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IN VITRO MUTATION BREEDING OR CARNATION BY GAMMA RADIATION

The production of new cultivars in ornamental plants is of great economical significance to this industry. Gamma irradiation causes mutagenesis that significantly increases genetic diversity. The objective of this research was production of new carnation cultivars using in vitro mutation breeding. Six carnation cultivars (White Liberty, Liberty, Tabor, Tabasco, Eskimo, Mariposa and Grand Slam) were considered in this study. The best treatment for highest percentage of callus induction were obtained from leaf explant cultured on MS medium supplemented with 0.5 mg/l 2,4-D and 0.2 mg/l BA. The 3 weeks old calli induced were Gamma irradiated with different doses (0,15, 25, 35, 45, 55 Gy). After radiation, calli were transferred to MS medium supplemented with 3 mg/l BA, 0.6 mg/l NAA , 4mg/l AgNO3 and 40 mg/l adenine hemisulfate. Regenerated plants cultured onto MS medium with 1 mg/l IBA for root induction. The rooted plantlets were transferred to greenhouse for adaptation. Different traits including plant height, inflorescence length, leaf length and width, inter node space, number of flower in florescence, number of petals, the number of true leaves below the flower, flower diameter and number of days to flowering will be considered.

Country or International Organization

Iran- NIOP

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