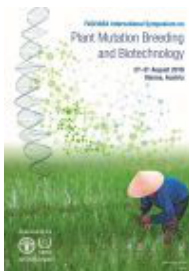


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INDUCED CHLOROPHYLL CONTENT AND MORPHOLOGICAL MUTATIONS IN PHASEOLUS VULGARIS

Beans (*Phaseolus vulgaris*) are major leguminous plants with a high genetic variability for agricultural production. With climatic changes that have occurred in recent years, bean production has been reduced. Due to this reduced production of beans, different studies have been carried that aim to address these losses in productivity. One of the problems is the abortion of flowers of the beans in high temperature and drought conditions. Through induced mutation techniques on bean seeds we tried to extend the time to flowering to eliminate the abortion of flowers. Bean seeds were irradiated with Cs-137 gamma radiation, with three doses, and were also treated with the chemical mutagen dES at three concentrations. The results obtained in the first generation of mutant M1 showed changes as compared to the control for both treatments. The measurement of chlorophyll a and b in experimental field have been carried out with chlorophyll meter. Regarding the amount of chlorophyll in plant leaves it was observed that the maximum level of chlorophyll (30.6) belong to plants derived from irradiation with the dose 50 Gy and the lowest value of chlorophyll amount (7.6) to those derived from treatment with 150 Gy. There were changes in the maturation period for two gamma-ray doses (100 Gy and 150 Gy). On the other hand, related to the chemical mutagens the 0.02M concentration of dES resulted in notable variations, with bigger seeds and larger number of seeds. The M1 generation was planted to produce the M2 generation, which was used to evaluate and to select mutant lines with improved properties. The chlorophyll mutations according to Gustafsson, observed in mutant lines during 2016, in greenhouse experiment, belonged to the Viridis, Chlorine, Alboviridis, Xsantha forms.

Country or International Organization

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Track Classification: Enhancing agricultural biodiversity through new mutation induction techniques