Post-harvest storage: IRRI Super Bag is a farmer friendly storage bag that allows cereal grains and other crops to be safely stored for extend periods. Super Bags extends the germination life of seed for planting from 6-12 months and also control insects and grain pests without using chemicals.

Selected high yielding, short duration rice varieties:

DRR DHAN 44: DRR DHAN 44 is the latest released drought tolerant rice variety in India. It has an excellent yield potential and good grain quality apart from the drought tolerance. It is resistant to blast, moderately resistant to BLB, BPH and WBPH. The approximate maturity time of this variety is 120 days and expected yield is 2000 – 2200 kg/acre.

DRR DHAN 42: DRR DHAN 42 is the improved version of another popular variety IR 64 with added advantage of drought-tolerance. This variety is gaining popularity due to its high yield, good grain quality and drought tolerance (especially drought at flowering and grain filling stage). The variety is resistant to blast, moderately resistant to bacterial blight and brown spot. The approximate maturity time of this variety is 120 days and expected yield is 2000 – 2200 kg/acre.

SAHBHAGI DHAN: This variety has the potential to survive well under drought conditions due to its ability to take moisture from deeper layers of soil. This variety is suitable for medium and upland rain-fed ecologies. In addition, it is also resistant to leaf folder, whorl maggot, white backed plant hopper, brown plant hopper, gall midge, hispa, thrips, leaf blast and rice tungro virus. The approximate maturity time of this variety is 105 days and expected yield is 1800 - 1900 kg/acre.

BINA DHAN 11: BINA DHAN 11 is a flood tolerant version of Indonesian Mega variety and it can tolerate complete submergence for 2 weeks. The average maturity time of this variety is 120 days and expected yield is 2200 - 2400 kg/acre.

CR DHAN 405: CR DHAN 405 is a short duration salt tolerant variety released for cultivation in coastal saline (suitable up to pH range 5.0-8.0 ds/M) zone. The approximate maturity time of this variety is 110 days and expected yield is 1800 - 1900 kg/acre.

Selected high yielding, short duration, disease resistant Greengram varieties:

IPM 205-7 (VIRAT): It is resistant to Yellow mosaic disease. The approximate maturity time of this variety is 52-55 days and expected yield is 400-480 kg/acre.

IPM 99-125 (Meha): This variety is resistant to yellow mosaic disease. The approximate maturity time of this variety is 65-70 days and expected yield is 450-550 kg/acre.

IPM 02-3: IPM 02-3 is resistant to Yellow mosaic disease. The approximate maturity time of this variety is 65-70 days and expected yield is 480 – 550 kg/acre.

MH 421: This variety is resistant to non-shattering and Yellow mosaic disease. The approximate maturity time of this variety is 55-60 days and expected yield is 420-480 kg/acre.

IPM 02-14: This Greengram variety is resistant to all major diseases including Yellow mosaic and leaf crinkle. The approximate maturity time of this variety is 65-70 days and expected yield is 380 - 450 kg/acre.

Selected high yielding, short duration, disease resistant Blackgram varieties:

VBN 8: VBN 8 is resistant to yellow mosaic virus disease and moderately resistant to powdery mildew. The approximate maturity time of this variety is 65-70 days and expected yield is 350-400 kg/acre.

PU-31: PU-31 is resistant to Yellow mosaic disease. The approximate maturity time of this variety is 75-80 days and expected yield is 550 - 600 kg/acre.

PU-35: PU-35 is resistant to Yellow mosaic disease. The approximate maturity time of this variety is 80-85 days and expected yield is 440 - 480 kg/acre.

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Early Pulses for Crop Intensification in Rice Fallows

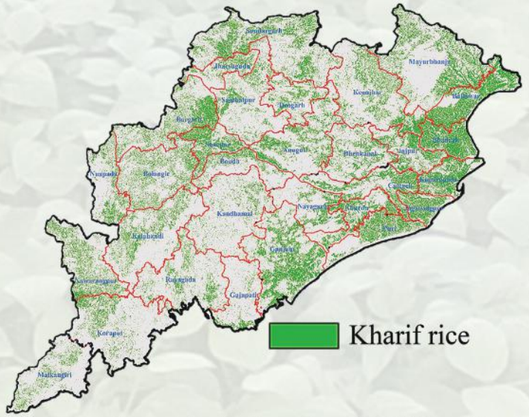
IRRI

Published by

International Rice Research Institute
&
Department of Agriculture and Farmers' Empowerment, Odisha

Substantial area of potentially productive land (1.52 million ha) in Odisha remain fallow during the winter (Rabi) season after harvesting the monsoon (Kharif) rice crop due to six major factor: (1) lack of irrigation water, (2) stagnant water causing waterlogging in the coastal low lands area, (3) high soil or water salinity, (4) long duration local rice cultivars leading to late harvest of the Kharif rice crop, and (5) lack of soil moisture during sowing time in Rabi season, (6) social constraints like tradition of grazing animals during Rabi season.

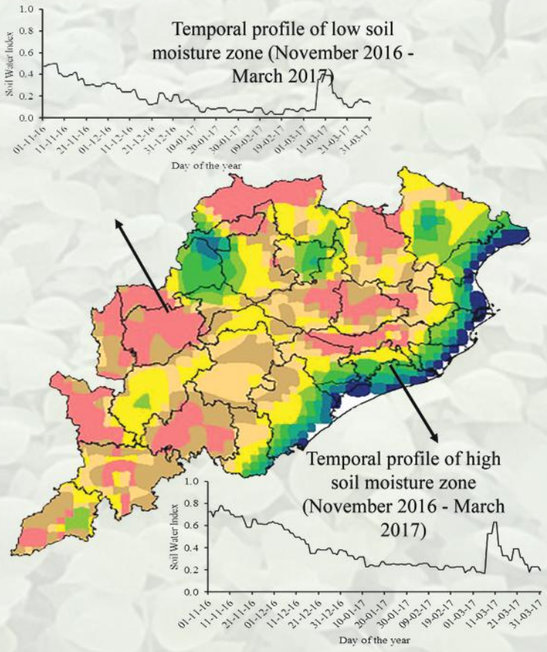
Rice area map of Odisha during Kharif 2016



Increasing the productivity and profitability of the low productive area is a major challenge for the state. Pulses and oilseeds can be grown in the rice fallow areas during Rabi season due to its low irrigation requirements to enhance intensification and diversification in rainfed rice-fallow area. Pulses are important crops, which help in ensuring

Rice-Fallow area map of Odisha during 2016-17

Soil Water Index map of Odisha



food and nutritional security by providing protein in the diet. It helps in maintaining the fertility of the soil through fixation of atmospheric nitrogen and also helps enhance the productivity of the crops in next cropping system.

Initial residual soil moisture after rice crop need to be sufficiently available for germination of the pulse seed. Hence, suitable short duration (100-120 days) rice varieties (e.g. BINA DHAN 11, CR DHAN – 405, SAHABHAGI DHAN, DRR DHAN 42, DRR DHAN 44 etc.) are selected and promoted during Kharif season in the Rice-fallow areas.

Major guidelines for Pulse cultivation:

Selection of field and land preparation: Sandy loam to clay loam soils with good drainage is ideal. A well drained deep soil free from excessive soluble salts with pH 6.5 to 8.5 is desirable. One deep ploughing followed by harrowing and planking ensures good seed bed.

Seed treatment: Seeds should be treated with fungicides and insecticide followed by inoculation with Rhizobium and phosphate solubilizing bacteria (250g / 10kg seed).

Seed rate and method of sowing: Seed rate should be maintained 8-10kg/acre. Sowing to be done in lines, preferably with the help of seed cum fertilizer drill and depth of seed to be kept at 3-5cm from the ground level. The distance between row to row need to be 30cm and plant to plant is 8-10 cm.

Fertilizers: NPK @ 8:16:8 kg/acre should be applied as BASAL application. Foliar spray of 2-2.5% urea at the time of flowering or pod formation can increase the yield. In addition, micronutrients can be applied in case of deficiency.

Weed control: Weeds can be controlled by pre-emergence herbicides with pendimetalin within 48 hours of sowing and one manual weeding at 25-30 Day After Sowing.

Pest and disease control: For control of pest and insects, spray 0.1% malathinor 0.018% spinroad or 0. 015% indoxcarb when disease symptoms are observed. Spray can be repeated after care of food borers and sucking pest. The spray of insecticides is effective at the time of flowering to achieve maximum yield.

Irrigation: Depending on the soil moisture availability during spring/summer, 3-4 irrigations is required at one week interval (starting 25 Day After Sowing).