

# FAO/IAEA International Symposium on Plant Mutation Breeding and Biotechnology



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## ADAPTATION OF MUTATION BREEDING FOR ENHANCING COTTON RESILIENCE TO CLIMATE CHANGE IN BANGLADESH

Bangladesh is an agrarian country where, because of climate change the frequency of drought, soil salinity and waterlogging are increasing over the years and adversely affecting the productivity of the field crops including cotton. For sustainable cotton production in Bangladesh, we need to introduce and develop climate resilient cotton mutant varieties. For the introduction of heat tolerant cotton mutant varieties, a field trial was conducted at the Cotton Research Centre, Gazipur in 2016-2017. The performance of two heat tolerant cotton mutant varieties viz. NIAB-KIRAN and NIAB-414 developed at NIAB, Faisalabad, Pakistan was tested against the two local varieties CB-12 and CB-14. Significant differences were found for cotton yield and yield contributing characters among the 4 varieties. The highest node number for initiation of 1st square was recorded from NIAB-KIRON (9.13) and the lowest from CB-14 (7.13). The highest number of bolls per plant (24.67) was recorded from NIAB-KIRON and the lowest (16.33) from CB-12. The highest single boll weight (4.67 g) was obtained from CB-12 the lowest (3.73 g) from NIAB-KIRAN. The highest seed cotton yield, 2.48 t ha<sup>-1</sup>, was obtained from NIAB-KIRAN and the highest fibre length (33.41mm) was recorded from NIAB-414. As for developing local mutant populations, three local varieties viz. CB-12, CB-13 and CB-14 were irradiated at 25, 30 and 35 Gy using Gamma irradiator. at Bangladesh Institute of Nuclear Agriculture (BINA) and the M1 generations were grown at the Cotton Research Farm, Sreepur, Gazipur during 2016-2017. The M2 generations are growing in 2017-2018 for the selection of desirable segregant.

### Country or International Organization

Bangladesh

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