Geographical Indications in Horticulture: An Indian Perspective

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Geographical Indication, an exclusive community rights, recognizes crucial roles played by location, climate and human know-how in making the products distinguished on the basis of their unique intrinsic attributes. It acts as an effective tool in protecting and rewarding not only the market potential of elite items but also the traditional knowledge associated with them. Since the enactment of the GI Act, 102 agricultural items have been accorded with GI tags till April 2019 and among them the share of horticultural items is more than 75 per cent. Among horticultural crops, maximum GIs have been accorded to fruit crops (38) followed by plantation crops (14), vegetable crops (1) and spices (10), whereas flowering plants and medicinal and aromatic plants conferred with 6 and 2 GI tags, respectively. Mango, citrus, banana, chilli, tea, cardamom, jasmine, grapes, pineapple, brinjal, onion and coffee are important horticultural crops with regard to GI tags. The state-wise ownership of GIs in horticultural crops indicates activism of Maharashtra and Karnataka. The efforts made by public and quasi-public institutions in obtaining GI tags are indeed a significant to protect, exploit market potential and to facilitate better return to legitimate rural producer from origin-linked reputed products as under the TRIPS Agreement unless a geographical indication is protected in the country of its origin there is no obligation under this Agreement for other countries to extend reciprocal protection.

Keywords: Geographical indication, Horticulture, Sui generis, TRIPS Agreement

Gamma Radiation Induced Phenotypic Diversity in Dendrobium 'Emma White'

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Dendrobium, one of the largest genera of family Orchidaceae, is economically important both as an ornamental and medicinal crop. Varietal improvements of Dendrobium through the conventional breeding methods are difficult and challenging due to existence of incompatibility among the respective primary gene pool. Gamma irradiation technique is used to induce variability and generate mutants with improved traits in a short period. In our study, protocorm-like-bodies (PLBs) of Dendrobium hybrid 'Emma White' were exposed to gamma rays (10-80 Gy) and *in-vitro* propagated up to M1V5 generation. Plantlets were regenerated from PLBs treated at 10, 20 and 40 Gy; while 60 & 80 Gy treated PLBs showed only proliferation even after 24 months of post-irradiation treatment. Phenotypic variations were recorded among the plantlets during the *ex-vitro* hardening stage. Leaf variations in terms of shape, size, structure, surface, tip and colour were observed in plantlets generated at 10 Gy. Significant variations and deformity were observed in leaf structure and arrangement at 40 Gy radiation level. Among 120 putative mutants, 12 lines viz. 10/4, 10/5, 10/12, 10/17, 10/35, 10/36, 10/60, 10/66, 10/75, 10/76, 10/82, 10/85 were selected for further analyses including molecular characterization. Mutant line 10/46 was identified with early flowering, within 09 months 24 days from the date of hardening. Findings indicate impact of gamma radiation effects on enhancing genetic variability of both vegetative and flowering traits of Dendrobium hybrid.

Keywords: Dendrobium, Gamma radiation, Mutagenesis, Phenotypic variation

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