

MM 5.1: Evaluation of cotton production technologies for yield, fibre quality and economic viability

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More than 25 technological interventions in 151 villages were administered to assess them on 1010 farmers fields either through Verification trail or On-farm trial and the total area covered under the project is 600 ha for implementing the technological interventions by all the 12 centers under project.

Crop based Intervention:

In the intervention related to assess the performance of Bt cotton hybrids it has been observed that recommended Bt hybrids have given 21% more yield than conventional hybrids at JNKVV, Khandwa whereas at MAU Parbhani NCS-145 Bt cotton has given 24% more yield than conventional hybrids. In South zone, CICR, RS, Coimbtore reported 10% higher yield in RCH-2 Bt cotton than conventional hybrids.

While assessing the performance of some of the new cotton hybrids, it has been observed that hybrids DHB-290 at ARS Dharwad performed better than DHB-105 hybrid, which has 20.50% higher yield potential than DHB-105. In Central zone, CRU Akola, reported that pre-released desi cotton hybrid AKDH-5 has given 17% more yield than PKV-DH-1. In north zone, ARS, Sriganaganar, cotton hybrid Rs-810 has given 8% more yield than farmers practices.

Among the high yielding American cotton varieties, it was observed that AKH 8828 at CRU, Akola has given 11% more yield than PKV Rajat. In South zone, variety Surabhi at CICR, RS, Coimbtore, reported 36% more yield than LRA-5166.

Dry sowing technology has increased the productivity up to 15% over the farmers practice of monsoon sowing. Planting of cotton on flat bed and opening of ridges and furrows at first intercultural operation has increased the productivity up to 15% over farmers practices of sowing of cotton on flat bed without opening of ridges and furrow.

Among the various cotton based intercropping systems, it was observed that intercropping of cotton + Groundnut gives 46% more yield of seed cotton than cotton + vegetable in south zone. In central zone, it was observed that cotton + Soyabean gives higher yield i.e 17% as compare to cotton + Green gram and cotton + Pigion Pea

Plant nutrient based interventions:

Farmers have been characterized by using lower than recommended chemical fertilizers. In central zone it has been observed that on an average 15% more yield can be achieved by adopting Integrated Nutrient Management (INM) model. In north zone the practice of INM increases the productivity upto 12% over farmers practice. In south zone, INM model increases the productivity by 17% over farmers practices. It has been

observed that in south zone, the use of 2% urea and NAA (planofix) @ 4.5 ml/tank of 16 lit.water at flowering initiation and peak flowering stage has decreased the floral shedding and increased yield by 13%

IPM based interventions:

In central zone, when all the major components of IPM in cotton were use in a rational manner, not only farmers have reduced the dependency on chemical pesticides but also harvested 6% more seed cotton. In North zone, IPM practices have increased the productivity upto 7.5% . In South zone IPM model for cotton has given 21% more yield over non IPM plots giving additional profit of Rs.11,110/ha.

Economic Viability:

At CICR Nagpur, input output ratio of Bt RCH-2 (2.16) is found to be higher than bunny -145 cotton hybrid. However, at MAU Parbhani, input output ratio of NCS-145 was (1.64) higher than non Bt cotton hybrid. In IPM model at central zone, input output ratio of IPM practice is found to be higher than non IPM plots. Similarly in North zone and South zone farmers practicing IPM model get higher input output ratio than non-IPM practicing farmers. At 3 the input- output ratio for INM model was higher than farmers practices.