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

Rice Ratooning Management Practices

Ratoon cropping is defined as cultivation of the re-growth of rice crop from the stubbles after the harvest of crop or managed for next crop cultivation from the re-growth of the stubbles. The word ratoon probably originated from the **Latin word 'retofisus,** which means to cut down or mow. Ratoon as a basal sucker for propagation, such as in banana, sugarcane and pineapple. Rice ratooning depends on the ability of dormant buds on the stubble of the first crop to remain viable. Root vigor and distribution also affect ratooning. Rice ratooning is one practical way to increase rice production per unit area and per unit time.

In India, research on rice ratooning is practiced in Karnataka, Andhra Pradesh, Assam Bihar, Kerala, Odessa, Tamil Nadu, Utter Pradesh and West Bengal.

Advantages of ratooning in rice:

Crop duration in ratoon rice is reduced compared to the main plant crop. Ratoon crop takes about 30 days less for maturity compared to the plant crop. There is reduction in cost of cultivation. Input requirement is less in ratoon rice than to main planted rice crop. There is no seed cost since the ratoon crop is produced from the crop stubbles. Panicle production is 70% of the ratoon rice tillers.

Disadvantages of ratoon rice:

Grain yield per unit area is very poor in ratoon rice as compared to the main plant crop. Rapid leaf senescence of main plant crop causes low ratoon rice yields. Pest and disease occurring and their spread are common both in main and ratoon rice crop. Ratooning rice does provide juicy green leaves on which pests can continue to feed and multiply. Ratoon crop promotes the outbreak of pests in the following season. The beneficial insects cannot survive under rice ratooning practices.

Management of rice ratoon crop:

Total non-structural carbohydrates (TNC) in the stems of the main crop form a storehouse of energy for the second crop. There is a strong correlation between TNC in stems at main crop harvest and ratoon crop yields. Good sunlight and cooler night temperatures contribute significantly to high TNC levels at harvest. Ratoon tillers develop from basal auxiliary buds that exist on the stubble of the main crop plant.

The growth and vigor of ratoon tillers depend on carbohydrate reserves of the stubbles and the root system after harvest of the main crop, Plant with thick stems/culms store more carbohydrate than those with thin culms. Harvest time, cutting height, fertilizer application, irrigation management, plant protection and weed control for the main crop naturally have a bearing on growth and yield of the ratoon crop.

Varieties:

Rice varieties suitable for ratooning in rice are Bhavani, Co 37. ACM 8. ACM 10. ADT 36. ADT 16. PKM 1. IR8. IR42, IET 9668, IR 20, CR1009 and Ponti.

Bhavani is more suitable for ratooning which has recorded grain yield of 4 t/ha. It yields around 58% of main crop yield.

Hybrids offer outstanding ratoon crop performance:

One of the benefits of growing hybrid rice is the ability to achieve outstanding ratoon crop grain yields without sacrificing quality. Grain yields have been recorded as high as 6400 kg / ha in one commercial field, with an average range of 3200 to 5600 kg / ha. Some tips for getting the high yield in ration rice are:

i) Harvest main crop on dry ground to avoid combine rutting.
ii) Apply ratoon crop nitrogen to dry ground and flood up immediately after main crop harvest and Fail mowing of the main crop stubble has increased ratoon crop yields substantially in some fields.

Stubble management: The optimum height of stubbles should be 20 cm height at the time of crop harvest for ratooning rice. Row planting of seedling is must for ratooning rice because the stubbles are uniform in distance after the harvest. There is an advantage to maintain the stubble height at 20 cm during harvest of the crop when the ratoon potential of rice variety is high. When the grain yield potential of rice variety is low, it does not make any difference whether stubble height is high or low. Cutting low takes longer to harvest because you are putting all that straw through the combine. Mowing after harvesting is an alternative to cutting low with a combine.

Spacing: Optimum spacing for ratoon rice is 20 cm x 20 cm or 25 cm x 25 cm.

Nutrient management: Application of fertilizer immediately after the harvest is must. Complete basal application of fertilizers leads to higher grain yield than with split application of fertilizers. Ratoon crops yield is high at nitrogen level of 75% of the main crop. P and K do not influence ratoon rice crop grain yield. 120 kg N per ha in split doses produce maximum grain yield.

Water management: Field should not be flooded until new ratoon tillers are 10-15 cm height. Irrigation to 5 cm depth and one day after disappearance can be practiced in ratoon rice crop.

Growth regulator: Application of growth regulators such as IAA. NAA. GA3 and 2, 4 - D increase the growth and yield of the ratoon rice crop.

Pest management: Ratoon rice favors multiplication of insects such as borer, gall midge, leafhopper and diseases such as grassy stunt virus and yellow dival virus during off season. It is advisable to leave some decomposing organic material in the field or around the fields to provide food and refuge for natural defenders.

Harvest: The best time of harvest of main crop for raising a good ratoon crop is when its color are still green. Stalks should be cut before the main crop is fully matured. Harvest is done at 18-20% grain moisture content. Cutting height at 15 to 20 cm is considered on optimum cutting height above ground for ratoon rice. Main crop cutting height should leave 15 cm of the stem above the water, submerged stubbles may rot and longer stubble may produce weaker tillers.

Yield: In general, ratoon rice produce lower grain yield.

Economics of ratoon rice:

There is no expenditure for preparatory cultivation, seedling cost and less irrigation charges. There is a saving of 30 to 45% in cost of cultivation. Ratoon rice requires less water, input and cost.

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