Legowo system for fish-rice intercropping

Adaptability of the technology

This technology is best suited to small and medium sized farms.

The technology

The advantages of rice-fish inter cropping with the "*Legowo System*" are as follows:

- It provides more space for fish, which makes possible a higher population of fish which are larger in size;
- Weeding, fertilizing, and disease control for the rice can be carried out easily;
- It saves manpower;
- It increases soil fertility.

Rice-fish intercropping based on the "*Legowo System*" can be carried out in 2, 3, or 4 strips or rows. Farmers in Indonesia commonly use a two-row "*Legowo System*". In this cropping system, two strips are planted in rice, while two strips are left empty. The layout of the *Legowo System* is shown in the diagram.

The area chosen for the "*Legowo System*" should:

- Have enough water all the time, and be free from flooding;
- Be in a fertile area;
- Be near to the community.

Preparing the field

- Prepare the rice field with a bank around the edge. The bank should be 60 cm high, and 60 cm wide at the bottom and 30 cm wide at the top.
- Dig a ditch (*parit*) 30-60 cm wide, and 40-50 cm deep. The interval between ditches should be 10-15 cm.
- Prepare inlet and outlet holes for the water, using a bamboo or PVC tube 5-8 cm in diameter.

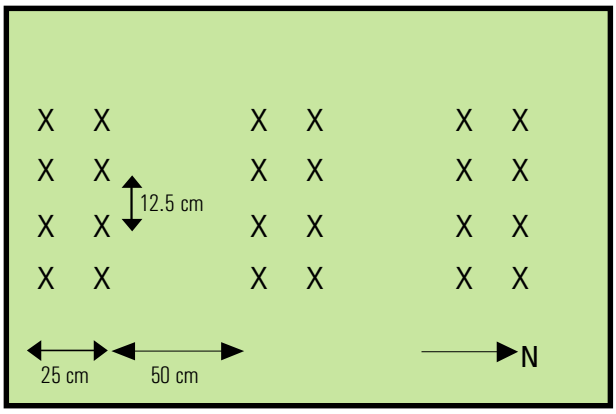

Fig. 1. Diagram of the layout of the field

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Rice planting and fertilizing

- Select a high-yielding variety of rice which is resistant to floods and diseases.
- Plant rice in the field 25-35 days after germination, at intervals of 25 x 12.5 cm between hills.
- Use a planting density of 2-3 plants per hill.
- Adjust the water depth to 10-15 cm.
- Apply fertilizer three times, i.e., two days after planting with 50 kg urea, 150 TSP and 62.5 kg KCl; 20 days after planting with 50 kg urea and 62.5 kg KCl; and 50 kg urea at 40 days after planting.

Introducing the fish

- Select carp (*Cyprinus carpio*), Nile perch (*Mosambica nilotica*) or gouramy *(Oreochromis gouramy*) for fish-rice intercropping;
- Introduce the fish into the rice field 5-7 days after planting for rearing purposes, and 30 days after planting for consumption purposes. The depth of water should be 5 cm if fish are for rearing, and 10-20 cm if the fish are for immediate consumption.
- Maintain a fish density of 30,000 fish per ha for fish 1-3 cm length, 15,000 fish per ha for those which are 3-5 cm length, and 7,500 fish per ha for those which are 5-8 cm length.

Harvesting

- The fish can be harvested at 40-50 days after introduction, depending on the purpose of the rearing.
- Rice harvesting can be carried out in the same way as rice planted in a monoculture technique.

Note: Agricultural technologies are highly location specific. For this reason, please try new technology first on a small scale to see if it works well in your own field.

Fig. 2. Rice-fish intercropping in the Legowo system