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Mutation breeding in Malaysia

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In Malaysia, the development of mutation induction technology has progressed well, from the phases of capacity building and infrastructure upgrading to research applications in many crops including ornamental plants, which ultimately lead to the generation of new and beneficial mutant lines and varieties. Currently, most of the mutation breeding projects are funded by grants from the Ministry of Science, Technology and Innovation (MOSTI) viz. ScienceFund, TechnoFund, Community Innovation Fund (CIF), MOSTI Social Innovation (MSI), Fundamental Research Grant Scheme (FRGS) from Ministry of Higher Education (MoHE) and International Atomic Energy Agency (IAEA). These projects are mainly collaborative efforts involving various government departments and agencies, research institutes and institutions of higher learning. In agriculture and life sciences, Malaysian Nuclear Agency (Nuclear Malaysia) conducts research and development (R&D) using nuclear technology for the improvement of food and industrial crops and ornamental plants, management of agro-ecosystems for productivity enhancement as well as the development of radiation based bioproducts and bioprocesses. Rice industry has always been a priority based on the strategic importance of rice as a staple food commodity. Although the production of rice is increasing towards population increase, Malaysia still depends on imported rice to fulfill consumer's demand. Malaysia managed to achieve 72% self-sufficiency level in rice with the current average rice yield of 4.1t/ha/season. In this situation, about 28% of the local demand will have to depend on rice imports. In Peninsula Malaysia, rice production depends largely on the irrigated lowland production system. Through ten years of R&D, Nuclear Malaysia succeeded in generating five potential rice mutant lines through ion beam (irradiated at TARRI, formerly known as AVF-Cyclotron, Japan Atomic Energy Research Institute) and gamma rays radiation. Of these, 3 mutant lines (ML3, ML10 & ML30) were produced through ion beam radiation while another 2 mutant lines (NMR151 and NM152) were derived from gamma radiation.

Biography

Sobri Bin Hussein has a wide experience in the area of mutation breeding and advanced air-lift bioreactor system for plant propagation. During the past few years, he and his research team managed to produce many potential mutant lines that can benefit many farmers in his country. Apart from he also manages to publish many research papers in the area of plant biotechnology and plant breeding.

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