Course Name- Field Crops-I
Course code- BSCAG-211

Cultivation of Rice

Rice (211 = 24)
Origin - Indo – Burma
Botanical Name -Oryza sativa

Area and Distribution:

Maximum area under rice is in Asia. Among the rice growing countries, India has the maximum area (about 40 million hectares) followed by China and Bangladesh. In the respect of production, China (144 million tonnes) followed by India (69 million tonnes). Korea Republic rank first, in average yield per hectare followed by Japan.

Classification:

Rice belong to genus Oryza of Gramineae family. Oryza sativa is a diploid species having 24 chromosomes. The sativa rice varities of the world usually divided into three sub-species:
(1) indica - Rice grown India belongs to the indica sub-species. It is awnless.
(2) japonica - the varieties developed in Japan belong to this sub - species suitable for sub - tropical and warm temperate regions.
(3) javanicn - These sub-species are found mainly in Indonesia. It's awned grain, sparse tillering habit.

Climate:

Crop needs a hot and humid climate The average temperature required throughout the life period of the coupravys from 21 10x7c. Rice is a short day plant. Temperature requirement for blooming is in the range of 235 to 79 Crop season There are three seasons for growing rice in India as given below.

1. Kharif Local name Aus (W. Bengal) Sowing time Harvest time.
2. Rabi Aman May - June Sepoca June - July Now Dec.
3. Summer or Spring Dalua (Orissa) Boro (W Bengal) Nov - Dec. March April.

Soil:

Rice crop grows well in soil having a pH ranges between 5.5 to 6.5.

Improved variety:

In direct, seeded, upland condition, an early maturing variety of 100 to 105 days duration such as Govind, Bala, Cavery, Pusa 2-21 and Nagina - 22 should be selected in direct puddied field, varieties of 115 to 125 days duration like Saket - 4, Katna 18-24 should. Rice varieties such as IR - 20 and Govind are tolerant to bacterial leaf blight. Saket - 4 and Prasad are moderately tolerant to blast disease of paddy.

• IR - 8, Damodar, Jhona - 349, salt tolerant varieties. Madhukar and Chakia - 59 is recommended in standing water up to the level of 120 centimeters and that of jal magan in standing water up to even 3 to 4 meters • Jagannath is a dwarf mutant of T - 141.

• Jaya variety is selection from a cross between TN - 1 and T - 141.

Seed and Seed Rate:

100 kg (about) seed / hectare used in the case of broadcasting of seed.About 60 kg seed is sufficient for one hectare in the case of drilling method.

Manures and Fertilizer:

Total quantity of phosphorus and potash and 25% of total nitrogen should be drilled in the soil at the time of land preparation. After 35-40 days of sowing or at tillering stage, top dress 50% of total nitrogen. The remaining 25% nitrogen should be top dressed at panicle initiation stage.

Seed Bed:

For transplanting one hectare area about 500 square meters area is sufficient for nursery raising method of raising seedlings.

There are three major methods it, wet bed, dry bed, and dapog, for rising rice seedlings.

Dapog Method-This method of raising nursery has been introduced in India from Philippines, 25 to 30 square meters of area is sufficient to raise seedlings sufficient for planting one hectare. Dapog seedlings would be ready for transplanting within 11 to 14 days of sowing.

Diseases:

1. Blast disease: Caused by Pyricularia oryzae.
2. Bacterial leaf blight: Caused by Xanthomsonas oryzae.
3. Bacterial leaf streak: Caused by Xanthomonas translucens.
4. Tungro virus: This disease is caused by virus. Virus is transmitted from diseased plant to healthy plant by the nymph, male and female of rice green leaf hoppers.
5. Khaira caused by zink deficiency growth of the diseased plant is stunted.

Insect and Pests:

1. Rice Hispa: This adults of this insect scarp of upper surface of leaf blade leaving only lower epidermis.
2. Gundhi Bug: Both nymphs and adults cause damage by sucking the plant sep.
3. Green Leaf Hopper: Sogatella fureifera. It also transmits tungro virus disease.

REFERENCES:

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