



**POLISH CULTIVARS OF *Dendranthema grandiflora* Tzvelev  
AND *Gerbera jamesonii* Bolus BRED *IN VITRO* BY INDUCED MUTATIONS**

In the Laboratory of Floriculture at the Academy of Technology and Agriculture in Bydgoszcz, a new method for inducing mutations *in vitro* has been worked out. The method uses leaf explants as objects for irradiation and development of adventitious shoots. X-rays and gamma-rays were used in doses from 5 to 25 Gy with dose rates 0.92 Gy/min and 1.92 Gy/min respectively. The irradiated chrysanthemum leaves were stimulated to produce adventitious shoots on a Murashige and Skoog solid medium with 2 mg/l of indole-3-acetic acid (IAA) and 0.6 mg/l 6-benzylamino-purine (BA), while irradiated gerbera leaves were stimulated on the MS medium with 3 mg/l IAA; 100 mg/l myo-inositol and 0.4 mg/l thiamine-hydrochloride.

Changes in the colour, size and form of inflorescence were observed among the plants regenerated from the experiment. These mutations were often accompanied by changes in the leave morphology and occasionally in the form of the whole plants. No undesirable mericlinal or sectorial chimeras were observed in this plant material. This also indicates that adventitious shoots growing from leaf explants usually are developing from a single cell of a leaf petiole. In this way the developed new plant consists of genetically homogenous tissues [1].

In gerbera, the first vegetative generation after irradiation produced a substantial number of chimeras. Nevertheless, the chimeras substantially increased the number of mutants with uniformly changed inflorescence colour in the second vegetative generation produced again from the leaf explants [2, 3, 4].

The ability to obtain 12 new cultivars of *Dendranthema grandiflora* proved the efficiency of this technique. Six of them entered the Polish Cultivar Register in 1993. They were obtained from the purple pink cv. Richmond. After irradiation with 15 Gy X-rays, 'Lady Antee (golden yellow), 'Lady Bronze' (reddish brown), 'Lady Rosy' (creamy pink) were obtained. 'Lady Pink' (pink), 'Lady Salmon', 'Lady Yellow' were obtained after applying 15 Gy gamma rays. Two cultivars, 'Bronze Wonder' and 'Red Wonder', were obtained from the violet pink 'Lilac Wonder' after treating leaf explants with 15 Gy gamma rays. They were submitted to the Research Centre of Cultivar Testing to be tested in 1993.

In 1993 'Red Raisa', the cultivar of *Gerbera jamesonii*, also entered the Register. It is the red mutant of violet pink cv. Raisa as a result of applying a 25 Gy gamma rays dose.

#### REFERENCES

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