RECOMMENDED PRACTICES FOR RICE PRODUCTION AS A MAIN CROP IN DRY AND HUMID SUBTROPICAL ZONES (MEDIUM ALTITUDES)

These recommendations are for medium altitude (700-1500 m) areas that include Wangdue, Punakha, parts of Trashigang-Monggar in the dry zone and Tsirang, Dagana, parts of Sarpang, Samtse, Samdrup Jonkhar in the humid zone.

VARIETIES

IR 64

- High yielding tropical semi-dwarf variety
- Matures 145-150 days after sowing.
- Grain quality similar to local white rice
- Milling recovery 65%.
- Slender white grains.
- Yields 5-7 t/ha under average conditions, but responds to higher fertilisation.

Milyang 54

- Japonica/indica cross which originally came from Korea.
- About 95 cm tall and matures 140-145 days after sowing.
- Slender white grains, good eating quality.
- Higher yielding than IR64; yields 6-9 t/ha under moderate management.
- Susceptible to sheath blight particularly in high rainfall humid areas.

IR 20913

- An advanced selection from the cross between Bhutanese (Paro) white rice and an IRRI line.
- About 100 cm tall and matures 120-130 days after sowing.
- Yields over 7.5 t/ha under good management.
- Moderate cold-tolerance at flowering, and early maturity make it suitable for late planting as the main crop.

CROP ESTABLISHMENT

Nursery sowing

- Optimum sowing date: May in dry zone, June in humid zone.
- Seed rate: 50-60 kg/ha.
- Use clean and healthy seeds.
- Seedlings can be raised using wet or semi-dry bed methods (see seedling production leaflet).

PREPARATION OF FIELD

Land preparation is one of the important factors that influences rice yield. It provides good physical, chemical, and biological conditions of the soil for optimum growth.

- Two or three ploughings are needed, followed by puddling and levelling.
- Irrigate the field before ploughing, if dry.
- Plough thoroughly and then flood.
- Drain the water slightly and plough, rotovate or harrow as needed
- A final puddling and levelling may be required just before transplanting.

Repair and maintenance of bunds and the incorporation of chemical fertilizers, if any, should be done before the final puddling.

MANURES AND FERTILIZERS

Farmers routinely apply FYM to rice in the medium altitude areas ranging from 5 to 20 t/ha. FYM contributes significantly to crop nutrition and soil condition.

Our recommendation is to apply about 5-8 t/ha FYM basally, and topdress with 35 kg N/ha 35-40 days after transplanting.

If adequate FYM is not available, apply 75:40:0 NPK kg/ha. Half the N and all the P should be applied as the basal dose. Topdress the remaining N 35-40 days after transplanting. For local varieties, limit N to 50 kg/ha to prevent lodging.

Sesbania aculeata (Dhaincha) can be grown for 6-8 weeks then incorporated as green

manure during land preparation. Sow Dhaincha at a rate of 50-60 kg/ha in April after harvesting wheat or mustard. Topdress 35 kg N/ha at PI for higher yields.

TRANSPLANTING

Transplanting time: June in dry zone, July in humid zone

Traditional random method can be used if:

- Weed pressure is expected to be low.
- Butachlor will be used.
- The terraces are narrow and small.

Line planting should be done if weeding will be carried out with a rotary weeder.

- Use a rope to give a row spacing of 20 cm and within-row spacing of 15-20 cm.
- A plant density of 25-35 per square metre is optimum.

WEED CONTROL

Where weed pressure is low or moderate, 2 hand weedings 20 and 40 days after transplanting are sufficient. Plants should be closely spaced and the first weeding done no later than 30 days after transplanting.

Where weed pressure is high, use line planting and rotary weeding. Two rotary weedings 20 and 40 days after planting are recommended.

If there is no or little shochum but weed pressure is high, Butachlor is a very effective alternative to rotary weeding. It is applied 3-6 days after transplanting at the rate of 30-40 kg/ha of 5% "Punch" granules.

If shochum is a major problem it can be controlled by Sanbird applied at 25-35 kg/ha 4-6 days after transplanting. Alternatively apply NC 311 at 25-30 kg/ha.

As weeding is laborious, and the use of herbicides is undesirable, there must be emphasis on indirect complementary weed control methods like good land preparation, proper water management, and use of weed-free seedbeds and seeds.

WATER MANAGEMENT

After transplanting keep the water level low for 4-7 days until the seedlings recover. Water level should then be increased as the crop grows.

If the supply of water is limited, continuous flooding is not possible. In this case irrigate at short intervals but do not let the field become excessively dry and crack. Flowering is the most critical stage when rice should not be exposed to moisture stress.

Drain water from the field 10-15 days before harvest to enhance ripening.

PLANT PROTECTION

Insect pest and diseases are normally not a major problem in rice at medium altitudes.

HARVEST

Under normal conditions harvesting begins from the first week of October. Harvest the crop when at least 85% of the upper portion of panicles turns straw coloured. Some leaves and stems may still be green at grain maturity, particularly of improved varieties. Local varieties shatter very easily, and timely harvest will minimize grain losses.

For further information contact
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