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Effect of chemicals and stem length on vase life of rose

D.R.NANDRE, V.S.SANDHAN AND S.M. HADOLE

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See end of the article for authors' affiliations

Correspondence to:
D.R. NANDRE
K.K. Wagh College of Agriculture and Research, NASHIK (M.S.) INDIA

ABSTRACT

An investigation was carried out to study the effect of chemicals and stem length on vase life of rose at K.K.Wagh College of Agriculture and Research,Nashik during December, 2007-2008. The treatment comprised of two factors *i.e.* stem length and chemicals. The results revealed that, significantly the maximum flower. Flower weight at the end of vase life, total uptake of solution by rose cut flower during vase life and vase life were recorded in the treatment combination C_1L_1 *i.e.* rose cutflower of 40 cm stem length kept in vase solution containing D-fructose 3% + citric acid 0.3%.

Key words : Rose, Vase life, Chemical, Stem length

The floriculture consisting of cultivation and trade of loose flowers, cut flowers, potted plants, garden bedding plants, garlands, bouquets, planting material, services etc. which has become an important sector, experiencing rapid change the world over. Utilization of flowers in most of the countries are increasing associated with income development. The term cut flower is used to define the flower which is cut along with the portion of stem for the purpose of display in exhibitions domestic purpose. The demand of cut blooms in the global market is increasing at the rate of 10 to 15 per cent each year (Singh *et al*., 2000). Until recently, vase life was not considered a major quality factor and flowers were judged on the basis of colour, flower development size, appearance length of stem and quality of leaves. Today, great emphasis is being placed on the ability of cut flowers to last for long time in vase (Higginson, 1994). Rose is indisputably the top ranking cut flower and comprises nearly 60 to 70 per cent share in the international flower trade. Gladiator and Paradise are important rose varieties which are famous as cut flower due to their attractive colour and more vase life period. Considering the above views, present investigation was carried out.

MATERIALS AND METHODS

An experiment was carried out at K.K.Wagh College of Agriculture and Research, Nashik during December 2007-08 to study the effect of stem length and chemicals on vase life of rose. The experiment was conducted in factorial completely randomized block design with four replications. The treatment comprised of two factors *i.e.* Factor A consist of stem length (S_1 – 30 cm and S_2 – 40 cm) and various concentrations of chemicals (C_1 – D fructose 3% + citric acid 0.03%, C_2 – D- fructose 3% + L- ascorbic acid 500 ppm, quinoline, citrate 300 ppm, C_3 – D-fructose 3% + nickel chloride 200 ppm, C_4 – D fructose 3% + 8-hyroxyquinoline citrate 300 ppm, C_5 – D- fructose 3% + Aluminum sulphate 300 ppm, C_6 – control (distilled water) and these were tried in combination with each other. The cut flower of rose variety gladiator of same uniformity and maturity were harvested at the stage when 1-2 petals were outturned from the bud tip by retaining four leaflets from the apex of the stem. The vase solutions were prepared as per specifications given in the treatments and accordingly observed were recorded on various parameters.

RESULTS AND DISCUSSION

The data presented in Table 1 revealed that rose cut flower with stem length 40 cm kept in vase solution containing D-fructose 3% + citric acid 0.03% recorded significantly maximum flower diameter at the end of vase life (9.69 cm), flower weight at the end of vase life (12.40 g), total uptake of solution during vase life (77.16 ml) and maximum vase life of cut flower (10.22 days). Whereas, significantly the minimum was recorded in the treatment combination of B_2C_6 *i.e.* rose cut flower of stem length 30 cm kept in vase solution containing distilled water (control). While, significantly minimum loss in weight of cut flower at the end of vase life (1.98 g) was recorded in the treatment combination B_2C_1 *i.e.* stem length 30 cm kept in vase solution containing D-fructose 3% + citric acid 0.3% and recorded maximum in the treatment combination of B_1C_6 (Stem length 40 cm kept in vase solution containing distilled water (control). This might be due to the fact that, more reserved carbohydrates were present in longer stems of cut rose that helped in flower development and sugar in the vase solution replaces the depleted endogenous carbohydrates utilized during the post harvest life of flowers. It helps in continuation of normal metabolic activities after harvest and inhibits production and action of ethylene in case of cut flower. These results