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Notes and Information

OCCURRENCE OF PIGMENTED FLOWERS AND VARIATION IN OTHER MORPHOLOGICAL TRAITS OF IRRADIATED AND UNIRRADIATED SAMPAGUITA (Jasminum sambac L. Sol.)

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ABSTRACT – The occurrence of pigmented flowers and variation in other morphological traits including the survival of cuttings were investigated in unirradiated and irradiated sampaguita. Cuttings were exposed to varying doses of gamma rays ranging from 0, 3, 5, 10 and 15 Gy. Unirradiated control plants and those irradiated at 15 Gy had the highest percent survival of cuttings which was not significantly different at 70.29% and 67.19% respectively. In terms of the number of branches, plants derived from irradiation with 3 Gy produced the highest at 19.00 which is not significantly different from 15 Gy at 17.75, while the lowest was obtained at 5 Gy at 11.57. The width and length of leaves derived from irradiated and unirradiated cuttings were statistically similar. The highest mean number of petals at 9.33 and sepals length at 9.67 cm was observed in the unirradiated control although this is very similar to irradiated treatments. The mean number of white flowers is highest in the unirradiated control plants at 72.79 followed by those plants derived from 5 Gy at 53.08, while the lowest mean number of white flowers at 18.70 came from plants derived from irradiated cuttings at 15 Gy. Furthermore, the highest mean number of pigmented flowers is not significantly different for the unirradiated control plants which have 6.14, and those plants which were derived from irradiated plants with 3 Gy at 5.0 and with 10 Gy at 5.49. The lowest mean number of pigmented flowers was observed from plants derived from cuttings exposed to 15 Gy. In both the unirradiated control and irradiated treatments regardless of radiation dose, flower fragrance was retained in both pigmented and white flowers. The different doses of radiation used in the present study have no significant effect on the morphological characteristics and mean number of pigmented flowers produced by the sampaguita. While the irradiation treatments have no significant effect on the formation of pigmented flowers, the previously irradiated materials with 3-10 Gy plus the control can be subjected to another round of irradiation to possibly build up the induced mutation.

Keywords: gamma irradiation, Jasminum sambac, mutation, sampaguita

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