

About the variety:

Samba Mahsuri Sub-1 is a high yielding medium duration (135 days) submergence tolerant variety suitable for shallow low lands. It has semi-dwarf plant stature (85-90 cm) and good grain quality (medium slender). The variety has high yield potential (4.5-5 t/ha) and can replace other existing low yielding varieties of the same duration during the Kharif season. It can tolerate complete flooding up to two weeks and offers yield advantage of 1-2 t/ha over other varieties under stress conditions. It is the flood tolerant version of Samba Mahsuri (BPT 5204) preferred for its fine grain quality, the largest non-basmati export rice variety in India.

How to grow:

For Samba Mahsuri Sub 1, most of the farmers in Odisha prefer transplanting method. Timely land preparation for nursery and main field can ensure planting at an optimal time. Mechanical transplanting is also fast catching up to save time, labour and cost. Laser levelling can further boost crop performance in larger field plots.

Seed treatment:

Buy certified/ quality seed from reliable sources. Seed priming may be done by soaking the seed in water overnight or brine solution (20%) and washed with water soon after. Remove floating shrivelled or infected seeds, drain and dry the healthy seed in shade for a day or two. Seed treatment with carbendazim 12g per kg seed before seeding is advised in areas endemic to diseases.

Nursery management: For transplanting prepare seedbed during middle of June to early July. Mat nursery is ideal for mechanical transplanting. Primed, treated seed may be used to raise dry/wet or mat nursery for transplanting using pre-germinated seeds @ **40 kg/1000 m²** that would cover 1 ha of transplanted area. While preparing the nursery, apply 1200 kg compost and 2.5 kg of ZnSO₄ /1000m²

Land Preparation and crop establishment:

Apply compost uniformly before first ploughing. Depending on the amount of green manure or compost used, N application can be reduced up to 50 %. The first ploughing, or deep ploughing, should be completed within 2-3 weeks before transplanting begins. The second ploughing should be done 7-10 days after the first ploughing then puddling should be done, ten days after the second ploughing and one day before transplanting. Plough with tractor drawn cage wheel to reduce percolation losses and to save water requirement up to 20%. Transplant 20-25 days old 2-3 seedlings/hill using manually or mechanical transplanter with a spacing of 20 x 15 cm in puddled fields with 2-3 seedlings/hill.

Nutrient management: IRRI promotes Site Specific Nutrient Management concept for nutrient/fertilizer management using a web/mobile based app called Rice Crop Manager (RCM) (<http://webapps.irri.org/in/od/rcm/>). RCM gives fertilizer recommendation based on the variety, soil fertility and target yield of the rice crop. Soil health cards are also issued which the farmer can use to economise fertilizer use for optimising yield. The following are the general recommendations, apply full dose of P & K (60 & 30 kg P₂O₅ and K₂O) at final land preparation and N (120 kg N) in four equal splits; at transplanting, 3, 6 and 9 weeks after transplanting. If submergence occurs, apply 20 kg N per hectare 5–7 days after the water is completely receded, it helps the crop to recover faster.

Weed Management:

Use of weed free seeds, seed bed, irrigation water and clean tools as a good practice. Though puddling and transplanting reduces the weed population, weed seeds germinate in several flushes necessitating weed removal in transplanted fields. Holding a 3-5 cm water level in transplanted fields helps to control weeds and using mechanical weeder (cono/rotary weeder,) further helps to control them. Manual weeding may be done 20-25 DAT. These measures are helpful in the rainy season when uncertainty of rains prevent the use of herbicides. However, application of post-emergence herbicides under clear skies are effective (15-20 DAT) and can reduce the drudgery associated with manual weeding.



Water Management:

Moisture stress at rooting and tillering stage can cause poor root growth leading to reduction in tillering, poor crop stand and low grain yield. Critical stages of water requirement in rice crop are; a) panicle initiation, b) booting, c) heading and d) flowering. Keeping a 5cm layer of water with proper bunds in DSR fields is recommended under rainfed conditions, while alternate wetting and drying is advised in fields with assured water supply. Standing water may be drained off 15-20 days after flowering.

Management of Insect Pests & Diseases:

Clean cultivation, use of disease free seed/seedlings and avoiding excess N application beyond the recommended doses would keep the diseases and insect pests in check. IPM practices also help to avoid serious infestations. However, under very favourable conditions, the farmers may adopt need based sprays of pesticides to reduce damage.

Harvesting:

The crop is ready for harvest when 80% of the panicles turn straw coloured. Harvesting the standing crop with machines and threshing with pedal threshers would reduce the time and drudgery. Dry the threshed paddy on pavements or tarpaulins to bring the grains to 12% moisture for storage.

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