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BANANA MUTAGENESIS IN VITRO: SENSITIVITY OF SHOOTS TO GAMMA RADIATION

Epagri is carrying out a project aimed at the induction of mutants for resistance to banana diseases by irradiation of in vitro shoots of the cultivar SCS451 Catarina. The first step was the determination of sensitivity to gamma rays using doses of 0; 12.5; 25; 37.5 and 50 Gy. As it is known if in a shoot tip after treatment with any mutagen the mutation may be induced in M1V1, however, there is the occurrence of chimerism and further subcultures (M1V2, M1V3, M1V4, etc.) are needed to select and isolate the stable mutants (periclinal chimeras or solid mutants). The shoots used were cultured using the appropriate multiplication and growth media for banana. The experimental unit was composed of 3 flasks in M1V1 and 5 flasks in the others (M1V2 to M1V4) and 5 shoots were always inoculated in each flask. The mean height and shoot regeneration rate (number of shoots formed at the number of inoculated shoots) were evaluated at the end of each subculture (30-40 days interval). The treatments that received the two highest doses (37,5 and 50 Gy) presented the lowest regeneration rate (1,91 and 1,48, respectively) and the shortest shoot height (2,09 and 1,72 cm, respectively) at the end of M1V1. However, with the advance of the subcultures, the results of these treatments were like the others, so that in M1V4 there were no significant differences. As in mutation breeding whenever possible it is recommended to use more than one dose, based on the obtained results it was concluded that these two doses (37,5 and 50 Gy) can be used for the continuation of the research. For the continuation of the work shoots were irradiated with each of these doses and the material is being led up to the M1V4 generation for the selection.

Country or International Organization

Musa spp., SCS451 Catarina, genetic improvement, gamma rays.

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