Transplanting maize on wetland

In Vietnam, maize is second to rice in terms of economic significance. It is particularly important in crowded areas like the Red river delta which has a population of over 10.6 million people, and where the total area planted to upland grains is around 570,000 ha. In these areas, maize and rice have been rotated with a cropping pattern of spring rice-monsoon rice-winter maize.

Traditional practice allows farmers to transplant maize after harvesting monsoon rice, only when the soil has become dry. This waiting duration could last for several weeks, and plowing cost is rather high. In addition, maize could not be transplanted in time, resulting to low productivity of around 2 tons/ha.

Using this new technology, maize can be planted earlier, leading to higher productivity.

Seed preparation

Fifteen to twenty kilograms of seeds are required for transplanting in 1 ha of land. Good quality seeds are soaked in water at 30-40°C for 12 hours. After 12 hours, the swollen seeds are picked out and washed with clean water.

The seeds are then kept for 36 hours in a container for germination (Fig. 1). It may be necessary to add water to keep the seeds moist. When the sprouts are 1 cm long, the germinated seeds are gently washed with clean water ready for sowing.

Seed preparation

Pregerminated maize seeds are set in mud patches which are cut into square cakes.

The size of the cakes should be 5 x 7 x 7 cm for seedlings planted after more than 10 days.

Fig. 1. Seed sprouts after 36 hours of incubation

Fig. 2. Seedling nursery

Pregerminated maize seeds are set in mud patches which are cut into square cakes.

The size of the cakes should be 5 x 5 x 7 cm for seedlings planted in less than 10 days.

Fig. 3. Planting pregerminated seeds

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**Nursery preparation and sowing**

Planting time of winter maize crop in north Vietnam is in September.

The seedling nursery (Fig 2) should be near the field and irrigation canal where water is available.

The nursery bed is prepared from a mixture of equal amounts of mud and well-composted farmyard manure. One pre-germinated seed is planted in the center of a mud cake at a depth of 1 cm, and then covered with pulverized soil (Fig. 3).

**Seed bed preparation and transplanting**

Soon after rice harvest in September, the wet field is plowed to raise the flat beds. One bed is made for every eight furrows, and the beds are flattened by hoe or hand (Figs. 4 and 5).

**Fertilizer and crop management**

Fertilizer doses per ha of transplanted winter maize in the Red river delta are as follows (Fig. 6):

- Nitrogen (N), 100 kg;
- Phosphorus (P₂O₅), 60-80 kg;
- Potash (K₂O), 20 kg (if required); and farmyard manure, 5-10 tons.

Fertilizer recommendation for other locations has to be calculated based on the soil type and nutrient status. Inorganic fertilizers can be diluted with water and applied directly at the base of the plants.

Under waterlogged conditions (Fig. 7), control must be carried out manually by covering the weeds with mud.