

FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



Contribution ID: 280

Type: Poster

IN VITRO TREATMENT OF 'GROS MICHEL' BANANA APICES WITH ETHYL-METANESULFONATE (EMS): A POSSIBILITY FOR OBTAINING BANANA RESISTANCE TO FUSARIUM OXYSPORUM F. SP. CUBENSE RACE 1

Banana's research community is nowadays finding new options to control *Fusarium oxysporum* f. sp. cubense (Foc race 1 and Foc TR4). Although there is a wide number of scientific reports about different techniques for inducing genetic variation for crop improvement, recent information on banana mutation breeding is limited. However, mutation techniques can be considered for finding solutions to control the disease. In order to induce possible genetic variations for resistance or tolerance against Fusarium wilt (by Foc race 1), experiments using the chemical Ethyl methanesulphonate (EMS) for mutation induction in Gros Michel (*Musa AAA*) banana shoot tips were performed at the biotechnology laboratory at CORBANA. Four EMS doses were tested: 0.025, 0.050, 0.075 and 1.0 molar (M). Two controls were included: sterile water and the buffer solution. Total number of treatments were six. A group of 100 apices were separately submerged-in-agitation in each treatment for nine hours. The more effective dose was determined between 0.05 M and 0.025M of EMS. A total of eight in vitro subcultures was performed to the apices. Resulting plantlets showed 90% of surviving, 5% of albinism and a propagation rate of 3.2 plantlets by each shoot tip. A total of 250 plants from each of the more effective EMS treatments were exposed to selection pressure in soil inoculated with a solution of Foc race 1 (1 X 10⁶ spore x water ml). During the experimental period more than 95% of the plants from both EMS treatments showed Fusarium wilt symptoms. The other 5% showed a temporary and partial better performance against the disease. These results confirm that mutation techniques in banana have the potential to be an integrative part in a disease control strategy.

Country or International Organization

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Track Classification: Contribution and impact of mutant varieties on food security