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DETERMINATION OF 50% GROWTH REDUCTION DOSE (GR50) OF GAMMA IRRADIATION FOR LOCAL LANDRACES OF CAULIFLOWER (BRASSICA OLERACEA VAR. BOTRYTIS) AND CABBAGE (BRASSICA OLERACEA VAR. CAPITATA) IN MAURITIUS

Cauliflower *Brassica oleracea* var. *botrytis* and cabbage *Brassica oleracea* var. *capitata* are two important cruciferous crops in Mauritius. Local landraces of both crops are available which are adapted for growth during the cooler months of the year but are susceptible to black rot disease caused by *Xanthomonas campestris* pv *campestris*. A mutation breeding programme was initiated to improve these two landraces, using gamma rays, for disease tolerance and adaptation to hotter climate. The first step in a mutation induction breeding programme is to estimate the dose of irradiation treatment through determination of the dose which reduce seedling growth by 50% (GR50) for the varieties concerned. The moisture content of cabbage and cauliflower seeds were stabilised to 12-14% and these seeds were irradiated using a ¹³⁷Cesium source. Eight different doses (100, 200, 300, 400, 500, 600, 700, and 800 Gy) were used for cabbage and six different doses (500, 700, 900, 1100, 1300 and 1500 Gy) were used for cauliflower. The irradiated seeds of cabbage and cauliflower together with the control were sown in seed trays in a complete randomised design with three replicates. For both cabbage and cauliflower plant seedling survival and height decreased with increasing dose of irradiation. The GR50 based on height of seedling for cabbage was found to be 522 Gy and for cauliflower to be 756 Gy. This showed that cabbage had lower radio sensitivity to gamma rays compared to cauliflower. The GR50 dose obtained for cabbage and cauliflower will be used to irradiate bulk seeds to produce M1 generation in the mutation breeding programme.

Country or International Organization

Mauritius

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