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IMPROVEMENT OF RESISTANCE TO KILLER WILT DISEASE THROUGH INDUCED MUTATIONS IN LAND RACES OF PIGEONPEA (CAJANUS CAJAN (L.) MILLSP.)

Pigeonpea [*Cajanus cajan* (L.) Millsp.] ranks sixth in global grain legume production. India is the largest producer and consumer of pigeonpea with a cultivated area of 5.13 m ha. 'Wilt' is the major disease of this crop, caused by the soil borne *Fusarium udum* Butler. The Northern part of Karnataka state in India is the major producer of pigeonpea. Local landraces viz., 'Bennur' and 'Katti beeja' are predominantly grown in that region to the tune of 40 per cent area because of their high yield and good quality 'dhal' meal. However, these said varieties are highly susceptible of *Fusarium* wilt disease. *Fusarium* wilt resistance being a oligogenic trait, mutation induction using gamma (γ) rays at various doses 100, 200, 300 and 400 Gy was used with objective of improving wilt resistance in the aforesaid landraces. About 450 dry seeds of each landrace were irradiated and seeds were sown in the wilt screening plot, along with controls (0Gy) following a randomised block design in 3 replications to raise M1 generation during kharif 2016. About 40 desirable apparently wilt resistant plants with in each treatment were chosen and M1 generation harvested and planted in a plant to row progenies basis in a wilt prone field to raise M2 progeny. Seeds from selected M2 were then planted to raise M3 progeny. Selection of desirable plants with wilt resistance was carried out in M2 and M3 generations. Per cent disease incidence (PDI) = (Number of plants wilted)/ (Total number of plants) \times 100 Results: Per cent seed germination and % wilt resistance in M1 generation. Percent germination decreased with the increase dose of γ rays and less wilt (%) in higher dose of treatment. Conclusion: In M3 generation 3 progeny rows of 'Bennur' and 2 progeny rows of 'Kattibeeja' showed resistance to wilt. Non-segregating and high yielding among these progenies will be used for commercial cultivation.

Country or International Organization

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