Achievements of Climate Resilient Agriculture Programme during 2022-23

The Climate Resilient Agriculture Programme (CRA Programme) was launched to introduce strategies to combat major climatic threats in farmers' fields in Bihar. Initially the programme was introduced in 8 districts of Bihar out of which ICAR RCER, Patna was given the responsibility to implement in Gaya district (2019), later it was expanded to 30 districts of Bihar in which later implemented in Buxar (2020) by ICAR RCER, Patna. The core objectives of the programme are to create awareness among the farmers on implementation of climate smart technologies and development of on-farm trials at selected villages and KVK farms. Under this programme a total of 2902 acres area covered during 2022-23. A total of 2161 beneficiaries benefited from this programme during 2022-23 which comprises 1105 and 1056 farmers from Gaya and Buxar, respectively. Intervention of zero tillage in Rabi crops (wheat, Chickpea, Lentil and Mustard) was found to increase grain yield in both districts. The grain yield of wheat, chickpea, lentil and mustard under demonstration were 12.41, 3.77, 5.88 and 3.84% higher over local practices at Buxar. Similar trend was reported in Gaya. Highest net return was reported in zero tillage of wheat, i.e. INR 64588 and 73548 in Buxar and Gaya, those were 24.89 and 19.14% higher over traditional broadcasting method. This is due to reduction in cost of cultivation and use of high yielding varieties under CRA programme. Mungbean (Samrat) was distributed to farmers of CRA villages for an area of 500 acres. Line sowing with seed drill improved method had increased grain yield over traditional broadcasting by 17.40 and 12.78% in Buxar and Gaya districts. Under CRA programme, climate resilient varieties of direct seeded rice, raised bed planting of maize and bajra were grown in both districts. It was clearly observed that grain yield of all kharif crops were higher under interventions over traditional practices in both districts. Among the rice varieties, Arize-6444-gold received highest grain yield (i.e. 64.23 and 66.14 q ha^{-1} at Gaya and Buxar) under direct seeded method with highest increase of grain yield over traditional practices, which was 30.41 and 15.06% at Gaya and Buxar district. Demonstration trials showed that all interventions were economically preferable over traditional practices. In rabi season (2022-23) a total of 1246 acres area covered under this programme. This makes 100% achievement of target area. Three most important interventions on economic aspects were wheat-mungbean-rice, chickpea-mungbean-rice and wheaty-mungbean-maize. wheat-mungbean-maize and wheat-mungbean-bajra may be more suitable for small farmers in CRA villages, concerning water scarcity major issue. Under CRA programme, a total of 96 capacity development programmes were conducted, which includes field days (13), farmers trainings (37), exposure visits (33) and other programmes (13). Total participants were 3471 including 19% female beneficiaries. Farmers were taken to farms located in districts and states under exposure visits. Biochar production units were developed in KVK Buxar and Gaya, where 56 qt of biochar produced from harvested rice straw. Feed block produced from straw baler at farmer's field was 24tonnes.

Fig 1: Direct seeded rice (Arize 6444 Gold) at KVK, Buxar

Fig 2: Raised bed maize (DKC 7074) in Ramobariya village of Buxar district.

Fig 3: Direct seeded rice (Arize 6444 Gold) at farmers' field (Manpur, Gaya).