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EFFECT OF EMS AND SA ON TRYPSIN INHIBITOR CONTENT IN MOTH BEAN (*VIGNA ACONITIFOLIA* (JACQ.) MARECHAL)

Moth bean (*Vigna aconitifolia*, Jacq. Marechal) is one of the most important pulse species of India, however, it contains a great amount of antinutritional factors such as trypsin inhibitors (TI). Seeds of local variety of moth bean (*Vigna aconitifolia* (Jacq.) Marechal) were treated with three different concentrations of each chemical mutagens EMS and SA and the morphological mutants were screened under local conditions for Trypsin inhibitor content. Trypsin inhibitor assays were carried out to find out the trypsin inhibitor activity among seven viable mutants and 78 micromutants of moth bean which were developed by induced mutation breeding. The pertinent studies of seven viable mutants and 78 micromutants of moth bean have indicated considerable variation regarding TI level. The lowest TI (180.00 TIU/min/gm meal) was recorded in 6/IV-mutant, while the 7/IV-mutant revealed the highest TI content (326.16 TIU/min/gm meal). The electrophoretic profiles of trypsin inhibitors on X-rays film revealed 3 to 7 iso-inhibitors in different viable mutants and micromutants of moth bean. The amount of TI in the mutants showing reduced trypsin inhibitor bands were quantitatively estimated. The lowest TI activity (187.98 TIU) was observed in B6 mutant, which was developed from 0.15% EMS treatment. Additionally, to nullify trypsin inhibitor activity in moth bean seeds in order to be able to use it in human diet, heat treatment and germination studies have been tried in some of these mutant lines. In comparison with the control TI profile, some viable mutants showed significant changes. These mutants also showed 25-45% reduction in TI content and seed proteins by quantification of micromutants and viable mutants showed significant variations.

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