CR 1009 Sub 1

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Rice Fact Sheet

About the variety:

This is an improved version of CR 1009 (Savitri) with Sub 1 gene conferring submergence tolerance at seedling stage up to 15 days CR 1009 Sub-1 is similar to its parent with long duration (155 days), high yield potential (6.0-6.5 t/ha) and moderate resistance to brown spot, blast, brown plant hopper (BPH) and white backed plant hopper (WBPH). It offers a yield advantage of 1-2 T /ha over the other varieties under stress conditions. CR 1009 sub 1 has short bold grains with high milling percentage and head rice recovery. High amylose content with intermediate gelatinization temperature and soft gel consistency makes it suitable for idly making. CR 1009 Sub-1 is recommended as an alternative to CR 1009 in submergence/flash flood prone areas.

How to grow:

For CR 1009 Sub-1, most of the farmers in Odisha prefer transplanting method. Direct seeding also gives good results in submergence prone environments and the optimum time of seed sowing is May to June. 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 in 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 2 g 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 m^2 that would cover 1 ha of transplanted area. While preparing the nursery, apply 1200 kg compost and 2.5 kg of $ZnSO_4$ /1000m^2.

Land Preparation and crop establishment:

Apply available 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 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.

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. In case following general recommendations, apply full dose of P & K (60 & 30 kg P_2O_5 and K_2O) 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: 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. Farmers should avoid growing this variety in the areas that experience prolonged water logging (more than 20 days) of > 25 cm depth following complete submergence.

Management of Insect Pests & Diseases:
CR 1009 Sub-1 is moderately resistant to brown spot and blast. Simultaneously, this variety is moderately resistant to brown plant hopper and white backed plant hopper. 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 practice also help to avoid serious infestations. However, under very favourable conditions, the farmers may adopt need based sprays of 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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