the treatment must be given.

### **III. Conduct of tests**

1. A test shall normally be conducted for two growing seasons.
2. Tests shall normally be conducted at two places. If any essential characteristics of the variety are not expressed for visual observations at these places, 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 tests shall be carried out in the greenhouse under conditions ensuring normal growth for the plant concerned. The size of the pots/ containers shall be such that plants or parts of plants may be removed for measurement and counting without prejudice to the

observations which must be made up to the end of the growing period. Each test shall include a total of 10 plants.

4. Test shall be done only in pots of prescribed size. The pots shall be kept at a standard spacing recommended for each type or at the spacing specified by the applicant.
5. Additional tests for special purposes may be established.
6. Normally, growth regulators shall not be used.

#### **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. For the assessment of Distinctiveness and Stability, all observations shall be made on 10 plants or parts taken from each of 10 plants.
3. For the assessment of uniformity 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, the maximum number of off-types allowed would be 1.
4. All observations of on the stems shall be made on the flowering stem.
5. All observations on the leaf shall be made on the longest leaf of a flowering stem.
6. All observations on the inflorescence and the flower shall be made at the time when 50% of the flowers on the inflorescence have opened, on the most recently fully opened flower on the inflorescence before fading of colour.
7. All observations on the length and width of the flower and parts of the flower shall be made on the extended organ.
8. All observations on the colour of the sepal, the petal and the lip shall be made both on the inner side and the outer side.
9. All observations on the colour of the column shall be made on the inner and outer side.
10. For the assessment of color characteristics, it is recommended that Royal Horticultural Society (RHS) color chart shall be used.

#### **V. Grouping of varieties**

1. The candidate varieties for DUS testing shall be divided into groups for 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. The following characteristics shall be used for grouping of Vanda varieties:

(a) Leaf: type	(Characteristics 4)
(c) Inflorescence: length	(Characteristic 12)
(d) Flower: number	(Characteristic 16)
(e) Flower: predominant colour	(Characteristics 21)
(f) Sepal: colour pattern	(Characteristics 31)
(g) Petal : colour pattern	(Characteristics 38)
(h) Lip: mid-lobe shape	(Characteristic 41)
(i) Lip: colour pattern	(Characteristic 48)
(j) Spur: type	(Characteristics 52)
(k) Flowering season	(Characteristics 54)

## **VI. Characteristics and symbols**

1. To assess Distinctness, Uniformity and Stability, the characteristics and their states as given in the Table of Characteristics shall be used.

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

3. Legend

(\*) Characteristics that shall be observed during every growing season for all varieties and hybrids and shall always be included in the description of the varieties and hybrids, 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.

(+) See explanations on the Table of characteristics

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

QL - Qualitative characteristic



QN- Quantitative characteristic

PQ - Pseudo-qualitative characteristic

5. (a)-(e) See Section VIII for explanation
6. Type of assessment of characteristics indicated in column six of the Table of characteristics are 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

S. No.	Characteristic	States	Notes	Example Varieties /hybrids	Type of Assessment
1. QN (a)	Internode length	Short (<1.0 cm)	1	Vanda 'KS.SD', V. 'Pures Wax', V. 'Pakchong Blue'	MS
		Medium (1.0-2.0 cm)	3	V. 'Prao Sky Blue', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Roberts Delight Blue'	
		Long (>2.0 cm)	5	V. 'John Clubb' V. 'Miss Joaquim'	
2. QN (a)	Stem diameter	Thin (<1.0cm)	1	V. 'Pakchong Blue'	MS
		Thick (> 1.0cm)	3	V. 'RBSD Pink 31', V. 'Motes Indigo', V. 'Pat D', V. 'Pures Wax', V. 'RBSD Black', V. 'KS'SD', V. 'Ratch Blue Star', V. 'Prao Sky Blue', V. 'RB'SD Blue', V. 'Fuchs D', V. 'RB'S Red 358', V. 'Roberts Delight Blue'	
3. PQ	Root location	Only at stem base	1	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black',	VG

				V. 'Sansai Blue', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		All along stem	3	V. 'Prao Sky Blue', V. 'PAT D', V. 'Motes Indigo'	
4. * (+) PQ (a)	Leaf type	Terete	1	V. 'John Clubb' V. 'Miss Joaquim'	VG
		Semi-terete	3	--	
		Channelled	5	--	
		Strap	7	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
5. QN (a)	Leaf length	Short (<10cm)	1	--	MS
		Medium (10-20cm)	3	V. 'Prao Sky Blue', V. 'Motes Indigo', V. 'Pakchong Blue'	
		Long (>20cm)	5	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Roberts Delight Blue'	
6. QN (a)	Leaf breadth	Narrow (<0.5cm)	1	--	MS
		Medium (0.6-1.0cm)	3	--	
		Broad (>1.0cm)	5	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Prao Sky Blue', V. 'Roberts Delight Blue'	

7. (+) PQ (a)	Leaf apex	Bilobed	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Motes Indigo'	VG
		Retuse	3	--	
		Tridentate	5	--	
		Praemorse	7	V. 'Pakchong Blue', V. 'Pures Wax', V. 'Bansai Queen', V. 'Prao Sky Blue', V. 'Roberts Delight Blue'	
		Truncate	9	--	
8. PQ (a)	Leaf orientation	Straight	1	--	VG
		Arching	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Deflexed	5	V. 'Pures Wax', V. 'PAT D', V. 'Sansai Blue'	
9. QL (a)	Leaf colour	Green	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VG
		Purple tinge	3	V. 'Pures Wax'	
		Mottle	5	--	
10. QL (a)	Leaf sheath pigmentation	Absent	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VG
		Present	9	--	

11. * QN (b)	No of inflorescences per year per plant	<Three	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VS
		Three to Six	3	--	
		>Six	5	--	
12. * QN (b)	Inflorescence length	Short (<15cm)	1	--	MS
		Medium (15cm-30cm)	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue'	
		Long (>30cm)	5	V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
13. QN (b)	Peduncle length	Short (<10cm)	1	V. 'Pures Wax', V. 'Roberts Delight Blue'	MS
		Medium (10cm-20cm)	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue'	
		Long (>20cm)	5	V. 'Motes Indigo', V. 'Pakchong Blue'	
14. PQ (b)	Inflorescence orientation	Erect	1	V. 'KS.SD', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Roberts Delight Blue'	VG
		Horizontal	3	V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'Pakchong Blue'	
		Drooping	5	--	
15. PQ (b)	Inflorescence nature	Dense	1	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue',	VG

				V. 'Motes Indigo', V. 'Pakchong Blue'	
		Lax	3	V. 'Prao Sky Blue',	
16. * QN (b)	No. of flowers per inflorescence	Few (<5)	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'PAT D'	VG
		Medium (5-10)	3	V. 'Pures Wax', V. 'RBSD Black', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Many (>10)	5	--	
17. PQ (b)	Orientation of flowers	Facing in one direction	1	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black'	VG
		Facing in all directions	3	V. 'Prao Sky Blue', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
18. QN (c)	Flower width	Narrow (< 3.0cm)	1	--	MS
		Medium (3.0 cm-6.0cm)	3	--	
		Broad (>6.0cm)	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
19. QL (b)	Flower fragrance	Absent	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VG
		Present	9	--	
20.	Flower	Short (<15 days)	1	--	VG

* QN (b)	longevity on the plant	Medium (15-30 days)	3	--	
		Long (> 30 days)	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'RB'S Red 358', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
21. * QL (b)	Flower predominant colour	Red	1	V. 'RBSD Red'	VS
		Blue	3	V. 'Roberts Delight Blue', V. 'Prao Sky Blue', V. 'Sansai Blue', V. 'Pakchong Blue'	
		Violet	5	V. 'KS.SD', V. 'Pures Wax', V. 'Motes Indigo'	
		Purple	7	V. 'RBSD Black', V. 'PAT D'	
22. QN (c)	Dorsal sepal size (length x breadth)	Small (<3cm <sup>2</sup> )	1	--	MS
		Medium (3-12cm <sup>2</sup> )	3	V. 'KS.SD',	
		Large (>12cm <sup>2</sup> )	5	V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
23. (+) PQ (c)	Dorsal sepal shape	Linear	1	--	VG
		Oblong	3	--	
		Elliptic	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'PAT D'	
		Obovate	7	V. 'RBSD Black', V. 'Motes Indigo', V. 'Roberts Delight Blue'	
24. (+) PQ	Dorsal sepal curvature	Incurved with deflexed apex	1	--	VG
		Incurved with	3	--	

(c)		straight apex			
		Straight	5	V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Deflexed	7	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black'	
25. (+) PQ (c)	Dorsal sepal apex	Acute	1	--	VG
		Obtuse	3	V. 'RBSD Black',	
		Truncate	5	V. 'Roberts Delight Blue'	
		Bilobed	7	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue'	
26. QN (c)	Lateral sepal size (length x breadth)	Small (<3cm <sup>2</sup> )	1	--	MS
		Medium (3- 12cm <sup>2</sup> )	3	--	
		Large (>12cm <sup>2</sup> )	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
27. (+) PQ (c)	Lateral sepal shape	Linear	1	--	VS
		Oblong	3	--	
		Elliptic	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'PAT D',	
		Obovate	7	V. 'Sansai Blue', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
28. (+) PQ (c)	Lateral sepal curvature	Incurved with deflexed apex	1	V. 'Pures Wax', V. 'Motes Indigo'	VG
		Incurved with straigh apex	3	V. 'PAT D', V. 'Sansai Blue',	

				V. 'Pakchong Blue'	
		Straight	5	V. 'Roberts Delight Blue'	
		Deflexed	7	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black'	
29. (+) PQ (c)	Lateral sepal apex	Acute	1	--	VG
		Obtuse	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue',	
		Truncate	5	V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Bilobed	7	--	
30. QL (d)	Sepal colour (Nos.)	Single	1	V. 'Prao Sky Blue'(violet blue), V. 'PAT D' (purple), V. 'Pakchong Blue' (violet),	VS
		Double	3	V. 'Sansai Blue'(violet & white), V. 'Motes Indigo'(violet&white), V. 'Roberts Delight Blue'(violet& purple)	
		Triple or more	5	--	
31. * QL (d)	Sepal colour pattern	Uniform	1	--	VG
		Spotted	3	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black' V. 'PAT D'	
		Blotched	5	V. 'KS.SD', V. 'Roberts Delight Blue'	
		Streak/Striped	7	--	
		Tessellated	9	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue'	



32. * QN (c)	Petal size (length x breadth)	Small (<3cm <sup>2</sup> )	1	--	MS
		Medium (3- 12cm <sup>2</sup> )	3	V. 'KS.SD',	
		Large (>12cm <sup>2</sup> )	5	V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
33. (+) PQ (c)	Petal shape	Linear	1	--	VG
		Oblong	3	--	
		Elliptic	5	V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'PAT D'	
		Lanceolate	7	--	
		Obovate	9	V. 'Pures Wax', V. 'Motes Indigo', V. 'Roberts Delight Blue'	
34. (+) PQ (c)	Petal curvature	Incurved with deflexed apex	1	V. 'Pures Wax', V. 'RBSD Black',	VG
		Incurved with straight Apex	3	V. 'KS.SD', V. 'PAT D', V. 'Sansai Blue', V. 'Pakchong Blue'	
		Straight	5	V. 'Motes Indigo', V. 'Roberts Delight Blue'	
		Deflexed	7	V. 'Prao Sky Blue',	
		Deflexed with incurved apex	9	--	
35. (+) PQ (c)	Petal apex	Acute	1	--	VG
		Obtuse		V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black'	
		Truncate	3	V. 'Motes Indigo', V. 'Pakchong Blue'	
		Bilobed	5	V. 'Pures Wax', V. 'Roberts Delight Blue', V. 'PAT D', V. 'Sansai Blue'	
36. (+) PQ	Petal margin	Entire	1	--	VS
		Undulate	3	V. 'KS.SD', V. 'Pures Wax',	

(c)				V. 'RBSD Black', V. 'PAT D', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Erose	5	V. 'Prao Sky Blue', V. 'Sansai Blue',	
37. QL (d)	Petal colour (Nos.)	Single	1	V. 'PAT D' (Purple), V. 'KS.SD'(Violet), V. 'Sansai Blue' (Violet) V. 'Pakchong Blue' (Violet)	VG
		Double	3	V. 'Prao Sky Blue' (Violet & Purple) V. 'Pures Wax' (Violet & Purple) V. 'Roberts Delight Blue' (Violet & Purple)	
		Triple or more	5	V. 'Motes Indigo' (White, Green & Violet) V. 'RBSD Black', (Purple, White & Violet)	
38. * QL (d)	Petal colour pattern	Uniform	1	--	VG
		Spotted	3	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Roberts Delight Blue'	
		Blotched	5	--	
		Streaked/ Striped	7	--	
		Tessellated	9	V. 'Prao Sky Blue' V. 'KS.SD', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue'	
39. QN (c)	Lip length	Small (<1.5cm)	1	--	MG
		Medium (1.5-3.0 cm)	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	

		Large (>3.0cm)	5	--	
40. QN (c)	Lip width	Narrow (<1cm)	1	V. 'Sansai Blue'	MG
		Medium (1-2cm)	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Broad (>2cm)	5	--	
41. * (+) PQ (c)	Lip: mid-lobe shape	Ovate	1	--	VS
		Lanceolate	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Roberts Delight Blue'	
		Orbicular	5	--	
42. (+) PQ (c)	Lip: lateral- lobe shape	Ovate	1	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Roberts Delight Blue'	VS
		Lanceolate	3	V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue',	
		Orbicular	5	--	
43. (+) PQ (c)	Lip curvature	Straight	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VG
		Deflexed with straight apex	3	--	
		Deflexed with incurved apex	5	--	
44. (+)	Lip apex	Acute	1	--	VG
		Obtuse	3	--	

PQ (c)		Bilobed	5	V. 'Pures Wax', V. 'PAT D', V. 'KS.SD', V. 'Prao Sky Blue', V. 'RBSD Black', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
45. PQ (c)	Keels No.	Absent	1	--	VG
		Few (< 2)	3	--	
		Medium (2-3)	5	V. 'KS.SD', V. 'RBSD Black',	
		Many (>3)	7	V. 'Pures Wax', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
46. PQ (c)	Lip surface	Glabrous	1	V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VS
		Pubescent	3	--	
47. QL (d)	Lip colour (Nos.)	Single	1	V. 'KS.SD', (violet) V. 'Prao Sky Blue', (violet) V. 'Pures Wax', (violet) V. 'Motes Indigo', (violet)	VG
		Double	3	V. 'RBSD Black' (purple & blue) V. 'PAT D', (purple & blue) V. 'Sansai Blue', (purple & violet) V. 'Pakchong Blue'(violet & blue)	
		Triple or more	5	V. 'Roberts Delight Blue' (purple, yellow & blue)	
48. *	Lip colour pattern	Uniform	1	--	VG
		Spotted	3	V. 'RBSD Black',	

QL (d)				V. 'Motes Indigo'	
		Blotch	5	--	
		Streaked/Striped		V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Tessellated	7	--	
49. * QN (c)	Column Length	Short (<0.5cm)	1	--	MS
		Medium (0.5-1.0cm)	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Long (>1.0cm)	5	--	
50. QL (e)	Column colour pattern	Uniform	1	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	VS
		Spotted	3	--	
		Blotched	5	--	
		Streaked/Striped	7	--	
51. * QN (c)	Pedicel length (with ovary)	Small (<2cm)	1	--	MS
		Medium (2-4cm)	3	--	
		Large (>4cm)	5	V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
52.	Spur type	Saccate	1	--	VG

* (+) PQ (c)		Conical	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Sansai Blue', V. 'Motes Indigo', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Cylindric	5	--	
		Tubular	7	--	
53. * QN (c)	Spur length	Short (<0.5cm)	1	--	MS
		Medium (0.5-1.0cm)	3	V. 'KS.SD', V. 'Pures Wax', V. 'RBSD Black', V. 'PAT D', V. 'Pakchong Blue', V. 'Roberts Delight Blue'	
		Long (>1.0cm)	5	V. 'Prao Sky Blue', V. 'Sansai Blue', V. 'Motes Indigo'	
54. * PQ	Flowering season	Winter	1	V. 'Pakchong Blue'	VG
		Spring	3	V. 'KS.SD', V. 'Prao Sky Blue', V. 'Pures Wax'	
		Summer	5	V. 'Sansai Blue', V. 'Prao Sky Blue'	
		Rainy	7	V. 'Motes Indigo', V. 'PAT D', V. 'RBSD Black', V. 'Roberts Delight Blue'	

## VIII. Explanations on the Table of Characteristics

### 8.1 Guidelines for recording the observations of vegetative and flowering characteristics

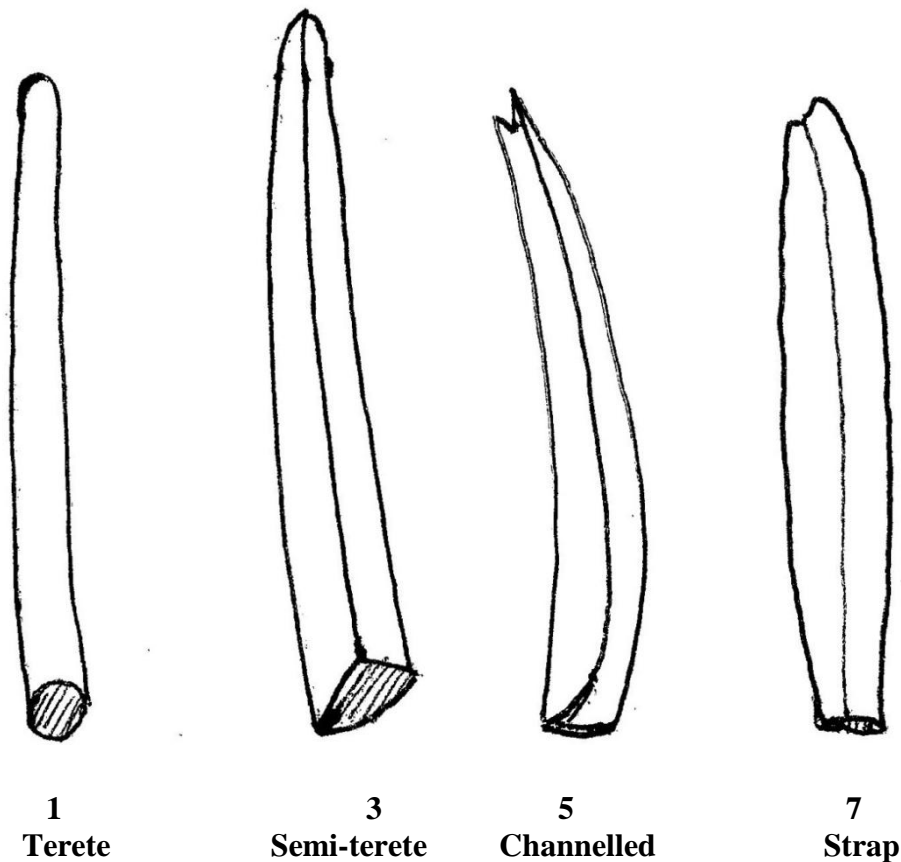
Characteristics indicated with (a), (b), (c), (d) and (e) in the first column of the Table of characteristics shall be examined as indicated below:

- (a) Observations on the leaf, stem and internode length shall be made on the flowering plants.

- (b) Observations on the inflorescence and the flower shall be made at the time when 50% of the flowers on the inflorescence have opened, on the most recently fully opened flower on the inflorescence before the color starts to fade.
- (c) Observations on the length and width of the flower and parts of the flower shall be made on the extended organ.
- (d) Observations on the color of the sepal, the petal and the lip shall be made on the outer side and inner side at apex, mid and base portion.
- (e) Observations on the colour of column shall be made on the outer side and inner side at apex, mid and basal region.

## 8.2: Explanations for individual characteristics

### Characteristics 4: Leaf type



**Characteristics 7 : Apex of leaf**



**1**  
**Bilobed**

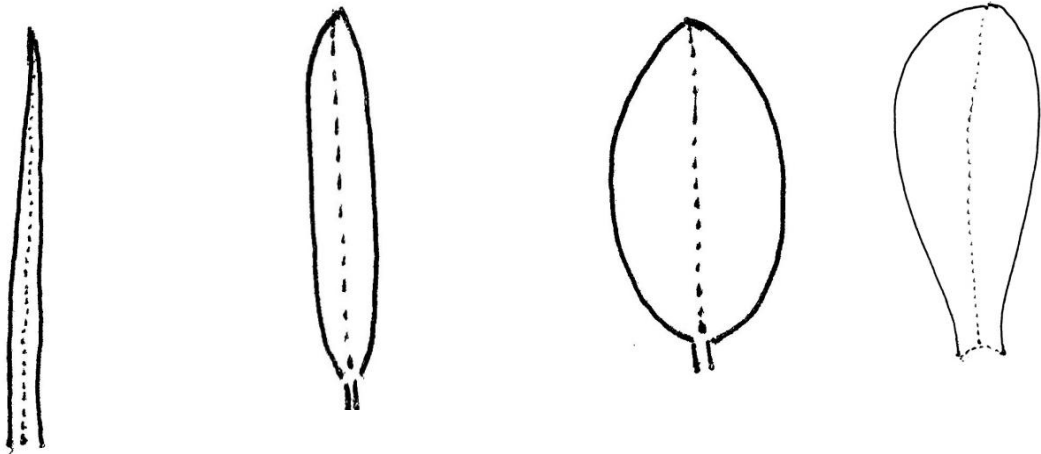
**3**  
**Retuse**

**5**  
**Tridentate**

**7**  
**Praemorse**

**9**  
**Truncate**

**Characteristics 23 & 27: Dorsal sepal, Lateral sepal shape**



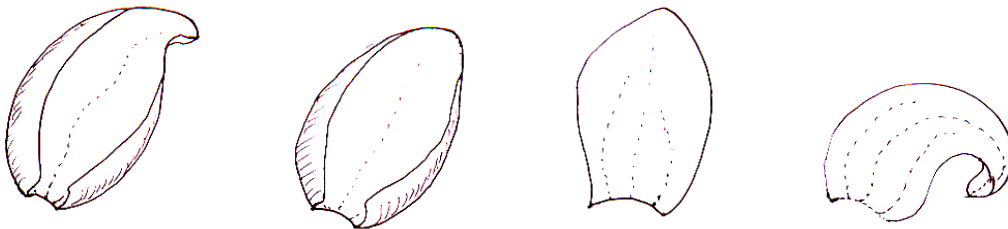
**1**  
**Linear**

**3**  
**Oblong**

**5**  
**Elliptic**

**7**  
**Obovate**

**Characteristics 24 & 28: Dorsal sepal, lateral sepal curvature**



**1**  
**Incurved with  
deflexed apex**

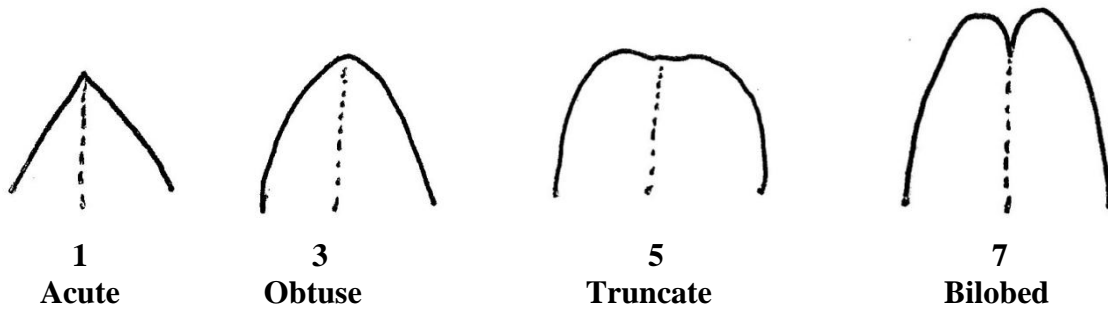
**3**  
**Incurved with  
straight apex**

**5**  
**Straight**

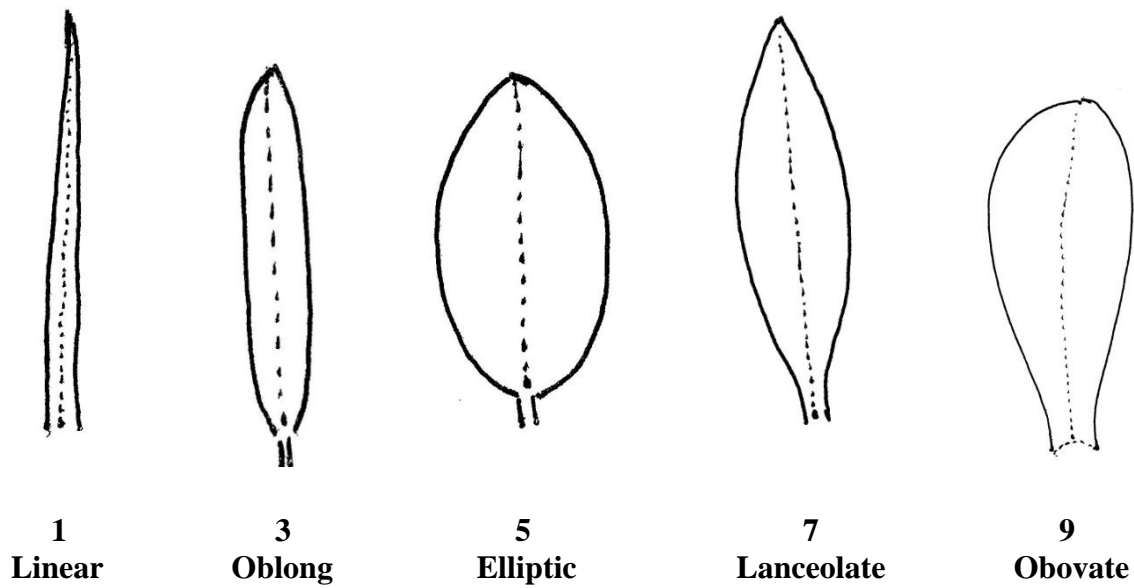
**7**  
**Deflexed**



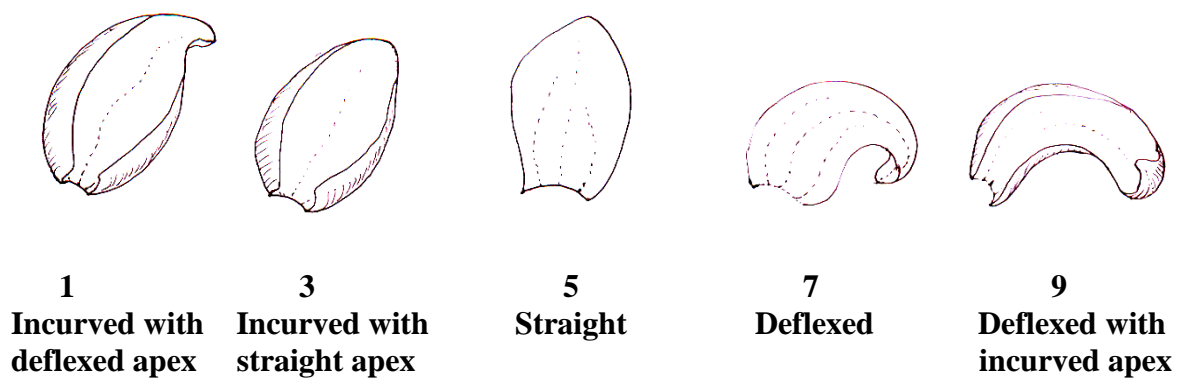
**Characteristics 25, 29 & 35: Dorsal sepal, lateral sepal, petal apex**



**Characteristics 33: Petal shape**



**Characteristics 34 : Petal curvature**



**Characteristics 36 : Petal margin**



**1**  
**Entire**

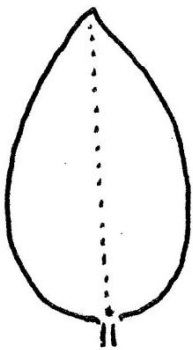


**3**  
**Undulate**



**5**  
**Erose**

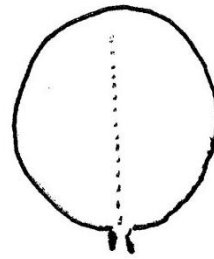
**Characteristics 41 & 42 : Lip mid-lobe and lateral lobe shape**



**1**  
**Ovate**

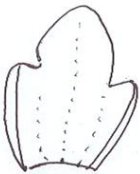


**3**  
**Lanceolate**

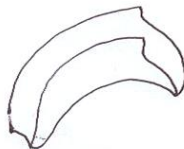


**5**  
**Orbicular**

**Characteristics 43: Lip mid-lobe and lateral lobe curvature**



**1**  
**Straight**



**3**  
**Deflexed with straight apex**

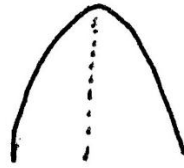


**5**  
**Deflexed with incurved apex**

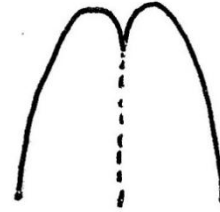
**Characteristics 44: Lip apex**



**1**  
**Acute**

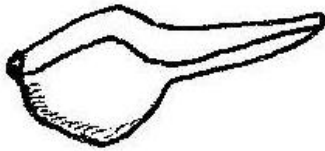


**3**  
**Obtuse**

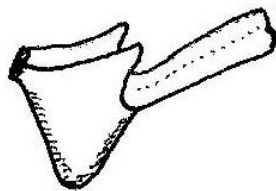


**5**  
**Bilobed**

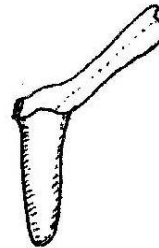
**Characteristics 52: Spur type**



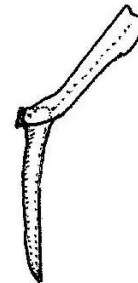
**1**  
**Saccate**



**3**  
**Conical**



**5**  
**Cylindric**



**7**  
**Tubular**

**IX. Name of DUS Test Centre**

<b>Nodal DUS Centre</b>	<b>Other Test Centre</b>
National Research Centre for Orchids, Pakyong-737106, Sikkim	1. State Forest Research Institute, Chimpu, Itanagar, Arunachal Pradesh  2. College of Horticulture, Kerala Agricultural University, Trichur

## **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. 

<b>E1</b>	<b>ZM4</b>	<b>07</b>	<b>36</b>
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 filed on **21/05/2007** by **Ms. Malathi Lakshmikumar, M/s Lakshmikumar & Sridharan, B 6/10, Safdarjung Enclave, New Delhi-110029**, on behalf of **Monsanto India Limited, 5<sup>th</sup> Floor, Ahura Centre, 96, Mahakali Caves Road, Andheri (East), Mumbai-400093, India** for a extant (**Variety of Common Knowledge**) plant variety of crop **Maize (*Zea mays* L.)** having denomination **MIM 002**, 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 MIM 002:**

**Applicant** : Monsanto India Limited  
**Address of the Applicant** : 5<sup>th</sup> Floor, Ahura Centre, 96, Mahakali Caves Road,  
Andheri (East), Mumbai-400093, India  
**Nationality of Applicant** : Indian  
**Application details**  
**a. Number** : 

<b>E1</b>	<b>ZM4</b>	<b>07</b>	<b>36</b>
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**b. Date of receipt** : 21/05/2007  
**c. Date of acceptance** : 13/07/2011  
**Crop (Taxonomical Lineage)** : Maize (*Zea mays* L.)  
**Denomination** : MIM 002

**Type of Variety** : Extant (Variety of Common Knowledge)

**Classification of Variety** : Hybrid

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : (PA2121 x PA2122) x PA3003

**Name of Reference Varieties** : C900M and Allrounder

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Tassel: Time of anthesis	Medium [HKI 323]
Ear: Time of silk emergence	Medium [HKI 323]
Ear: Anthocyanin colouration of silk	Absent [HKI 1025]
Plant: Type	Medium [HM 4]
Ear: Type of grain	Flint [HKI 1105]
<b>B. Distinct Characteristics:</b> <b>MIM 002</b> has distinguishing characters like long plant length, curved attitude of lateral branches (in lower third of tassel), presence of anthocyanin colouration of silk, medium ear diameter without husk, medium number of rows of grain in ear, orange ear colour on top of grain, high shelling percentage and large kernel weight.	

<b>C. Reference varieties:</b>
<b>1. C900M:</b> It has distinguishing characters like very long plant length, straight attitude of lateral branches (in lower third of tassel), presence of anthocyanin colouration of silk, large ear diameter without husk, many number of rows of grain in ear, red orange ear colour on top of grain, moderate shelling percentage and medium kernel weight.
<b>2. Allrounder:</b> It has distinguishing characters like very long plant length, straight attitude of lateral branches (in lower third of tassel), absence of anthocyanin colouration of silk, large ear diameter without husk, many number of rows of grain in ear, yellow orange ear colour on top of

grain, moderate shelling percentage and medium kernel weight.

**D. Date of commercialization of the variety**

Commercialized since 28/08/2000 as Hishell.

**E. Photographs:** (See figure 01)

02. Application No.

**N24**

**ZM16**

**08**

**202**

filed on **12/03/2008** by **Project**

**Coordinator, Directorate of Maize Research, Pusa Campus, New Delhi-110012**, on behalf of **Indian Council of Agricultural Research, Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi - 110014, India** for a **new plant variety** of crop **Maize (*Zea mays* L.)** having denomination **JAWAHAR POP CORN-11**, 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 JAWAHAR POP CORN-11:**

**Applicant** : Indian Council of Agricultural Research

**Address of the Applicant** : Krishi Bhawan, Dr. Rajendra Prasad Road,  
New Delhi - 110014, India

**Nationality of Applicant** : Indian

**Application details**

a. Number

: **N24** **ZM16** **08** **202**

b. Date of receipt

: 12/03/2008

c. Date of acceptance : 29/08/2011

**Crop (Taxonomical Lineage)** : Maize (*Zea mays* L.)

**Denomination** : JAWAHAR POP CORN-11

**Type of Variety** : New

**Classification of Variety** : Typical

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : Local germplasm collection

**Name of Reference Varieties** : Local

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Tassel: Time of anthesis	Medium [HKI 323]
Ear: Time of silk emergence	Medium [HKI 323]
Ear: Anthocyanin colouration of silk	Absent [HKI 1025]
Plant: Length	Medium [HM 4]
Ear: Type of grain	Flint [HKI 1105]
<p><b>B. Distinct Characteristics:</b></p> <p><b>JAWAHAR POP CORN-11</b> has distinguishing characters like absence of stem anthocyanin colouration of brace roots, medium time of anthesis, sparse density of spikelets, medium time of silk emergence, medium plant length and medium ear placement.</p>	

<p><b>C. Reference varieties:</b></p> <p><b>1. Local:</b> It has distinguishing characters like presence of stem anthocyanin colouration of brace roots, late time of anthesis, dense density of spikelets, late time of silk emergence, long plant length and high ear placement.</p>
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<b>D. Date of commercialization of the variety</b>	Commercialized since 20/07/2007.
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**E. Photographs:** (See figure 02)

03. Application No. 

N17	ZM33	09	343
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 filed on **24/08/2009** by **Project Coordinator, Directorate of Maize Research, Pusa Campus, New Delhi-110012**, on behalf of **Indian Council of Agricultural Research, Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi - 110014, India** for a **new plant variety** of crop **Maize (*Zea mays* L.)** having denomination **VIVEK SANKUL MAKKA 37**, 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 VIVEK SANKUL MAKKA 37:**

**Applicant** : Indian Council of Agricultural Research  
**Address of the Applicant** : Krishi Bhawan, Dr. Rajendra Prasad Road,  
New Delhi - 110014, India  
**Nationality of Applicant** : Indian  
**Application details**  
**a. Number** : 

N17	ZM33	09	343
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**b. Date of receipt** : 24/08/2009  
**c. Date of acceptance** : 21/07/2011  
**Crop (Taxonomical Lineage)** : Maize (*Zea mays* L.)  
**Denomination** : VIVEK SANKUL MAKKA 37  
**Type of Variety** : New

**Classification of Variety** : Typical

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : VL Makka 16, Pop 31 C4 HS Bulk (Alm), VL 87, VL 89, VL 90, D 831 and D 941

**Name of Reference Varieties** : Surya

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Tassel: Time of anthesis	Early [HKI 1025]
Ear: Time of silk emergence	Early [HKI 1025]
Ear: Anthocyanin colouration of silk	Present [HKI 323]
Plant: Length	Long [HQPM 1]
Ear: Type of grain	Yellow flint [HKI 1105]
<b>B. Distinct Characteristics:</b>	
<p><b>VIVEK SANKUL MAKKA 37</b> has distinguishing characters like wide leaf angle between blade and stem (on leaf just above upper ear), early time of anthesis, presence of anthocyanin colouration at base of glume of tassel, presence of anthocyanin colouration of silk, medium length of main axis above lowest side branch and broad width of blade.</p>	

<b>C. Reference varieties:</b>	
<p><b>1. Surya:</b> It has distinguishing characters like small leaf angle between blade and stem (on leaf just above upper ear), medium time of anthesis, absence of anthocyanin colouration at base of glume of tassel, absence of anthocyanin colouration of silk, long length of main axis above lowest side branch and medium width of blade.</p>	

<b>D. Date of commercialization of the variety</b>	Not commercialized.
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**E. Photographs:** (See figure 03)

04. Application No. 

<b>E18</b>	<b>OS47</b>	<b>09</b>	<b>383</b>
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 filed on 22/09/2009 by Mr. I.S. Halakude, Research Manager, Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India, on behalf of Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India for a extant (Variety of common Knowledge) plant variety of crop Rice (*Oryza sativa* L.) having denomination Saguna (NR-28), 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 Saguna (NR-28):**

**Applicant** : Nirmal Seeds Private Limited  
**Address of the Applicant** : P.O. Box-63, Bhadgaon Road,  
Pachora - 424201, District - Jalgaon (MS), India  
**Nationality of Applicant** : Indian

**Application details**

<b>E18</b>	<b>OS47</b>	<b>09</b>	<b>383</b>
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**a. Number** :  
**b. Date of receipt** : 22/09/2009  
**c. Date of acceptance** : 26/05/2011

**Crop (Taxonomical Lineage)** : Rice (*Oryza sativa* L.)  
**Denomination** : Saguna (NR-28)  
**Type of Variety** : Extant (Variety of common Knowledge)  
**Classification of Variety** : Typical  
**Previously proposed** : Not applicable

**denomination**

**Name of Parental Material** : Acc-9 x Acc-71/HD Selection

**Name of Reference Varieties** : BPT-5204

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Basal leaf: Sheath colour	Green [Rasi, Heera]
Time of heading (50% of plants with panicle)	Medium [Vikas, Triguna]
Stem : Length (excluding panicles; excluding floating rice)	Short [PR 106, Vajram]
Decorticate grain: length	Short [Kushal]
Decorticate grain: Shape (in lateral view)	Short slender [Dubraj]
Decorticate grain: Colour	White [Sugandhamati]
Endosperm: Content of amylose	Medium [Taroari Basmati]
Decorticate grain: Aroma	Absent [Jaya]

**B. Distinct Characteristics:**

**Saguna (NR-28)** has distinguishing characters like dark intensity of green colour of leaf, medium time of 50 % heading, semi erect attitude of blade, medium number of panicles per plant and short slender decorticated grain shape.

**C. Reference varieties:**

**1. BPT-5204:** It has distinguishing characters like medium intensity of green colour of leaf, late time of 50 % heading, erect attitude of blade, few numbers of panicles per plant and medium slender decorticated grain shape.

<b>D. Date of commercialization of the variety</b>	Commercialized since 13/05/2008.
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**E. Photographs:** (See figure 04)

05. Application No. 

N28	OS48	09	384
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 filed on 22/09/2009 by Mr. I.S. Halakude, Research Manager, Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India, on behalf of Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India for a new plant variety of crop Rice (*Oryza sativa* L.) having denomination Vaishnavi (NR-241), 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 Vaishnavi (NR-241):**

**Applicant** : Nirmal Seeds Private Limited  
**Address of the Applicant** : P.O. Box-63, Bhadgaon Road,  
Pachora - 424201, District - Jalgaon (MS), India  
**Nationality of Applicant** : Indian  
**Application details**  
**a. Number** : 

N28	OS48	09	384
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**b. Date of receipt** : 22/09/2009  
**c. Date of acceptance** : 26/05/2011  
**Crop (Taxonomical Lineage)** : Rice (*Oryza sativa* L.)  
**Denomination** : Vaishnavi (NR-241)  
**Type of Variety** : New  
**Classification of Variety** : Typical  
**Previously proposed denomination** : Not applicable

**Name of Parental Material** : Acc-84 x Acc-249-1-2/HD Selection

**Name of Reference Varieties** : MTU-1010

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Basal leaf: Sheath colour	Green [Rasi, Heera]
Time of heading (50% of plants with panicle)	Medium [Vikas, Triguna]
Stem : Length (excluding panicles; excluding floating rice)	Short [PR 106, Vajram]
Decorticate grain: length	Short [Kushal]
Decorticate grain: Shape (in lateral view)	Medium slender [Samba Mahsuri]
Decorticate grain: Colour	Light brown [---]
Endosperm: Content of amylose	Medium [Taroari Basmati]
Decorticate grain: Aroma	Absent [Jaya]

**B. Distinct Characteristics:**

**Vaishnavi (NR-241)** has distinguishing characters like dark intensity of green colour of leaf, medium time of 50 % heading, semi erect attitude of blade, short decorticated grain length, medium number of panicles per plant and absence of awns.

**C. Reference varieties:**

**1. MTU-1010:** It has distinguishing characters like medium intensity of green colour of leaf, medium time of 50 % heading, erect attitude of blade, long decorticated grain length, few number of panicles per plant and presence of awns.

<b>D. Date of commercialization of the variety</b>	Not commercialized.
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**E. Photographs:** (See figure 5a and b)

06. Application No. 

N29	OS49	09	385
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 filed on 22/09/2009 by Mr. I.S. Halakude, Research Manager, Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India, on behalf of Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India for a new plant variety of crop Rice (*Oryza sativa L.*) having denomination Nirmal-30 (NPH-30), 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 Nirmal-30 (NPH-30):**

**Applicant** : Nirmal Seeds Private Limited  
**Address of the Applicant** : P.O. Box-63, Bhadgaon Road,  
Pachora - 424201, District - Jalgaon (MS), India  
**Nationality of Applicant** : Indian  
**Application details**  
**a. Number** : 

N29	OS49	09	385
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**b. Date of receipt** : 22/09/2009  
**c. Date of acceptance** : 26/05/2011  
**Crop (Taxonomical Lineage)** : Rice (*Oryza sativa L.*)  
**Denomination** : Nirmal-30 (NPH-30)  
**Type of Variety** : New  
**Classification of Variety** : Hybrid  
**Previously proposed denomination** : Not applicable

Name of Parental Material : IR-58025A x NPR-15

Name of Reference Varieties : KRH-2

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Basal leaf: Sheath colour	Green [Rasi, Heera]
Time of heading (50% of plants with panicle)	Medium [Vikas, Triguna]
Stem : Length (excluding panicles; excluding floating rice)	Medium [Sabita]
Decorticate grain: length	Long [Ratna, Triguna]
Decorticate grain: Shape (in lateral view)	Long slender [Krishna Hamsa]
Decorticate grain: Colour	Light brown [---]
Endosperm: Content of amylose	Medium [Taroari Basmati]
Decorticate grain: Aroma	Absent [Jaya]
<b>B. Distinct Characteristics:</b> <b>Nirmal-30 (NPH-30)</b> has distinguishing characters like dark intensity of green colour of leaf, medium time of 50 % heading, semi erect attitude of blade and medium number of panicles per plant.	

<b>C. Reference varieties:</b> <b>1. KRH-2:</b> It has distinguishing characters like light intensity of green colour of leaf, early time of 50 % heading, erect attitude of blade and few numbers of panicles per plant.
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<b>D. Date of commercialization of the variety</b>	Not commercialized.
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**E. Photographs:** (See figure 06)

07. Application No. 

E21	OS52	09	397
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 filed on 22/09/2009 by Mr. I.S. Halakude, Research Manager, Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon



**Road, Pachora - 424201, District - Jalgaon (MS), India, on behalf of Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India** for a extant (**Variety of common Knowledge**) **plant variety** of crop **Rice (*Oryza sativa L.*)** having denomination **Parvati (NR-48)**, 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 Parvati (NR-48):**

**Applicant** : Nirmal Seeds Private Limited  
**Address of the Applicant** : P.O. Box-63, Bhadgaon Road,  
Pachora - 424201, District - Jalgaon (MS), India  
**Nationality of Applicant** : Indian  
**Application details**  
a. Number : 

<b>E21</b>	<b>OS52</b>	<b>09</b>	<b>397</b>
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b. Date of receipt : 22/09/2009  
c. Date of acceptance : 26/05/2011  
**Crop (Taxonomical Lineage)** : Rice (*Oryza sativa L.*)  
**Denomination** : Parvati (NR-48)  
**Type of Variety** : Extant (Variety of common Knowledge)  
**Classification of Variety** : Typical  
**Previously proposed denomination** : Not applicable  
**Name of Parental Material** : Acc-91 x Acc-351/HD Selection

Name of Reference Varieties : MTU-1010

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Basal leaf: Sheath colour	Green [Rasi, Heera]
Time of heading (50% of plants with panicle)	Medium [Vikas, Triguna]
Stem : Length (excluding panicles; excluding floating rice)	Medium [Sabita]
Decorticate grain: length	Medium [Samba Mahsuri]
Decorticate grain: Shape (in lateral view)	Long slender [Kasturi]
Decorticate grain: Colour	White [Sugandhamati]
Endosperm: Content of amylose	Medium [Taroari Basmati]
Decorticate grain: Aroma	Present [Bas. 370]
<b>B. Distinct Characteristics:</b>	
<b>Parvati (NR-48)</b> has distinguishing characters like dark intensity of green colour of leaf, medium time of 50 % heading, semi erect attitude of blade and erect culm attitude.	

<b>C. Reference varieties:</b>
<b>1. MTU-1010:</b> It has distinguishing characters like medium intensity of green colour of leaf, medium time of 50 % heading, erect attitude of blade and semi erect culm attitude.

<b>D. Date of commercialization of the variety</b>	Commercialized since 20/05/2005.
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**E. Photographs:** (See figure 07a and b)

08. Application No. 

E23	OS54	09	399
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 filed on 22/09/2009 by Mr. I.S. Halakude, Research Manager, Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India, on behalf of Nirmal Seeds Private Limited, P.O. Box - 63, Bhadgaon Road, Pachora - 424201, District - Jalgaon (MS), India

for a **extant (Variety of Common Knowledge) plant variety** of crop **Rice (*Oryza sativa* L.)** having denomination **Sai (NR-241)**, 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 Sai (NR-241):**

**Applicant** : Nirmal Seeds Private Limited

**Address of the Applicant** : P.O. Box-63, Bhadgaon Road,  
Pachora - 424201, District - Jalgaon (MS), India

**Nationality of Applicant** : Indian

**Application details**

a. Number : 

<b>E23</b>	<b>OS54</b>	<b>09</b>	<b>399</b>
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b. Date of receipt : 22/09/2009

c. Date of acceptance : 26/05/2011

**Crop (Taxonomical Lineage)** : Rice (*Oryza sativa* L.)

**Denomination** : Sai (NR-241)

**Type of Variety** : Extant (Variety of Common Knowledge)

**Classification of Variety** : Typical

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : Acc-427 x Acc-431/HD Selection

**Name of Reference Varieties** : BPT-5204

**Variety Description:**

A. Group Characteristics	Remarks, measured values, example varieties, etc.
Basal leaf: Sheath colour	Green [Rasi, Heera]
Time of heading (50% of plants with panicle)	Medium [Vikas, Triguna]
Stem : Length (excluding panicles; excluding floating rice)	Short [PR 106, Vajram]
Decorticate grain: length	Short [Kushal]
Decorticate grain: Shape (in lateral view)	Medium slender [Samba Mahsuri]
Decorticate grain: Colour	Light brown [---]
Endosperm: Content of amylose	Medium [Taroari Basmati]
Decorticate grain: Aroma	Absent [Jaya]
<p><b>B. Distinct Characteristics:</b></p> <p><b>Sai (NR-241)</b> has distinguishing characters like medium intensity of green colour of leaf, late time of 50 % heading, erect attitude of blade, erect culm attitude and short slender decorticated grain shape.</p>	
<p><b>C. Reference varieties:</b></p> <p><b>1. BPT-5204:</b> It has distinguishing characters like medium intensity of green colour of leaf, late time of 50 % heading, erect attitude of blade, semi erect culm attitude and medium slender decorticated grain shape.</p>	
<b>D. Date of commercialization of the variety</b>	Commercialized since 28/05/2008.

**E. Photographs:** (See figure 08a and b)

09. Application No. 

E21	PG29	09	415
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 filed on **01/10/2009** by Ms. **Malathi Lakshmikumar, M/S Lakshmikumar & Sridharan, B 6/10, Safdarjung Enclave, New Delhi – 110 025** on behalf of **Bayer Biosciences Private Limited, 8-1-39, Qutub Shahi Tombs Roads, Tolichowki, Hyderabad-500 008, Andhra Pradesh (India)** for a extant (variety of common knowledge) plant variety of crop Pearl Millet [*Pennisetum glaucum* (L.)

R.Br.] having denomination **BPM 904**, 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 BPM 904:**

**Applicant** : Bayer Biosciences Private Limited  
**Address of the Applicant** : 8-1-39, Qutub Shahi Tombs Roads, Tolichowki,  
Hyderabad-500 008, Andhra Pradesh (India)  
**Nationality of Applicant** : Indian  
**Application details**  
a. Number : 

<b>E21</b>	<b>PG29</b>	<b>09</b>	<b>415</b>
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b. Date of receipt : 01/10/2009  
c. Date of acceptance : 01/08/2011  
**Crop (Taxonomical Lineage)** : Pearl Millet [*Pennisetum glaucum* (L.) R.Br.]  
**Denomination** : BPM 904  
**Type of Variety** : Extant (Variety of Common Knowledge)  
**Classification of Variety** : Hybrid  
**Previously proposed denomination** : Not applicable  
**Name of Parental Material** : 4185F x M10395  
**Name of Reference Varieties** : 86M52 and ICMH356

**Variety Description:**

A. Group Characteristics	Remarks measured values, example varieties, etc.
Plant: Time of spike emergence	Very early [H 77/833-2, HHB 67I]

Anther: Colour	Yellow [HHB 94, G 73-107, RHRBI 458]
Spike: Shape	Conical [842B, ICMP 423, ICMH 356]
Seed: Colour	Grey [842 B, D 23]
Seed: Shape	Obovate [842 B, Pusa 23]
<b>B. Distinct Characteristics:</b>	
<p><b>BPM 904</b> has distinguishing characters like presence of node pubescence, purple node pigmentation, purple internode pigmentation, presence of bristles on spike, purple bristle colour, conical spike shape and obovate seed shape.</p>	
<b>C. Reference varieties:</b>	
<p><b>1. 86M52:</b> It has distinguishing characters like absence of node pubescence, green node pigmentation, green internode pigmentation, absence of bristles on spike, candle spike shape and globular seed shape.</p> <p><b>2. ICMH356:</b> It has distinguishing characters like presence of node pubescence, purple node pigmentation, whitish internode pigmentation, absence of bristles on spike, conical spike shape and globular seed shape.</p>	
<b>D. Date of commercialization of the variety</b>	Commercialized since 07/06/2008 as XL51.

**E. Photographs:** (See figures 09)

10. Application No. 

<b>E29</b>	<b>SB53</b>	<b>09</b>	<b>433</b>
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 filed on **29/10/2009** by **Ms. Malathi Lakshmikumaran, M/S Lakshmikumaran & Sridharan, B 6/10, Safdarjung Enclave, New Delhi – 110 025** on behalf of **Bayer Biosciences Private Limited, 8-1-39, Qutub Shahi Tombs Roads, Tolichowki, Hyderabad-500 008, Andhra Pradesh (India)** for a extant (**variety of common knowledge**) **plant variety** of crop **Sorghum** [*Sorghum bicolor* L. Moench] having denomination **BGS 802**, 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 BGS 802:**

**Applicant** : Bayer Biosciences Private Limited  
**Address of the Applicant** : 8-1-39, Qutub Shahi Tombs Roads, Tolichowki,  
Hyderabad-500 008, Andhra Pradesh (India)  
**Nationality of Applicant** : Indian  
**Application details**  
a. Number : 

<b>E29</b>	<b>SB53</b>	<b>09</b>	<b>433</b>
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b. Date of receipt : 29/10/2009  
c. Date of acceptance : 01/08/2011  
**Crop (Taxonomical Lineage)** : Sorghum [*Sorghum bicolor* L. Moench]  
**Denomination** : BGS 802  
**Type of Variety** : Extant (Variety of Common Knowledge)  
**Classification of Variety** : Hybrid  
**Previously proposed denomination** : Not applicable  
**Name of Parental Material** : RSA98012 x RSR97038  
**Name of Reference Varieties** : CSH15R and M35-1

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks measured values, example varieties, etc.</b>
Kharif or Rabi adaptation	<i>Rabi</i>
Plant: Time of panicle emergence (50% of the plants with complete panicle emergence)	Medium [CSH 16]
Plant: Total height at maturity	Long [GJ 39]
Panicle: Shape	Panicle broader in lower part [MAN T1]

Caryopsis: Colour after threshing	Yellow orange [27B]
<b>B. Distinct Characteristics:</b> BGS 802 has distinguishing characters like absence of arista formation in lemma and yellow orange colour of caryopsis after threshing.	
<b>C. Reference varieties:</b> 1. <b>CSH15R:</b> It has distinguishing characters like presence of arista formation in lemma and yellow orange colour of caryopsis after threshing. 2. <b>M35-1:</b> It has distinguishing characters like presence of arista formation in lemma and yellow white colour of caryopsis after threshing.	
<b>D. Date of commercialization of the variety</b>	Commercialized since 09/04/2007 as 8712.

**E. Photographs:** (See figures 10)

11. Application No. 

N36	HA51	10	315
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 filed on 11/10/2010 by **Kaveri Seed Company Limited, 513-B, 5<sup>th</sup> Floor, Minerva Complex, S. D. Road, Secunderabad-500 003 (A.P.)** on behalf of -----NA-----for a **new plant variety** of crop **Sunflower (*Helianthus annuus* L.)** having denomination **KSF-294A**, the specification including 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 KSF-294A:**

**Applicant** : Kaveri Seed Company Limited.

**Address of the Applicant** : 513-B, 5<sup>th</sup> Floor, Minerva Complex,



S. D. Road, Secunderabad-500 003 (A.P.)

**Nationality of Applicant** : Indian

**Application details**

**a. Number** : 

<b>N36</b>	<b>HA51</b>	<b>10</b>	<b>315</b>
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**b. Date of receipt** : 11/10/2010

**c. Date of acceptance** : 03/06/2011

**Crop (Taxonomical Lineage)** : Sunflower (*Helianthus annuus* L.)

**Denomination** : KSF-294A

**Type of Variety** : New

**Classification of Variety** : Typical

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : Strain A (KSF 115) & Strain B (KSF-294)

**Name of Reference Varieties** : 234A & 17A

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Plant: Time of 50 % flowering	Late [-]
Leaf: Serration	Medium [KBSH-42]
Plant : Height (cm)	Medium [BSH 1]
Plant : Branching	Absent [Morden]
Seed coat: Stripes	Present [Surya]

**B. Distinct Characteristics:**

**KSF-294A** has distinguishing characters like late time of 50% flowering (days), turned down head attitude, convex head shape of grain side and short seed length (cm).

**C. Reference varieties:**

**234A:** It has distinguishing characters like early time of 50% flowering (days), half turned down head attitude, flat head shape of grain side and medium seed length (cm).

**17A:** It has distinguishing characters like medium time of 50% flowering (days), vertical head attitude, flat head shape of grain side and medium seed length (cm).

**D. Date of commercialization of the variety**

Not commercialized

**E. Photographs:** (See figure 11)

12. Application No. 

<b>N1</b>	<b>JO1</b>	<b>10</b>	<b>318</b>
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 filed on **18/10/2010** by **Indian Council of Agricultural Research (ICAR), Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-110 014** on behalf of -----NA-----for a **new plant variety** of crop **Jute** (*Corchorus olitorius* L.) having denomination **Sourav (CO-58)**, the specification including 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 Sourav (CO-58):**

**Applicant** : Indian Council of Agricultural Research (ICAR),

**Address of the Applicant** : Krishi Bhawan, Dr. Rajendra Prasad Road,  
New Delhi-110 014

**Nationality of Applicant** : Indian

**Application details**

**a. Number**

: 

<b>N1</b>	<b>JO1</b>	<b>10</b>	<b>318</b>
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**b. Date of receipt**

: 18/10/2010

**c. Date of acceptance**

: 18/05/2011

**Crop (Taxonomical Lineage)**

: Jute (*Corchorus olitorius* L.)

**Denomination**

: Sourav (CO-58)

**Type of Variety**

: New

**Classification of Variety**

: Typical

**Previously proposed denomination**

: Not applicable

**Name of Parental Material**

: TJ-40 x Tanganyika-1

**Name of Reference Varieties**

: JRO524, JRO8432, JRO7835, JRO128 & JRO632

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Seedling: Premature flowering resistance	Present [JRO 524]
Stem: Colour	Green [JRO 524]
Days to 50% flowering(50%of the plants with at least one open flower)	Late [Sudan Green]
<b>B. Distinct Characteristics:</b>	
Sourav (CO-58) has distinguishing characters like present premature flowering resistance, lanceolate leaf shape, medium plant height, very fine fibre fineness, good fibre strength, absent basal stem root primordia, absent pod dehiscence, small seed size and black seed colour.	

**C. Reference varieties:**

**1. JRO 524:** It has distinguishing characters like present premature flowering resistance, ovate-lanceolate leaf shape, medium plant height, coarse fibre fineness, fairly good fibre strength, absent basal stem root primordia, absent pod dehiscence, small seed size and black seed colour.

**2. JRO 8432:** It has distinguishing characters like present premature flowering resistance, ovate-lanceolate leaf shape, medium plant height, fine fibre fineness, good fibre strength, absent basal stem root primordia, absent pod dehiscence, medium seed size and black seed colour.

**3. JRO 7835:** It has distinguishing characters like present premature flowering resistance, ovate-lanceolate leaf shape, tall plant height, coarse fibre fineness, good fibre strength, present basal stem root primordia, absent pod dehiscence, small seed size and black seed colour.

**4. JRO 128:** It has distinguishing characters like present premature flowering resistance, ovate-lanceolate leaf shape, medium plant height, very fine fibre fineness, good fibre strength, absent basal stem root primordia, absent pod dehiscence, small seed size and black seed colour.

**5. JRO 632:** It has distinguishing characters like absent premature flowering resistance, ovate-lanceolate leaf shape, tall plant height, fine fibre fineness, fairly good fibre strength, absent basal stem root primordia, present pod dehiscence, medium seed size and black steel grey colour.

<b>D. Date of commercialization of the variety</b>	Commercialized since 29/01/2010
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**E. Photographs:** (See figure 12a and b)

13. Application No. 

<b>N38</b>	<b>PG38</b>	<b>10</b>	<b>319</b>
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 filed on **19/10/2010** by **Malathi Lakshmikumaran, Lakshmikumaran & Sridharan, B6/10, Safdarjung Enclave, New Delhi-110 029** on behalf of **Bayer BioScience Pvt. Ltd., Ohri' Tech Park, Plot No.13, Survey No.64/2(New), Software Units Layout, Madhapur, Hyderabad-500 081 (A.P.)** for a new plant

**variety** of crop **Pearl millet** (*Pennisetums glaucum* L.) having denomination **BPM 907**, the specification including 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 BPM 907:**

**Applicant** : Bayer BioScience Pvt. Ltd.,

**Address of the Applicant** : Ohri' Tech Park, Plot No.13,  
Plot No.13, Survey No.64/2(New),  
Software Units Layout, Madhapur,  
Hyderabad-500 081 (A.P.)

**Nationality of Applicant** : Indian

**Application details**

**a. Number** : 

N38	PG38	10	319
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**b. Date of receipt** : 19/10/2010

**c. Date of acceptance** : 08/08/2011

**Crop (Taxonomical Lineage)** : Pearl millet [*Pennisetums glaucum* (L) R.Br.]

**Denomination** : BPM 907

**Type of Variety** : New

**Classification of Variety** : Hybrid

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : ICMA 99111 x M10148

**Name of Reference Varieties** : 9444 & ICMH 356

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Plant: Time of spike emergence	Early [CMH 356]
Anther: Colour	Yellow [HHB 94]
Spike: Shape	Candle [843A]
Seed: Colour	Deep grey [GHB 558]
Seed: Shape	Obovate [842B]
<b>B. Distinct Characteristics:</b> <b>BPM 907</b> has distinguishing characters like absent anthocyanin colouration of first leaf sheath, intermediate plant growth habit, early time of spike emergence, long leaf sheath length, medium blade length, broad leaf blade width, green node pigmentation and internodes pigmentation, complete spike exertion, medium spike length, present spike bristle, green spike bristle colour, candle spike shape, very compact spike density, deep grey seed colour, obovate seed shape and bold seed weight of 1000 grains.	

<b>C. Reference varieties:</b> <b>9444:</b> It has distinguishing characters like present anthocyanin colouration of first leaf sheath, intermediate plant growth habit, very early time of spike emergence, medium leaf sheath length, long leaf blade length, medium leaf blade width, purple node pigmentation and internodes pigmentation, partial spike exertion, medium spike length, absent spike bristle, cylindrical spike shape, compact spike density, grey seed colour, globular seed shape and bold seed weight of 1000 grains. <b>ICMH356:</b> It has distinguishing characters like present anthocyanin colouration of first leaf sheath, spreading plant growth habit, very early time of spike emergence, medium leaf sheath length, medium leaf blade length, narrow leaf blade width, purple node pigmentation, whitish
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plant internodes pigmentation, partial spike exertion, small spike length, absent spike bristle, conical spike shape, semi compact spike density, grey seed colour, globular seed shape and very bold seed weight of 1000 grains.

<b>D. Date of commercialization of the variety</b>	Commercialized since 05/02/2010
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**E. Photographs:** (See figure 13a and b)

14. Application No. 

<b>N43</b>	<b>ZM543</b>	<b>10</b>	<b>323</b>
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 filed on **27/10/2010** by **Kaveri Seed Company Limited, 513-B, 5<sup>th</sup> Floor, Minerva complex, S. D. Road, Secunderabad-500 003 (A.P.)** on behalf of -----NA-----for a **new plant variety** of crop **Maize** (*Zea mays* L.) having denomination **KML 133**, the specification including 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 KML 133:**

**Applicant** : Kaveri Seed Company Limited  
**Address of the Applicant** : 513-B, 5<sup>th</sup> Floor, Minerva complex,  
S. D. Road, Secunderabad-500 003 (A.P.)  
**Nationality of Applicant** : Indian

**Application details**

**a. Number** : 

<b>N43</b>	<b>ZM543</b>	<b>10</b>	<b>323</b>
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**b. Date of receipt** : 27/10/2010

**c. Date of acceptance** : 21/07/2011

**Crop (Taxonomical Lineage)** : Maize (*Zea mays* L.)

**Denomination** : KML 133

**Type of Variety** : New

**Classification of Variety** : Typical

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : KML133 has been developed for base population

**Name of Reference Varieties** : CMS 151 & CMS 145

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Tassel: Time of anthesis	Very early [HKI 335]
Ear: Time of silk emergence (50% plants)	Very early [HKI 335]
Ear: Anthocyanin colouration of silks	Absent [HKI 1025]
Plant : Length (up to flag leaf)	Short [HKI 1348-6-2]
Ear: Type of grain	Flint [HKI 1105]
<b>B. Distinct Characteristics:</b> KML 133 has distinguishing characters like very early tassel time of anthocyanin (on middle third of main axis, 50% of plants), very early ear time of silk emergence (50% plants), short ear length(without husk) and medium ear number of rows of grains.	

<p><b>C. Reference varieties:</b>  <b>CMS 151:</b> It has distinguishing characters like early tassel time of anthocyanin (on middle third of main axis, 50% of plants), early ear time of silk emergence (50% plants), medium ear length (without husk) and many ear numbers of rows of grains.</p>
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**CMS 145:** It has distinguishing characters like early tassel time of anthocyanin (on middle third of main axis, 50% of plants), early ear time of silk emergence (50% plants), medium ear length (without husk) and many ear numbers of rows of grains.

**D. Date of commercialization of the variety**

Not commercialized

**E. Photographs:** (See figure 14)

15. Application No. 

<b>N48</b>	<b>ZM48</b>	<b>10</b>	<b>340</b>
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 filed on **30/11/2010** by **Indian Council of Agricultural Research (ICAR), Krishi Bhawan, Dr. Rajendra Prasad Road, New Delhi-110 014** on behalf of -----NA-----for a **new plant variety** of crop **Maize** (*Zea mays* L.) having denomination **PMH 4** the specification including 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 PMH 4**

**Applicant** : Indian Council of Agricultural Research (ICAR)

**Address of the Applicant** : Krishi Bhawan, Dr. Rajendra Prasad Road,  
New Delhi-110 014

**Nationality of Applicant** : Indian

**Application details**

**a. Number**

: 

<b>N48</b>	<b>ZM48</b>	<b>10</b>	<b>340</b>
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**b. Date of receipt**

: 30/11/2010

**c. Date of acceptance** : 16/09/2011

**Crop (Taxonomical Lineage)** : Maize (*Zea mays* L.)

**Denomination** : PMH 4

**Type of Variety** : New

**Classification of Variety** : Hybrid

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : LM 5 x LM 16

**Name of Reference Varieties** : Malviya Hybrid Makka 2

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Tassel: Time of anthesis	Medium [HKI 323]
Ear: Time of silk emergence (50% plants)	Medium [HKI 323]
Ear: Anthocyanin colouration of silks	Absent [HKI 1025]
Plant : Length	Medium [HM 4]
Ear: Type of grain	Flint [HKI 1105]
<b>B. Distinct Characteristics:</b>	
<p><b>PMH 4</b> has distinguishing characters like wide leaf angle between blade and stem (on leaf just above upper ear), drooping leaf attitude of blade, dense tassel density of spikelets, wide tassel angle between main axis and lateral branches, curved attitude of lateral branches, medium tassel length of main axis above lowest side branch, medium plant length (up to flag leaf), medium leaf width of blade, large ear diameter, conico-cylindrical ear shape, flint ear type of grain, yellow orange with cap ear colour of top of grain and medium kernel 1000 weight.</p>	

**C. Reference varieties:**

**Malviya Hybrid Makka 2:** It has distinguishing characters like small leaf angle between blade and stem (on leaf just above upper ear), straight leaf attitude of blade, sparse tassel density of spikelets, narrow tassel angle between main axis and lateral branches, straight attitude of lateral branches, long tassel length of main axis above lowest side branch, long plant length (up to flag leaf), broad leaf width of blade, medium ear diameter, conico ear shape, semi flint ear type of grain, yellow ear colour of top of grain and large kernel 1000 weght.

**D. Date of commercialization of the variety**

Not commercialized

**E. Photographs:** (See figure 15)

16. Application No. 

<b>E13</b>	<b>LL13</b>	<b>11</b>	<b>31</b>
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 filed on **04/01/2011** by **Ms. Malathi Lakshmikumar, M/s Lakshmikumar & Sridharan, B 6/10, Safdarjung Enclave, New Delhi-110029**, on behalf of **Maharashtra Hybrid Seed Company Limited, Resham Bhavan, 4<sup>th</sup> Floor, 78, Veer Nariman Road, Mumbai-400020, India** for a extant (**Variety of common Knowledge**) **plant variety** of crop **Tomato** (*Lycopersicon lycopersicum* (L.)) having denomination **MHTM 401**, 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 MHTM 401:**

**Applicant** : Maharashtra Hybrid Seed Company Limited

**Address of the Applicant** : Resham Bhavan, 4<sup>th</sup> Floor,

78, Veer Nariman Road, Mumbai-400020, India

**Nationality of Applicant** : Indian

**Application details**

a. Number : 

<b>E13</b>	<b>LL13</b>	<b>11</b>	<b>31</b>
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b. Date of receipt : 04/01/2011

c. Date of acceptance : 05/09/2011

**Crop (Taxonomical Lineage)** : Tomato (*Lycopersicon lycopersicum* (L.))

**Denomination** : MHTM 401

**Type of Variety** : Extant (Variety of common Knowledge)

**Classification of Variety** : Hybrid

**Previously proposed denomination** : Not applicable

**Name of Parental Material** : T 488 x T 2044

**Name of Reference Varieties** : NS 2535 and Utsav

**Variety Description:**

<b>A. Group Characteristics</b>	<b>Remarks, measured values, example varieties, etc.</b>
Plant: Growth type	Determinate [Hisar Arun]
Leaf: Serration	Less serrated [Kashi Sharad]
Fruit: Green shoulder	Absent [Kashi Anupam]
Fruit: Shape in longitudinal section	Obovoid [Kashi Sharad]
Fruit: Colour at maturity	Red [Kashi Vishesh]
<b>B. Distinct Characteristics:</b>	
<p><b>MHTM 401</b> has distinguishing characters like intermediate structure of leaf, horizontal attitude of leaf in relation to main stem in middle third of plant, horizontal attitude of petioles of leaflets in relation to main axis, medium intensity of green colour of fruit, obovoid shape of fruit in longitudinal section, weak ribbing at peduncle end of fruit, flat to pointed shape at blossom end of fruit and fruit with two locules.</p>	

**C. Reference varieties:**

1. **NS 2535:** It has distinguishing characters like open structure of leaf, drooping attitude of leaf in relation to main stem in middle third of plant, semi erect attitude of petioles of leaflets in relation to main axis, medium intensity of green colour of fruit, obovoid shape of fruit in longitudinal section, absence of ribbing at peduncle end of fruit, pointed shape at blossom end of fruit and fruit with three to four locules.

2. **Utsav:** It has distinguishing characters like open structure of leaf, drooping attitude of leaf in relation to main stem in middle third of plant, horizontal attitude of petioles of leaflets in relation to main axis, light intensity of green colour of fruit, cylindrical shape of fruit in longitudinal section, weak ribbing at peduncle end of fruit, flat to pointed shape at blossom end of fruit and fruit with three to four locules.

**D. Date of commercialization of the variety**

Commercialized since 16/10/2008

**E. Photographs:** (See figure 16)

भारतीय पौधा किस्म जर्नल खंड - 05, अंक - 10, 03 अक्टूबर, 2011 में  
अधिसूचित प्रत्याशी किस्मां के चित्र

**Photograph of candidate varieties notified in Plant Variety Journal of India,  
Vol. - 05, No.- 10, October 03, 2011**

चित्र 01:

**Figure 01: Maize: MIM 002**

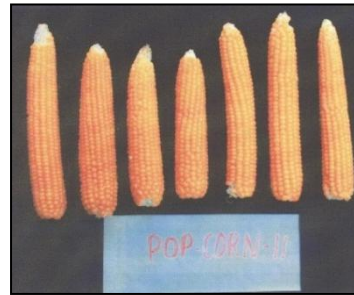


चित्र 01:

**Figure 01:** General view of crop

चित्र 02:

**Figure 02: Maize: Jawahar Popcorn-11**



चित्र 02:

**Figure 02:** General view of cobs

चित्र 03:

**Figure 03: Maize: Vivek Sankul Makka-37**



चित्र 03:

**Figure 03:** General view of cobs

चित्र 04:

**Figure 04: Rice: Saguna (NR-28)**



चित्र 04:

**Figure 04:** General view of number of tillers / plant, culm attitude and intensity of green colour of leaf

चित्र 05:

**Figure 05: Rice: Vaishnavi (NR-241)**



चित्र 05:

**Figure 05a:** View of panicle



चित्र 05:

**Figure 05a:** View of plant pigmentation, intensity of green colour of leaf and culm attitude

चित्र 06:

**Figure 06: Rice: Nirmal-30 (NPH-30)**



चित्र 06:

**Figure 06a:** View of plant pigmentation



चित्र 06:

**Figure 06b:** View of culm attitude and length of blade and angle of flag leaf

चित्र 07:

**Figure 07: Rice: Parvati (NR-48)**



चित्र 07:

**Figure 07a:** View of stigma colour



चित्र 07:

**Figure 07b:** View of culm attitude, flag leaf angle and intensity of green colour of leaf

चित्र 08:

**Figure 08: Rice: Sai (NR-212)**



चित्र 08:

**Figure 08a:** General view of panicles



चित्र 08:

**Figure 08b:** View of plant pigmentation and number of tillers/plant

चित्र 09:

**Figure 09: Pearl Millet: BPM 904**



चित्र 09:

**Figure 09:** View of spike

चित्र 10:

**Figure 10: Sorghum: BGS 802**

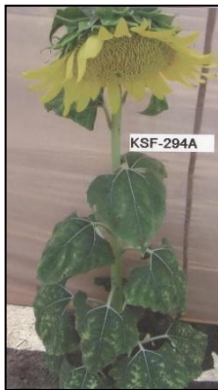


चित्र 10:

**Figure 10:** View of spike

चित्र 11:

**Figure 11: Sunflower: KSF-294 A**



चित्र 11:

**Figure 11:** View of Leaf serration angle of lateral veins, orientation of blade, orientation of blade, head attitude and head shape of grain side

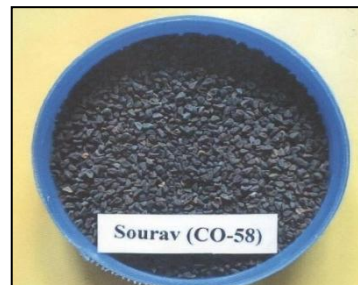
चित्र 12:

**Figure 12: Jute: Sourav (CO-58)**



चित्र 12:

**Figure 12a:** View of leaf shape



चित्र 12:

**Figure 12b:** View of seeds



चित्र 13:

**Figure 13: Pearl Millet: BPM 907**



चित्र 13:

**Figure 13a:** View of leaf shape



चित्र 13:

**Figure 13b:** View of spike

चित्र 14:

**Figure 14: Maize: KML 133**



चित्र 14:

**Figure 14:** View of ear shape, ear colour of top of grain and anthocyanin colouration of glumes

चित्र 15:

**Figure 15: Maize: PMH-4**



चित्र 15:

**Figure 15:** View of cobs

चित्र 16:

**Figure 16: Tomato: MHTM 401**



चित्र 16:

**Figure 16:** View of leaf shape, shape of blossom, ribbing and colour at maturity