

Release of Ornamental Rose (*Rosa Hybrida*) Cultivars

Cultivar	Parent	Method
Himalayan Wonder (Thornless)	First Red	Selection



Salient Features of the Cultivar Himalayan Wonder

Length of flowering shoot (cm)	78.46
Diameter of flowering shoot (cm)	0.710
Diameter of flower bud (cm)	2.59
Length of flower bud (cm)	4.51
Diameter of bud neck (cm)	0.517
No. of flowering shoot per plant/year	26.60
No. of flowering shoot/m ² net area/year	213
Size of fully open flower (cm)	10.23
No. of petals per flower bud	31.4
Colour of stalk/ shoot	Green
Colour of upper surface of leave	Green
Colour of lower surface of leave	Green
Outer colour of petal	*Red Purple
Inner colour of petal	*Red Purple
Flower vase life (days)	7



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Cultivar**Himalayan Glory****Parent****First Red****Method****Selection****Salient Features of the Cultivar Himalayan Glory**

Length of flowering shoot (cm)	62.76
Diameter of flowering shoot (cm)	0.625
Diameter of flower bud (cm)	2.71
Length of flower bud (cm)	4.51
Diameter of bud neck (cm)	0.486
No. of flowering shoot per plant/year	26.94
No. of flowering shoot/m ² net area/year	215
Size of fully open flower (cm)	10.65
No. of petals per flower bud	31.58
Colour of stalk/ shoot	Green
Colour of upper surface of leave	Yellow Green
Colour of lower surface of leave	Yellow Green
Outer colour of petal	*Tyrian purple
Inner colour of petal	*Rose Bengal
Flower vase life (days)	8

Reference specification: The Royal Horticulture Society, UK

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DNA Fingerprinting of Rose Cultivars

The two new rose cultivars, Himalayan Glory and Himalayan Wonder, developed through intensive selection at CSIR-IHBT were analyzed for microsatellite polymorphisms. The First Red was included for comparison purpose. The initial polymorphism survey identified six informative markers (Rc_54, RC_111, RC_200, Rc_201, Rc_205 and Rc_232), which were subsequently utilized for developing DNA fingerprints. Microsatellite markers RC_111 and Rc_205 amplified maximum of four alleles whereas polymorphic markers namely Rc_54, Rc_201 and Rc_232 detected three alleles in tested cultivars. Microsatellite marker Rc_205

amplified two alleles specific to Himalayan Wonder. Interestingly, all the three cultivars were uniquely identified with set of three markers (**Figure 1 & Figure 2**). The cluster analysis based on microsatellite data clearly distinguished all the three cultivars. Genetic similarity (GS) among three cultivars ranged from 0.49 to 0.80 (average GS, 0.63). The cultivar Himalayan Glory recorded high genetic affinity with First Red (GS, 80%), while, Himalayan Wonder confirmed moderately high divergence (47.1%) with First Red (**Figure 3**). Further, newly developed cultivars namely Himalayan Wonder and Himalayan Glory recorded 53% genetic diversity in each other.

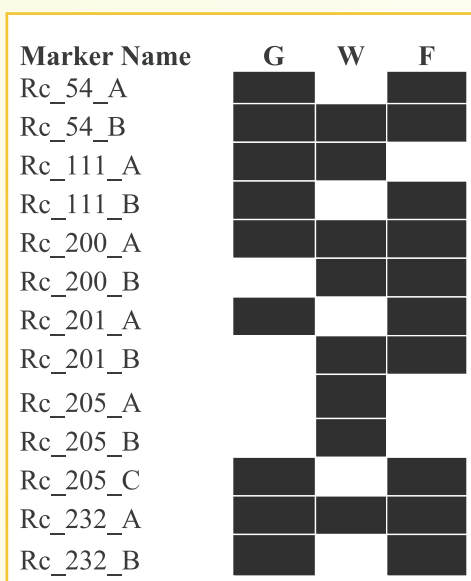


Figure 1. Diagrammatic representation of Rose cultivars DNA fingerprints based of Microsatellite markers. Shades columns represent the presence of bands amplified by different microsatellite markers

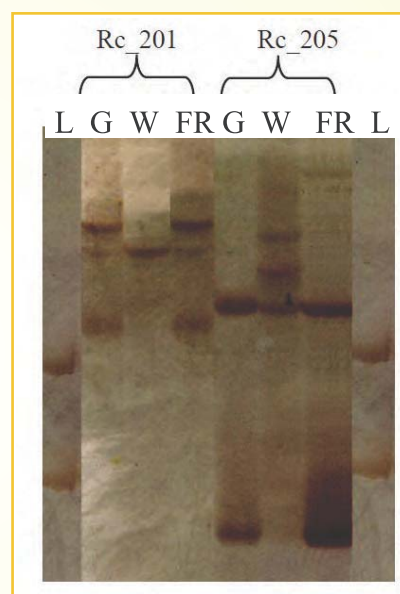


Figure 2. Microsatellite profiles generated with Rc_201 and Rc_205 in tested rose cultivars. L: represent the 50 bp ladder standard (Mbl fermentas). G: Himalayan Glory; W: Himalayan Wonder; FR: First Red

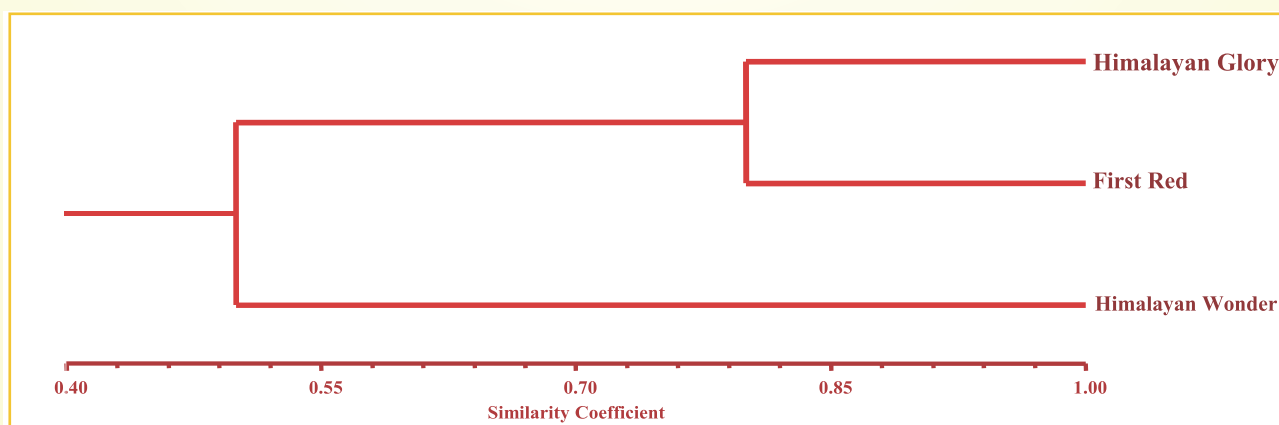


Figure 3 Genetic relationships of Rose cultivars based on microsatellite markers. The scale indicates Jaccard's similarity coefficient



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Performance evaluation of cv Himalayan Wonder under polyhouse conditions



Performance evaluation of cv Himalayan Glory under polyhouse conditions

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