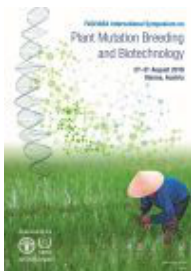


FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



Contribution ID: 253

Type: Poster

FIELD PERFORMANCE OF HEAT TOLERANT MUTANT RICE LINES GENERATED FROM ORYZA SATIVA L AND ORYZA GLABERRIMA

We evaluated mutant lines developed from two species of upland rice, *Oryza sativa* and *Oryza glaberrima*, in field experiments conducted during hot and dry seasons of 2015/2016 in Morogoro, Tanzania. Growth, yield and yield components of 34 Gamma induced mutant upland rice lines developed from: cv. Kihogo red and WAB 56_50, WAB 56_104 genotypes of *O. sativa* and from 14 genotypes of *Oryza glaberrima* were evaluated. The mutant lines were selected based on variable expression of heat shock protein genes (HSPs) in previous heat tolerance studies. The minimum and maximum temperatures and rainfall during the field performance experiment was between 20°C and 35°C, and 32.7 mm and 155.5mm, respectively. Data for 12 yield and yield component parameters such as days to early and 50% flowering, days to physical maturity, plant height, number of tillers, number of panicles, spikelets, filled grains, unfilled grains and 1,000 grain weights were collected and analyzed. Significant differences ($P \leq 0.05$) among the mutant lines were obtained in terms of grain yield, spikelet sterility and other variables, which can be used as criteria for selecting heat and drought tolerant rice lines. Eight heat and drought tolerant mutant rice lines showing high yields over 3.5 ton/ha and low spikelet sterility were selected, and are to be advanced and entered in breeding programmes.

Country or International Organization

Sokoine University of Agriculture, United Republic of Tanzania

Author: Prof. KUSOLWA, Paul (Sokoine University of Agriculture)

Co-authors: Dr LUZI-KIHUPI, Ashura (Sokoine University of Agriculture); Dr SARSU, Fatma (IAEA)

Presenters: Dr LUZI-KIHUPI, Ashura (Sokoine University of Agriculture); Dr SARSU, Fatma (IAEA); Prof. KUSOLWA, Paul (Sokoine University of Agriculture)

Track Classification: Mutation breeding for adaptation to climate change in seed propagated crops