

Short Communication

Bud sport in *Bougainvillea* 'Hot Samba'

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Received: September, 05

Accepted: September, 28

Abstract

Spontaneous mutation in single bracted *Bougainvillea* cultivar 'Hot Samba' was observed in a potted plant grown in the *Bougainvillea* germplasm collection of the company. The bud sport was detected as a periclinal Chimera in two branches which were emerged out from the mature stem of the 'Hot Samba' plant at the basal region in two directions during morphological characterization programme of different cultivars of *Bougainvillea* collection of Fu Jian Sheng Hong Zhan Landscape and engineering Company Ltd., China. These branches were immediately labelled and allowed to grow to isolate this mutant in pure form.

Key words: Bud sport, mutation, chimera, characterization, periclinal chimera

Introduction:

The bud sports in ornamental plants have been observed from time to time by nursery man, hobby oriented growers, keen gardeners and horticulturists who maintained them by vegetative means and have often given a qualifying name to each sport (Banerji and Roy, 2017). A large number of cultivars of *Bougainvillea* have arisen as a somatic mutation or bud sports (Banerji, 2014). Bud sport has played very significant role in origin and evolution of many ornamental plants and *bougainvillea*. Many of the present day *bougainvilleas* grown, evolved as a bud sport (Banerji, 2008, 2009, Banerji *et al.*, 2017). Three types of bud sports have been observed in *Bougainvillea* *i.e.* Change of colour of the bracts, variegation in leaves and development of imperfect flower tubes (Zadoo *et al.*, 1975). Details of some important bud sports in single and double bracted *bougainvillea* has already been reported (Nath *et al.*, 1983). The present paper deals with *bougainvillea* cultivar 'Hot Samba' and its newly evolved bud sport (Fig. 1). Morphological characterization of 'Hot Samba' was done (Li Qian Zhi *et al.*, 2019) and given below.

Results:

Plant growth is erect. Mature stem colour is brown. Spines are present on old stem. Spines are very hard and strong and slightly curved at the tip. Its colour is brown and its length is 1.3 cm. Young developing shoots have 10-13 fuschia colour leaves followed by coppery and then green leaves. Leaf colour is green and its shape is broad ovate (Fig.2). Leaf tip is acute. Ventral surface of the leaf is light green. Leaf size is 5.8 X 3.0

cm (Table-1). Petiole length is 1.1 cm. Flower growth is very healthy. Flowers are unique for its expression of petal colour while sepal colour remains the same for all the colours of the petals. The major types of petal colours are yellow, light pink and white which was observed during our observation in different bracts groups. In various bracts groups of three, following colour of the star has been observed: 1. Two yellow and one light pink 2. Two light pink and one yellow 3. One light pink, one yellow and one white. In all the cases, flower tube colour remains the same *i.e.* deep orange and its shape is narrowly ovate. The bract tip is acute and its base is obtuse. Bract size is 3.70 X 2.40 cm. Flower tube length is 2.0 cm. Stars are prominent and attractive and along with bracts provide extra beauty to this cultivar. It acts as a specific maker for the identification of this cultivar. Star diameter is 0.8cm (Table-1).

Detection of Mutation:

In one potted plant of 'Hot Samba' grown in germplasm collection of Fujian Sheng, Hong Zhan Landscape Engineering Company Ltd. China sported in to new form. In the central basal region of the pot two branches are growing horizontally and produced pink colour of bracts. The most important point observed during recording of data is the emergence of the shoot is in periclinal chimera form. At this stage chimera management is in final stage and not required to follow long routes of sectorial and mericlinal chimera management steps, which are time consuming. This bud sport branch was very special, distinct and visible from a distance due to its dark green leaf with changed morphology

and development of new bract colour i.e. pink (Fig. 1). This branch has normal, symmetrical and green leaves. Leaf size is 6.8 × 4.5 cm and petiole length is 1.5 cm (Table 1). It has been further observed that this shoot is growing straight and rate of growth is faster than other shoots. The new branch after attaining length of 55 cm, bract initiation has been observed followed by optimum flowering (Fig. 1). Colour of the mutant leaf is deep green while in HotSamba light green leaf colour was observed (Fig. 2). Leaf shape is totally changed in the bud sport. It is broad ovate with acute tip and obtuse base while in 'Hot Samba' it is ovate with acute tip and obtuse base (Fig. 2). Significant increase in size of the leaf, length and width ratio and leaf area is increased in the mutant branch. In mutant leaf, increase in length of 1.0 cm, width of 1.50 cm and petiole length of 0.40 cm was observed



Fig. 1. 'Hot Samba' plant with bud sport branch

Fig. 2. Leaves of 'Hot Samba' and bud sport

Fig. 3. Bract of 'Hot Samba' and bud sport

Table 1. Morphological Characters of Bougainvillea Cultivar Hot Samba and its Bud Sport

Characters	Hot Samba	Bud Sport
Leaf Shape	Ovate	Broad ovate
Leaf Colour	Light green	Dark green
Leaf length (cm)	5.80	6.8
Leaf width (cm)	3.00	4.50
Petiole Length (cm)	1.10	1.50
Leaf tip	Acute	Acuminate
Leaf Base	Obtuse	Obtuse
Bract Shape	Narrowly Ovate	Narrowly Ovate
Bract Length (cm)	3.70	3.70
Bract width (cm)	2.40	2.30
Flower Tube Length (cm)	2.0	2.20
Star Diameter (cm)	0.80	0.60
Star Colour	Orange, white Yellow, Light Pink	White

in comparison to Hot Samba leaf (Table-1). Bract colour in Hot Samba is deep Orange and its mutant is pink (Fig. 3). Flower tube length is increased in mutant by 0.20 cm.

Isolation of the Mutant:

Isolation of the periclinal mutant branch was initiated and is in progress. In first step most the branches of 'Hot Samba' plant has been pruned to provide better chance of growth to the mutant branch. Chimera management technique for bougainvillea plant standardized at CSIR-NBRI, Lucknow will be followed to isolate the mutant in pure form in the same method as in case of Bougainvillea cultivar 'Abhimanyu' (Banerji, 2018).

Acknowledgement:

Thanks are due to Mr. Li Qian Zhi, Chairman for providing the Bougainvillea plants from his germplasm collection for carrying out the research work

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