

## DEVELOPMENT OF NEW CUT-FLOWERS VARIETIES AT THE POTATO, VEGETABLE & FLOWER RESEARCH CENTER

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Chrysanthemum, gerbera and carnation are the main research objects in the cut-flower breeding program at the Potato, Vegetable and Flower Center. Hybridization using the collection of available breeding materials and selection of promising genotypes are the main breeding methods employed which are clonally propagated for further evaluation and selection for agronomic and horticultural attributes and market acceptance. During the last 2010, a set of varieties of chrysanthemum, carnation and gerbera had undergone the last cycle of evaluation and 8 varieties (3 chrysanthums, 2 gerberas and 3 carnations) had been approved by Scientific Council of the Ministry of Agriculture & Rural Development (MARD).

The new chrysanthums C07.7, C07.16 and C07.14 were selected in 2007 from the crosses Chevrolet x C05.5, C05.1 x Sunny Yellow and C05.3 x Golden Ping Pong, respectively. Carnation varieties D06.1, D06.9 and D06.10 had been developed, in 2006, from the crosses Barbara x Cloves, Optima x White Barbara and Orange Finato x Optima, respectively. Gerbera varieties G05.76 and G05.82 were selected, in 2005, from the crosses ĐTH1 x Lambada and G04.6 x ĐTH1, respectively.

F1 progenies of the crosses were planted in the net-house for assessment and selection of good genotypes. The selected genotypes were subjected to meristem culture for clean-up and vegetatively propagated *in vitro* to attain an adequate amount of planting materials for standard evaluations and test production.

The evaluation results showed that C07.7, C07.16 and C07.24 are promising varieties for commercial production. C07.7 is an exhibit-spray chrysanthemum with reddish brown with some yellow tan petals, semi-double flowers of medium size with a deep-set yellow center. Under photoperiod condition of 15-16 hours extending for 35 days, C07.7 plants developed very strong stems reaching 80-85 cm high (Plate 1). C07.16 is also an exhibit-spray chrysanthemum with medium-sized bright yellow decorate flowers with a deep-set green center. Under photoperiod condition of 15-16 hours extending for 25 days, C07.16 plants developed very strong stems reaching 90-100 cm high at blooming. C07.24 is also of the exhibit-spray type characterized by red semi-double flowers of medium sizes with a deep-set yellow center. Under photoperiod condition of 15-16 hours extending for 30 days, C07.24 plants developed strong stems with 85-90 cm high (Plate 1).

The D06.1 had high yield potential with attractively beautiful flowers (25 flowers/m<sup>2</sup>/month) of double and bright red-pink color. It has stiff, sturdy and very strong stem with 80-90 cm high (Plate 1). The variety exhibited highly tolerant to white rust (*Uromyces dianthi*) and wilting by *Fusarium oxysporum* f. sp. *Dianth.* The D06.9 yielded 30 flowers/m<sup>2</sup>/month of double, deep pink color. It has stiff, sturdy and very strong stem with 80-90 cm high. The variety exhibited highly tolerant to white rust and *Fusarium* wilt. The D06.10 had also high yield potential (25 flowers/m<sup>2</sup>/month) of double type and bright red with mosaic pattern of orange

flecks. The variety exhibited highly tolerant to white rust and *Fusarium* wilt (Plate 1).

The G05.76 is a promising gerbera variety with high yield potential (32 flowers/m<sup>2</sup>/month). The flowers are double, attractive color, bright orange with narrow dark center. It has relatively sturdy stem with 60-65 cm high. The variety exhibited highly tolerant to collar rot (*Botrytis cinerea*) and greenhouse white flies (*Trialeurodes vaporariorum*). The G05.82 has high yield potential (36 flowers/

m<sup>2</sup>/month) with attractively beautiful flowers. The flowers are double, deep red color with narrow dark center. It has stiff, sturdy and very strong stem with 60-65 cm high. The variety exhibited highly tolerant to collar rot and greenhouse white flies.

With the demonstration plantings in the farmers' gardens at Da Lat, these new cut-flower varieties have been highly accepted by growers and market for their high yield potential, good pest and disease tolerance and flower quality characteristics.



C07.7



C07.16



C07.24



D06.1



D06.9



D06.10



**G05.76**



**G05.82**

**Plate 1.** New cut-flower varieties.