عنوان مقاله:
Biological Interventions for Enhancing Saffron Productivity in Kashmir

محل انتشار:
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خلاصه مقاله:
The heterogeneity found in the natural saffron population for morphological, developmental and yield component traits are primarily due to the genetic and environmental factors. Development of high yielding genotypes using the existing gene pool of saffron applying the biological tools shows potential for improving the productivity of this crop. A survey undertaken to study the extent of variation revealed wide spectrum of variability in saffron flowers and corm samples collected from saffron growing areas of Kashmir, thus implying a great scope for saffron improvement. Flowers completely devoid of style & anthers and freaks with 4-5 stigmas where observed from the natural populations. Collection and evaluation of saffron clones revealed possibility of increasing yield per se and has lead to the identification of ten elite clones with distinct yield superiority. Due to absence of sexuality mutation breeding approach is another way of creating genetic variability in saffron. An attempt was made to create new variants for economic characters through the induction of mutation using Gamma irradiation. Existing saffron population was irradiated with gamma rays from a co60 source at 0.25, 0.50, 0.75 and 1 kr doses. Delayed sprouting was observed in higher dose (1 kr). Higher dose was also associated with decreased corm yield and dry pistil weight/plant due to strong reduction in percentage of flowering plants and number of flowers / plants. Tissue culture studies have shown possibility to regenerate saffron plantlets and in vitro corm development through somatic embryogenesis. Evaluation of in vitro corms under field conditions revealed that corm development and survival is directly proportional to initial corm weight. Survival percentage among in-vitro corms having average corm weight less than 1 g was only 26 %, whereas, it was above 88 % in above 1 g corms. Weight gain after one year was 0.25 to 3.54 g.

کلمات کلیدی:
Crocus sativus, in vitro micropropogation, mutation, variability