

RCM-13 (proposed as RC-Maniphou-12) is a short duration variety suitable for as early summer and pre-*kharif* crop. This variety matures in 90-105 days in summer (March-April sowing) season under Manipur conditions. This crop can successfully be followed by main *kharif* crop. RCM-13 bears about 150-200 spikelets per panicle and yield about 4.0-5.0 t/ha under good management. It has soft cooking quality. It can fit to SRI system too.

SEED RATE AND SOWING

Use pure, well filled, disease free seeds, cleaned after proper winnowing. For wet fields, soak seeds in water for 24 to 36 hours and incubate for 24 hours (36 hours in February).

Seed rate:

- Transplanted crop 50-60 kg/ha.
- Broadcast (Puddled field) 65 kg/ha.
- Direct in row (wet sowing) 65-70 kg/ha.

Sowing time:

- Pre-*kharif*: 3rd week of January to 1st week of Feb.
- Summer: 1st week of March to 1st week of April.

PLANTING METHODS

A. Transplanted crop

1. Nursery raising

Nursery bed preparation:

About 700-800 m² area of nursery is required for transplanting of one hectare area. Preparation of nursery bed may be started from November to January (pre *kharif*) and February (summer) depending on the availability of water. The nursery bed should be well puddled and levelled to avoid uneven patches of water.

Manure and fertilizer:

Apply well decomposed FYM/compost @ 1t/700 m² at final leveling of nursery bed. When seedlings are 4-5 cm tall (7-10 days of sowing), apply 10 kg urea and 3.5 kg MOP per 700 m² as top dressing along with 2 kg carbofuran (3G) and spray 40 g of carbendazim 50% WP in 40 litres of water.

Irrigation:

Maintain 2-3 cm of water level initially and drain out completely just before sowing. Increase water level to

just submergence of soil surface and expose the green aerial sprouts.

Uprooting:

Uproot seedlings at 21-25 days after sowing depending on seedling size and availability of water. About 1200 to 1300 bundles of seedlings (40 cm diameter) are sufficient for transplanting of one hectare area. To avoid transplanting shocks, transplant the seedlings immediately (not later than 2 days) after uprooting.

2. Land preparation of main field

A cross ploughing during December-January is desirable. Irrigate the field to 5-7 cm (2-3 inch) depth. Submergence of the soil for 15-20 days before planting is desirable to obtain a weed free plot.

3. Transplanting:

Row planting of 2-3 seedlings per hill at 20×10 cm using beaded ropes will facilitate in intercultural operations and weeding. This will maintain a plant population of 5 lakhs/ha. In random planting, maintain the spacing of 10-15 cm, but can be reduced to 7-10 cm in older seedlings (above 35 days).

Direct Seeded Crop:

Wet-seeding: Faster and better results will be obtained with wet seedling of presoaked seeds during December in fields which can be kept moist (wet). The excess water should be drained out before seeding.

Manuring

Before first ploughing apply 10-15t of FYM/compost per ha.

Basal application:

Fertilizers should be applied @ 21 kg Urea, 87 kg DAP and 32 kg MOP/ha at the time of final leveling.

Top dressing:

Apply 33 kg Urea and 16 kg MOP at 30-35 days after transplanting (tillering stage) after complete removal of water. The remaining Urea (33 kg) should be applied at 45 days of transplanting (panicle initiation stage). (See Table A & B).

Weeding

One or two hand weeding, one at 20-30 days after transplanting (30-40 days after sowing in case of direct

seeded) and second at pre-booting stage (60-70 days after planting) can be taken up depending on weed intensity.

In case of row planting, Japanese weeder can be run in between rows.

More weeding will be required in upland direct seeded crops. Weed infestation can be reduced by continuous submergence of the soil surface to avoid germination by checking exposure of weed seeds to the air.

Irrigation

After 3-4 days of transplanting (35-40 days of sowing), water level should be maintained at 3-4 inch (7-10 cm). However, overflow and leakage of water should be checked specially till 4-5 days after soil application of fertilizers and pesticides.

Plant Protection

Generally, insects and diseases are not serious in early crops. It is found to tolerant to stem borer and resistant gall midge biotype-6. It is also resistant to leaf blast and brown spot. It escapes neck blast during pre-*kharif*. However, to protect the crop from any pests and diseases, two or three prophylactic measures may be adopted. Adoption of plant protection measures at nursery raising (C of Nursery Raising above) will not only favour raising of healthy seedlings but also protect the crop from major pests like gall midge and stem borers and diseases like sheath blight.

- Treat the seed with carbendazim @ 2g/kg of seed.
- After top dressing, one or two prophylactic spray(s) in sunny days with 300-400 ml monocrotophos (36%EC), 400g carbendazim (50% WP) and 20g streptocycline dilute in 400-500 litres of water/ha will protect the crop from most of the pests and diseases. If rain occurs within 3 hours of spraying, the same should be repeated.
- Application of 30 kg of carbofuran (3G)/ha with first top dressing of fertilizer will save the crop from most of the insect pests and nematodes.

To maintain healthy crop, use of potassic fertilizer (MOP) is a much and imbalance application of fertilizers (Urea/DAP) should be avoided.

To check the infestation of stem borer and gall midge flooding of the field for about 7 days to 4-5 inch (10-12

cm) is necessary, while for case worm complete draining out of water for 5/6 days gives good results.

Harvesting

The crop can be harvested when about 80% of the panicles turn hard and golden yellow in colour depending upon the weather conditions. Over maturity should be avoided to reduce shattering loss.

Threshing

Harvested panicles should be stacked on heaps for better grain filling and further drying. These heaps should be turned upside-down for 2/3 days to expose panicles at the bottom. Threshing can be done manually by traditional methods. Grains should be properly winnowed and dried in sun for 5-7 days before bagging and storage.

Drying and Storage

High moisture is a major hindrance on early crop of rice as harvest coincides with the rains. Before storage, grains should be properly winnowed and dried. Hags storage facilitates more than the bulk storage.

Yield and Grain quality

The variety RC-Maniphou-12 (RCM-13) can yield upto 4.5-5.0 t/ha with good management practices.

Own save seed production

To obtain pure and good quality seeds for own use, the following special cares, should be taken up in a separate area (1/20th total cropped area).

(i) Rogue out all the off-types and weeds as and when they are noticed without delay right from the seedlings. Rogue may differ from main variety in any of the characters like plant height, leave size, colour, stem/base colour, shape, growth habit, panicle size and shape, colour and/or size.

(ii) Use proper plant protection measures in this area.

(iii) Use higher proportion of potassic fertilizers and lower of N.

(iv) Rough out all the off-type panicles just before harvesting, and harvest and thresh it separately. Leave about 1m (3-4 ft.) of crop all around the seed plot.

(v) Store the seeds separately in bags or bins after proper drying and check for every 2-3 months, more frequently during rainy days.

(vi) Use of RC bin facilitates safe storage for longer time.

Table A.

Recommended NPK in the form of common fertilizers 60N:49P:30K Kg/ha					
A. If DAP fertilizer is used					
Sl. No	Fertilizers	Total quantity (kg/ha)	Basal dose (kg/ha)	Top dressing	
				30-35 *DAT	45 *DAT
1.	Urea	97	21	33	33
2.	DAP	87	87	-	-
3.	MOP	48	32	16	-
B. If SSP fertilizer is used					
Table B.					
1.	Urea	132	66	33	33
2.	SSP	250	250	-	-
3.	MOP	48	32	16	-

*DAP = Diammonium phosphate,

MOP = Murate of potash,

SSP = Single Super Phosphate

*DAT = Days after transplanting

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PACKAGE OF PRACTICES FOR CULTIVATION OF RICE VARIETY RC MANIPHOU -12 (RCM-13) AS EARLY CROP



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