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RESEARCH NEWS

THE EFFECT OF GAMMA RADIATION ON *Didymocarpus humboldtianus*

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Sustainable utilization of native and endemic plants with ornamental value would lead to both the conservation of these plants in the wild and also contribute to the introduction of new plants to the floriculture industry. Value addition is one of the important keys to successful introduction of native plants for commercial cultivation. Gamma radiation was used as a physical mutagen to induce mutations and improve plant architecture of *Didymocarpus humboldtianus* (Ceylon Rock Primrose).

In-vitro cultures of *D. humboldtianus* were established in a ½ strength Murashige and Skoog medium with 1 mg/L Benzyl Adenine Purine (BAP) according to Dhanasekera and Krishnarajah (1997). Cultures of different ages (30,75 and 135 days) were irradiated at different dosage levels (2,3,4 and 5 Krads) of gamma radiation. Untreated samples for each treatment were kept as control and. ten replicates were maintained for each treatment. Observations were made over a period of six months on survival of plants, chimeral plant formation and *in-vitro* flowering.

Thirty days old cultures showed highest survival (100%) and chimeral plant formation (95%) when treated with 3 Krads. 75 days old cultures showed highest survival (100%) and chimeral plant formation (75%) when exposed to gamma irradiation at the same dosage (3 Krads). Percentage of chemeral plant formation was higher in 30-days old cultures as compared to 75-days old cultures. 135 days old cultures however, gave very few chimeral plants in all radiation dosages with survival also showing no difference between dosages.

It may be concluded that younger cultures were more responsive to change when irradiated and a dosage of 3 Krads gamma radiation produced the highest effects on cultures. Chimeral changes were seen in both in the first generation as well as the second generation for 30 &75 days old cultures respectively.

A few of the (135days old) in-vitro cultures of the controls flowered for the first time. Axillary buds developed into inflorescence after attaining

reproductive maturity. Flowers of *in-vitro* cultures were of the same size and colour compared to their *in-vivo* counterparts.

Reports on *in-vitro* flowering (Nadgande et al., 1997, Duan et al., 1995, Ramanayake, 1999) in other plant species always had BAP as a media component consistently. However, in *D. humboldtianus* all plants grown in BAP did not flower indicating that some unknown factor other than gamma radiation may have interacted to stimulate axillary buds to flower.

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