

Leaf blast

Typical pyriform or spindle shaped leaf lesions appear on the leaf and often develop greyish centers and coalesce on leaves. After appearance of 8-10% or more leaf infection in case of leaf blast, apply Tricyclazole at the rate of 0.6 g /lit to control the disease.

Neck blast

Look for appearance of dark, necrotic lesions at the panicle neck or branch of the panicle. The panicle or branch breaks at the infection point. Panicles are greyish and have either partially filled or no filled grains. After appearance of 8-10% or more panicle infection by neck blast, apply Tricyclazole at the rate of 0.6 g/lit or Hinosan 50EC at the rate of 0.1% or Kitagin 17G granules at the rate of 25 kg/ha to control the disease.

Harvesting

Harvest the crop at 25-30 days after flowering. Threshing, winnowing and proper drying is done before storage. Dry to 12% moisture level for storage.

Cropping system

Grow arhar as mixed cropping with upland rice. The ratio should be four rows of rice and one row of pigeon pea. Grow horse gram after harvest of upland rice to improve soil fertility.



SATYABHAMA

A high yielding drought tolerant upland rice variety



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SATYABHAMA

A high yielding drought tolerant upland rice variety

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Drought is the most important abiotic constraint that reduces upland rice production and productivity globally. Water shortage and uneven distribution of rainfall are important factors which further complicate the situation. The problem is more pertinent in Eastern India with more than 10 million hectares of drought-prone fields in states of Jharkhand, Odisha, Chhattisgarh, parts of Bihar and West Bengal with yield loss of around 40 percent, which is valued at 3250 corers of rupees. The situation demands for development resilient variety with drought tolerance. Combining drought tolerance with high yield potential is challenging.

'Satyabhama', a drought tolerant variety with high grain yield in normal season is resilient to change in rainfall distribution. It was recently released by State Variety Release Committee, Odisha for cultivation in drought prone areas of Odisha.

In Odisha state, the variety gives an average yield of 5.3 t/ha under normal condition and 2.7 t/ha under drought situation. The average yield of the variety in the region-III (eastern part) of the country is 4.7 t/ha under normal condition while 2.3 t/ha under drought situation. Maturity duration of the variety is 110 days and plant type is semi-dwarf (100-105 cm) with resistance to lodging. It produces long slender grains (6.75 mm) and 250 panicles per m² with moderate tillering (6-9) and medium panicle length (26-27cm). The variety possesses desirable grain quality characters like high head rice recovery (60%), intermediate alkali spreading value (7.0), intermediate amylose content (24.5%) and L/B ratio of 3.35.

Satyabhama is tolerant to insect pests and diseases like stem borer, leaf folder, rice whorl maggot, white backed plant hopper, gallmidge biotype 1, biotype 5, rice hispa, rice thrips, leaf blast, rice tungro virus disease and glume discoloration.

Features of the variety, Satyabhama

Features		Features	
Plant height	100--105 cm	Kernel length	6.75 mm
Plant type	Semi-dwarf	Kernel breadth	2.02 mm
No. of tillers/plants	6-9	L/B ratio	3.35 mm
No. of panicles/m ²	250	Kernel appearance	White
Flowering duration	85 days	Grain type	Long slender
Panicle type	Compact panicle	Milling recovery	68 %
Panicle exertion	Well exerted	Head - rice recovery	60 %
Awning	Awnless	Alkali value	7.0
Apiculus colour	straw	Amylose content	24.5 %
1000 grain weight	23.5 g	Aroma	Absent

Package of practices for high yield

Land preparation

Make the soil to a fine tilth by using MB plough or more preferably by a rotavator. Seeds should be sown in a properly levelled field.

Seed treatment

Take good quality healthy seed and reject the lighter seeds. Prepare a 20% common salt solution for rejection of light seeds. Dissolve 200 g salt in one litre of water and dip the seeds in the solution. Stir the solution and the floating seeds are removed. Prepare 10 litres of salt solution for 5 kg of seeds and the same solution can be used 3-4 times. Wash the seeds which did not float and dry under sun for two days and use for seeding. This procedure will help in a good healthy crop stand in the field, and uniform growth and flowering of the plants leading to high yield.

Sowing time

Depending on the onset of monsoon rain, sowing should be done after seeing the moisture condition of the soil. Sowing should be started from second week of June and continued maximum up to June end or first week of July.

Soil amelioration

Upland rice soil is normally acidic in nature. Hence, liming is done to reduce the acidity. Mix lime at the rate of 500 kg/ha in moist soil condition before 20 days of seed sowing. If intercropping is taken with arhar, apply 2000 kg of lime and mix with soil before 20 days of seed sowing.

Seeding

Sowing of 80 kg of seed per hectare of land should be done behind the bullock drawn country plough using seed drill at a depth of 4-6 cm with line to line spacing of 20 cm for a good plant stand and high yield. In case of intercropping, sowing of rice with pigeon pea in 4:1 ratio with row to row distance of 20 cm is recommended.

Fertilizer application

Apply N: P: K at the rate of 40:30:20 kg/ha. Apply full P and K fertilizer as basal dose on the furrows before sowing. Apply N in 3 splits -20 kg/ha (44 kg urea/ha) after first weeding after 20 days of sowing, 10 kg/ha in the second split at 35-40 days after seeding and the balance 10 kg of N fertilizer at booting or panicle initiation (PI) stage of the crop.

Weed management

Spray herbicide bispyribac sodium at the rate of 30 g a.i./ha in direct seeded rice for control of major grasses, sedges and broad leaf weeds. This is a post-emergence herbicide and it can be applied after 12 days of sowing. It is available in the market in brand names, viz., Nominee Gold, Segard, Cropstar, Longstar, Longcan etc. If required, one hand weeding after 25-30 days of rice emergence may be adopted. If no herbicide is used, manual weeding should be done twice with 1st weeding at 20-25 days and the other at 40-45 days after rice emergence.

Insect management

Gundhi bug

The bug attacks at milking stage of panicle and sucks the sap from grain causing sterility and partial filling of grain. Further, fungal and bacterial infection causes grain discoloration. When bug population is 5/m², apply methyl parathion 5% or chloropyriphos 5% at the rate of 25 kg/ha dust formulation.

Termite

Termite cuts the root that leads to yellowing and death of plants. For termite problem, treat the seed with Chlorpyriphos at the rate of 700 g a.i./100 kg of seed. Under drought condition, apply carbofuran at the rate of 4 kg a.i. / ha at 20-25 days after germination.

Disease control

Brown spot

Typical leaf spots are small, oval or circular and dark brown. Larger lesions usually have same colour on the edges but have a pale, usually greyish center. Most spots have a light yellow halo around the outer edge. Apply Dithane M 45 (mancozeb) at the rate of 0.12% if 8-10% or more leaf infection appears.