

such as soil salinity, toxicity of heavy metals, drought, and waterlogging. In North Indian plains,



Newly grafted plants kept in grafting chamber for acclimatization

tomato is transplanted during South-West monsoon (July-September) where waterlogging is a serious problem for survival of plant, particularly during early establishment stage. High yielding varieties of tomato can be

successfully grafted over waterlogging tolerant rootstocks of brinjal. At ICAR-IIVR, Varanasi it was observed that, when tomato plants (cv. Arka Rakshak and Arka Samrat) were grafted over brinjal rootstocks (IC-111056 or IC-354557), the grafted plants were able to tolerate waterlogging



Grafted and non-grafted plants exposed for 96 h of waterlogging stress



Healthy grafted tomato plant under 10 days of waterlogging stress

stress up to 7 days during early growth stage (one to two week after union of grafting). In contrast, the non-grafted or self-grafted plants could not survive when they were exposed for more than 48 hr of waterlogging conditions. For grafting tomato onto brinjal, mostly cleft or tube grafting was practiced. Under favourable environmental conditions (RH >90%, ambient temperatures 25-30°C and low light condition), around 90% graft success was achieved. The study indicated that tomatoes can be successfully grafted over brinjal to save tomato crops from waterlogging stress in early growth stage.



Grafted (L) and non-grafted plant (R) earlier exposed for waterlogging stress

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SUCCESS STORY

Backyard poultry harnesses nutritional security and additional income

Sonbhadra district of Uttar Pradesh is a water scarce and hilly area dominated by tribal population belonging to the sub-caste of Gond, Dhuria, Nayak, Ojha, Pathari, Raj Gond, Kharwar, Khairwar, Pahariya, Baiga, Pankha, Panika, Chero, Bhuniya and Bhuniya. Agriculture and forest dwelling is the main occupation of that area. But due to water scarcity, agriculture is possible only in kharif and rabi season. In agriculture lean season their livelihood becomes fragile

and they had to struggle for both ends meal.

ICAR-IIVR has adopted 1000 tribal families of 14 villages under tribal sub-plan to provide them integrated agricultural support for sustainable livelihood. Apart from seasonal vegetables, fruit plants, cereals and pulses, backyard poultry was introduced in that region as a source of income in agricultural lean season. Three breeds namely CARI-Shyama, CARI- Nirbheek and CARI-Debendra, suitable for that region were provided to 600 tribal families during September to December, 2014. Each family was provided with 15 to 20 chicks along with starter feed supplements. The initiative was successful and two success cases are being discussed here:

Case 1: Angad, age 47 years from Bhalukudar village of Padrach gram panchyat, block Chopan of Sonbhadra was provided with 20 day old chicks of CARI-Debendra (a medium-sized dual-purpose bird, produced by crossing coloured synthetic broiler line as male line and Rhode Island Red as female line). It is suitable bird for the Indian consumers due to its

attractive bright plumage colour. All 20 chicks were alive and attained weight of 0.5 kg after 15 days, 1.0 kg after 30 days and 3.5 kg after 160 days. It started laying eggs after 150 days and used to lay 20 eggs per month. Due to desi nature of the eggs, Angad has fetched



Rs. 8-10 per egg which is double than the market price of white colour poultry eggs. Three birds consumed by self and 12 birds sold in the market when they attained average weight of 3 kg @ Rs. 300/kg and earned Rs. 10,800. He was very happy with the performance of the birds and has kept 5 birds for further multiplication.

Case 2: Bishru, age 32 years from Bhalukudar village of Padrach gram panchyat, block Chopan of Sonbhadra was provided with 18 day old chicks of

CARI-Nirbheek (a cross of Indian native breed Aseel with CARI-Red). Birds are active, large in built, pugnacious in nature with high stamina and majestic gait. They are able to save themselves from their predators due to their fighting characters and activeness and are adapted to all



climatic zones of the country. One drawback of this breed is that it does not sit on the eggs for brooding. Bishru has trained the birds for sitting on eggs and developed broodiness in their behaviour. Total 15 eggs have been hatched and next generation chicks were in good health condition. He has sold 70 eggs in market @ of Rs. 10/egg. He has also sold 10 birds and earned Rs. 9,000. Bishru was also very happy with the performance of the birds.

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KVK ACTIVITIES

KVK, Kushinagar

Training programmes: Under human resource development, KVK organized 49 trainings on crop production, crop protection, horticulture, animal nutrition & management, women empowerment, child care and value addition covering 1094 practicing farmers & farm women, rural youth and extension functionaries.

Frontline demonstration (FLD): KVK conducted