

# ARUNDHUTINAGAR

## State Agriculture Research Station, Department of Agriculture Tripura

The State Agriculture Research Station, Arundhutinagar was established in the year 1962 under the Department of Agriculture, Government of Tripura. The main objective of the station is to disseminate the modern technologies among the farming community of Tripura by carrying out research on various aspects. The Research Units of this establishment namely Plant Breeding, Agronomy and Pest Management conducts basic research on different aspects of Upland direct seeded and irrigated conditions. This station was also associated with ICAR UNDP project for conduction of the Front line Demonstrations with Hybrids and HYV's. The state Department of Agriculture has started to promote SRI method of rice cultivation to attain self sufficiency in food grains. Tripura is the leading state of practicing SRI in paddy cultivation, farmers as well as Scientists from different parts of India and abroad are regularly visiting the State. Data collected from several farmers showed a 165% increase in the net return by SRI cultivation over conventional cultivation and highest yield obtained by farmers was 10.71 t ha<sup>-1</sup>.



## Major contributions to AICRIP

### Crop Improvement

#### Varieties released/ identified

- Release of 'AR-11' variety for upland rain fed direct seeded condition.
- Release of high yielding variety, 'Swati' for irrigated eco-system.
- Development of one hybrid culture, ARH-2 for irrigated eco-system.
- Average productivity of 2.7 MT / ha of Hybrid Rice Seed was achieved against the National average of 1.5 - 2.0 MT / ha
- More than 56 breeding lines were developed of which 5 were nominated under Initial Evaluation Trials since 2009 *kharif*.
- The improved scented rice IET-21277 nominated under ASGON 2009, AICRIP

trials is accepted by the farmers and now being grown in areas exceeding 2000 hectare under shallow land situations. Eventually it has been released and notified as “**Improved Harinarayan**” short grain strong aromatic rice by “State Variety Release Committee” in 2012.

- More than 5 HYV's were brought under massive demonstration programme which has lead to the farmers to replace new improved HYV's under different ecologies. 'Sahabhagi dhan' and “Improved Harinarayan (IET-21277)” are about to replace NDR-97 and the local Scented races, respectively. IET - 17612 is a culture considered to be a better alternative to the existing Boro HYV's.
- More than six (6) hybrids and HYVs have been popularized through FLD, TOT and minikit programme.

## Crop Production

### Agronomy

- Green manuring crop gaining acceptance in supplementing the organic manure
- Use of plastic cover over the nursery during boro season has become popular with the rice farmers in the state.
- **System of Rice Intensification-** SRI has been widely accepted by the farmers of Tripura. Presently 38 % of total paddy area is cultivated through SRI method. Increase in yield ranges from 25 - 35 %.
- Application of lime @600 kg per ha in low land rice throughout the State showed improvement in soil health.
- Application of zinc sulphate @15kg per ha in rice based cropping system has got wide acceptance among the farming community.
- Foliar application of 2% potassium nitrate ( $KNO_3$ ) at flowering stage received a positive impact among the farmers to boost up the productivity level.
- Application of water soluble fertilizer (N: P: K) in shifting agriculture system has increased the yield level where application of straight fertilizer is difficult due to land situation and hilly terrain.
- Blending of bio-fertilizer with chemical fertilizer has been followed in nutrition management of rice.



## Crop Protection

### Entomology

- CR 780-1937-1-1, CR 2008-111 and CR 2260-1-1-1-1 was identified resistant against rice ear head bug and CRHR-29 against WBPH.
- RNR 2413 and RP 4643-1020 were found resistant against stem borer.
- Flubendiamide and Fipronil were found effective for the control of stem borer of paddy.
- Blasticide (Isoprothiolane 40 EC and Tricyclazole 75 WP) and the test insecticide (Fipronil 5 SC and Flubendiamide 20 WG) were found compatible and suitable in the management of blast and stem borer & leaf folder.

### Plant Pathology

- CR780-1937-1-1, CRHR32 (Hybrid), DRRH 50, NDR9830145 were found promising against sheath blight and OR190-6-67, MR219, RGL2045 found promising against bacterial leaf blight.
- Fenoxanil 5% + Isoprothiolane 30% @ 2.0 ml/l and Trifloxystrobin 25% + Tebuconazole 50% @ 0.4 g / liter were found to be significantly superior in checking blast disease.
- Use of Trifloxystrobin 25% + Tebuconazole 50% (WG) @ 0.4 g /l proved effective against sheath blight. Need based fungicidal spray with Propiconazole 25 EC and resistant variety (IR-64) with 100% RDN also significantly decreased sheath blight severity and increased grain yield.
- Bactericide namely Kocide 3000 46.1 DF (30% metallic Copper) @ 2.5-3 gm/Lt recommended for checking the spread of BLB disease.
- For the management of false smut disease, Kocide 3000 46.1 DF @ 2.0 g/l, Indofil M-45 75 WP, Kocide 101 77 WP @ 2.0 g/l , Kocide 2000 54 DF , Propiconazole 25 EC and Carbendazim + Mancozeb combination 75 WP were found effective.
- Bio-pesticides viz. Pseudomonas fluorescence and Trichoderma viride are well accepted for seed treatment and soil application by the farmers of this region.