

Agronomic Practices

Application of farmyard manure/poultry manure/press mud/green manure : Apply six tonnes of farmyard manure per acre and save 16 kg of N (35 kg of urea). Since farmyard manure is not available in needed quantities, green manuring by *dhaincha*/cowpea/sunhemp is a very practicable alternative. After harvesting wheat or any other preceding crop, apply *rauni* and sow 20 kg *dhaincha* seed presoaked in water for 8 hours or 12 kg/acre of cowpea (20 kg if bold seed is used) or 20 kg/acre of sunhemp up to the first week of May. Apply 75 kg superphosphate per acre to *dhaincha*/cowpea/sunhemp in soils testing low in P and omit application of phosphorus to the succeeding rice crop. Burry 6 to 8 weeks old *dhaincha*/cowpea/sunhemp one day before transplanting of paddy. *Dhaincha* should be preferred in *kallar* and recently reclaimed soils. This practice results in a saving of 25 kg of N (55 kg urea) per acre. To get higher yield practise green manuring and apply recommended dose of nitrogen (50 kg N/acre) to rice grown in loamy sand to sandy loam soils. Green manuring with *dhaincha* also ameliorates iron deficiency in rice. Apply six tonnes of pressmud or 2.5 tonnes of poultry manure per acre to rice and reduce the fertilizer N dose by half and omit the application of fertilizer P to rice even on soils testing low in available P.

Land Preparation : (i) Repair all bunds. Obtain a fine well levelled puddled field to reduce water loss through percolation, to maintain good seedling vigour and to control weeds. (ii) Use laser land leveler for precision land leveling before puddling to enhance on farm water use efficiency and other farm inputs.

Seed Rate and Seed Treatment : Dip the seed in suitable lots in water contained in a tub/bucket. Stir the seed and remove immature grains which float at the top. The heavy seeds will settle down at the bottom. Eight kg of heavy seed is sufficient for transplanting an acre. Heavy seed ensures healthy, sturdy and uniform seedlings. Soak the selected seed in 10 litres of water containing 5 g Emisan 6 (methoxyethyl mercury chloride) and 1g Streptocycline (streptomycin + tetracycline) for 8 to 10 hours before sowing.

Nursery Raising : The time and method of sowing are important for getting healthy seedlings.

(i) **Time of Nursery Sowing :** 15th to 30th May is the optimum time of sowing for all the recommended varieties.

4

(ii) **Land Preparation, Fertilizers and Method of Sowing :** Mix 12 to 15 tonnes of wellrotten farmyard manure or compost per acre in the soil. Irrigate the field to permit the germination of weeds. Plough the field twice after about a week to kill germinated weeds. Thereafter at the time of nursery sowing, flood the field and puddle it well. Bullock drawn and tractor-drawn puddling implements are available for this purpose (Appendix III). Apply 26 kg urea and 60 kg superphosphate per acre to the soil at the last puddling. For raising healthy seedlings broadcast @ 40 kg/acre zinc sulphate heptahydrate (21% zn) or 25.5 kg zinc sulphate monohydrate (33% zn) per acre to nursery. Prepare plots measuring 10m x 2m or of any other convenient size.

Pre-germinate the wet, treated seeds by spreading them uniformly, 7-8 cm thick, over wet gunny bags and cover them with wet gunny bags. Keep the layer of seeds moist by sprinkling water on it periodically. The seeds sprout in about 24 to 36 hours.

Sow the pre-germinated seed @ 1 kg/20 sq. metres by broadcasting. Keep the soil moist by irrigating the plot frequently. To check the damage from birds, broadcast a thin layer of well-decomposed farmyard manure immediately after broadcasting rice seed. Apply another dose of 26 kg urea per acre about a fortnight after sowing so as to get the seedlings ready for transplanting in 25-30 days. However, if a nursery of about 45 days or above is to be transplanted, apply another dose of 26 kg urea after four weeks of sowing. In case, any insect attack or disease appears in the nursery, adopt the recommended plant protection measures.

Irrigate the nursery regularly. The seedlings are ready when they are 20-25 cm tall or with 6 to 7 leaves. If the seedlings in the nursery show the yellowing of leaf-tips, spray them three times with

0.5-1 per cent ferrous sulphate solution (0.5-1 kg ferrous sulphate dissolved in 100 litres of water per acre) at weekly intervals. If the leaves turn rusty brown after becoming yellow, give a spray of 0.5% zinc sulphate heptahydrate solution (0.5 kg zinc sulphate heptahydrate dissolved in 100 litres of water) or 0.3% zinc sulphate monohydrate solution (0.3 kg zinc sulphate monohydrate dissolved in 100 litres of water per acre).

Caution – To avoid the mixing of varieties in the field, do not grow the rice nursery at the site of the last year's threshing.

(iii) Weed Control : *Swank* and some other annual grasses are the main problems in rice nursery. These weeds can be controlled by the application of 1200 ml per acre of any of the liquid formulations of Butachlor 50 EC or Thiobencarb 50 EC (See Page 7) mixed with 60 kg of sand after 7 days of broadcasting pre-germinated rice seed. These herbicides can also be applied on a moist soil 3 to 7 days before puddling and broadcasting of pre-germinated rice seed. Alternatively apply SOFIT 37.5 EC (Pretilachlor + Safner readymix) @ 500 ml/acre as sand mix 3 days after sowing of pre-germinated rice seed.