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Evaluation of V_2M_1 generation of *Jasminum sambac* cv. GUNDUMALLI (Ait.)

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ABSTRACT : A field trial was carried out at the Department of Floriculture and landscaping, Horticultural College and Research Institute, Tamil Nadu Agricultural University, Coimbatore from June 2009 to May 2010 to evaluate V_2M_1 generation of *Jasminum sambac* cv. GUNDUMALLI, forwarded from V_1M_1 generation. Variability studies on the V_2M_1 population revealed that the mutation induction produced maximum GCV along with high heritability and genetic advance estimates for morphological traits *viz*., plant height, number of secondary and tertiary branches, floral characters *viz*., corolla tube length, flower bud length, flower bud width exhibited low GCV, whereas, number of flower buds per plant registered high GCV. High heritability with low genetic advance was observed for floral characters *viz.*, flower bud length and flower bud weight whereas, high heritability with high genetic advance observed for number of flower buds per plant and yield of flower buds per plant.

KEY WORDS : : *Jasminum sambac*, V_2M_1 generation, Morphological traits, Floral characters, GCV, Heritability, Genetic advance

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Jasmine is one of the important fragrant flowers used even from very ancient days in India. It belongs to the family Oleaceae. As this species is normally propagated by asexual means, limited variability exists in each of these plant species. However, crop improvement work taken up in *Jasminum grandiflorum* and *Jasminum auriculatum* at TNAU has led to the release of cvs. Parimullai, CO 1 and CO 2 Mullai and CO 1and CO 2 Pitchi in *Jasminum grandiflorum* and they are known for their high yield and better floral traits (Abdul Khader and Kumar,1995). Being a triploid species (2n= 2x= 39) no improvement work could be taken up with *Jasminum sambac* as it is sterile and doesn't set seeds. (Srivatsava and Karmakar,1986). Keeping this in view that the mutageneic treated V_2M_1 population of *Jasminum sambac* cv. GUNDUMALLI which were forwarded from V_1M_1 generation was evaluated. The result obtained from the evaluation are summarised below.

RESEARCH METHODS

Treatment details:

The physical and chemical mutagens in the treatments were fixed based on the LD_{50} value (2.0 kR for gamma rays) and (30mM for EMS) reported by Kannan (1994).

Treatments	Dosage
T_1	Control
T_2	Exposing to 1.5 kR Gamma rays
T_3	Exposing to 1.5 kR Gamma rays + treating with 30 mM EMS
T_4	Exposing to 2.0 kR Gamma rays
T_5	Exposing to 2.0 kR Gamma rays + treating with 30 mM EMS
T_6	Exposing to 2.5 kR Gamma rays
T_7	Exposing to 2.5 kR Gamma rays + treating with 30 mM EMS

Methods followed for generating V_2M_1 generation:

For the present investigation the successful mutants raised by Mekala (2009) which survived in pots were used for planting in the main field at a spacing of 60 x 90 cm during June 2009. The mutant populatios maintained are detailed below.