

In order to reduce the usage of Chemical Fertilizers and to encourage the usage of organic manure, Vermi-compost Units at Rythu Bazars, Chittoor & Tirupati are under progress.



Encouraging the use of organic fertilisers and Bio-fertilizers thus initiating INM & IPM activities.

## **System of Rice Intensification (SRI)**

System of Rice Intensification (SRI) is a system of Rice production in which synergistic interactions lead to much higher grain yield.

SRI technology is a "Less Water" method of production which is suitable to poor farmers who have relatively more labour than land and capital.

Dr.A.Satyanarayana, Director of Extension, ANGRAU, Hyderabad visited ATMA Chittoor and conducted press meet and explained SRI technology and its uses to the press through Power Point Presentation.

SRI was first developed in Madagaskar during 1980's. Its potential is under testing in china, Indonesia, Cambodia, Thailand, Bangladesh, Sri Lanka. In Sri Lanka, SRI is practiced in 18 district with encouraging results of doubling the yield. 50,000 to 1,00,000 farmers are experimenting with this system world wide at present. First international conference on SRI was held in China in April, 2002.

In Andhra Pradesh more than 200 farmers are practicing SRI under testing. In Chittoor District 8 acres are under SRI cultivation.

SRI technology uses are - Less external inputs like Less seed (2kg/ac), fewer plants per unit area (25x25 cm), Less chemical fertilizer, More organic manures and less pesticides.

SRI is labour intensive. It creates 50% more man days employments for transplanting and weeding. It offers an alternative to resource poor, who puts in their family labour.

SRI encourages rice plant to grow healthy with large root volume, profuse and strong tillers, non-lodging, big panicle, more and well filled spikelets and higher grain weight, resists insects because it allows Rice to grow naturally.

Everybody believe that Rice is an aquatic plant and grows best in standing water. But Rice is not an aquatic plant, it can survive in water but does not thrive under hypoxic conditions. Rice plants spends lot of its energy to develop air pockets (Aerenchyma tissue) in its roots under continuous inundation. 70% of Rice root tips get degenerated by flowering period.

Under SRI Paddy fields are not flooded but keep the soil moist during vegetative phase. SRI requires only about half as much water as normally applied in irrigated rice.



The Director of Extension, ANGRAU visited Rice field which is cultivating in SRI at Penumur Village of Chittoor District



Weeding Mach

## **SIX MECHANISMS AND PROCESSES FOR 'SRI'**

**1. Early Transplanting** - Seedlings 8-12 days old, when plant has only two small leaves, before fourth phyllochron. More tillering potential when used in conjunction with other SRI practices and also more root growth potential in conjunction with tillering.

**2. Careful Transplanting** - Remove plant from nursery with the seed, soil and roots carefully and place it in the field without plunging too deep into soil. It minimize trauma in transplanting.

**3. Wide Spacing:-** Plant Single seedlings, not in clumps and in a square pattern (25cm x 25 cm or wider) not rows. It gives more root growth potential, when used in conjunction with other SRI Practices because no competition among plants' root systems.

**4. Weeding and Aeration:-** weeding and Aeration is needed because no standing water is there. Use simple mechanical "rotating hoe" that churns up soil. 2 weedings required, but 4 weedings recommended before panicle initiation, first weeding is 10 days after transplanting. Due to reduced weed competition and aeration of soil, giving roots more oxygen and Nitrogen. Each additional weeding after two rounds results in increased productivity up to 2 tones per hector per weeding.

**5. Water Management:-** Regular water applications is required to keep soil moist but not saturated with intermittent dryings, alternating aerobic and anaerobic soil conditions. why, because rice is not an aquatic plant, it avoids root degeneration which occurs with continuous flooding. The root system

challenged to seek out water in the soil and is able to acquire more and more varied nutrients from the soil.

**6. Compost:-** It is applied instead of or in addition to chemical fertilizer. 1 to 5 tons per hectore gives good results without chemical fertilizers because of better soil health and structure and more balanced nutrients supply.

**Root growth:-** Root growth can be massive in response to SRI practices. 3hills under conventional method required 28kg of force to be pulled up. A single SRI rice plant required 53 kg for uprooting.

**Tillering:-** Tillering is greatly increased in SRI. 30 tillers per plant are fairly easy to achieve. 50 tillers per plant are quite attainable. With really good use of SRI, individual plants can have 100 fertile tillers or even more. Because no set back due to early transplanting and no die back of roots. Maximum tillering occurs concurrently with panicle initiation. With SRI positive correlation is found between the number of grains per panicle.

**Nursery Management:-** Seed rate 2kg/ac, Nursery area 1cent/ac, Select healthy seed, Pre-sprouted seeds are sown on raised nursery bed, Prepare nursery bed like garden crops, apply a layer of fine manure, spread sprouted seed sparsely, cover with another layer of manure, mulch with paddy straw and water carefully. Banana leaf sheath may be used for easy lifting and transport of seedlings.

**Main field preparation:-** Land preparation is not different from regular irrigated rice cultivation. Leveling should be done carefully so that water can be applied very evenly. With the help of a marker draw lines both way at 25 x 25 cm apart and transplant at the intersection. At every 5-10 m distance form a canal to facilitate drainage.