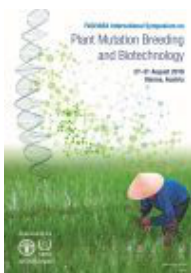


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## INDUCTION OF VARIABILITY FOR YIELD COMPONENTS IN INDIAN MUSTARD (*BRASSICA JUNCEA* L. (CZERN & COSS.) UNDER ACIDIC SOIL REGIME OF JHARKHAND, INDIA

Indian mustard (*Brassica juncea* L.) is the most important oilseed crop of the state of Jharkhand, India, where 78% of the cultivable soil is strongly to extremely acidic. Potential seed yield from such soils cannot be realized. Available varieties and germplasm are not suitable for cultivation and therefore mutation breeding approaches have been followed in attempts to develop novel tolerance to acid soils. Three doses of gamma-rays were applied to seeds: 900 Gy, 1,000 Gy and 1,100 Gy, and a combination of gamma irradiation plus 0.3% EMS (chemical mutagen) was used for induction of mutation in parent varieties Shivani and Pusa Bold. Large M2 generations i.e. 1,39,720 (75,760 Shivani + 63,960 Pusa Bold) were screened under acidic soil (pH 4.8). A wide spectrum of variability for tolerance to soil acidity, earliness, seed yield and yield component traits were observed in the M2 generation in addition to several morphological variants. These variabilities were confirmed in the M3 generation under natural acidic soil reaction (pH 4.8) and found to breed true. The variation in selected mutants for secondary branches was up to 38 in Shivani while, up to 24 in Pusa Bold which was many fold higher than their respective controls. Similarly, siliqua per plant ranged from 6 to 1,223 in Shivani and 7 to 562 in Pusa Bold as against the average siliqua ranged between 125 to 160 in their parents. Seed yield per plant also registered wide variation i.e. 0.45 to 45.49 g in Shivani, while between 0.62 to 34.84 for Pusa Bold against the average seed yield of 4-5g (Shivani) and 5 - 7 g (Pusa Bold). Large number of morphological mutants with novel traits were also identified. Many of the identified mutants registered yields superior to the parents under acidic soil.

### Country or International Organization

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