**Corn cultivation in paddy fields**

**Corn** is one of the dryland crops which is often grown as part of a rice-based cropping system, because it has a lower water requirement than dry-season rice. Growing corn also interrupts the population build-up of rice insect pests, particularly brown planthoppers. Corn grown in paddy fields usually has good grain quality and high yields, and fetches a good price. In addition, growing corn during the dry season increases the nation’s annual production to meet its domestic demand.

**Effectiveness of the technology**

When the technology for dry-season corn production after rice was extended to farmers in northeast Thailand, the area of paddy fields planted in corn increased rapidly, from 48 ha in 1997 to 900 ha in 2000. This was because corn gave a higher income than rice. This corn production represents a total of more than US$0.5 million of farm income each year.

**Growing corn in paddy fields**

Corn can only be grown in areas where irrigation water is available during the dry season. After the main rice crop is harvested, the corn crop should be planted as soon as possible (Fig. 1). This should be done according to the following steps:

- A uniform area should be selected, with well-drained soils such as loam, sandy loam or clay loam.
- The planting time for corn in irrigated areas varies from year to year, depending on the time of the rice harvest. However, the best time in northeast Thailand for planting is between October and December.
- After the rice is harvested, the land is plowed, harrowed, and fertilized with 50-60-30 N-P$_2$O$_5$-K$_2$O kg/ha. The soil is then harrowed again, to mix the fertilizer into the soil.

![Fig. 1. Using a two-row planter to seed the corn crop](image1)

![Fig. 2. Hilling the soil up with a rotary cultivator](image2)

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Hybrid corn seed should be used, particularly a single-cross hybrid. The seeds should be sown at a spacing of 0.75 x 0.20 m with 1 plant/hill (66,666 plants/ha). There should be sufficient residual soil moisture after the rice harvest.

Two to three weeks after sowing, urea (45-0-0) at a rate of 156 kg/ha is applied as a top-dressing fertilizer, and the soil is hilled up (Fig. 2).

The corn crop must be given its first irrigation water immediately after top-dressing (Fig. 3). Furrow irrigation is needed two to three times during the growing season, depending on soil and weather conditions (Figs. 4 and 5).

**Precautions**

- Heavy soils, particularly clays used to grow lowland rice, are usually not suitable for this type of corn crop.
- During the corn’s period of early vegetative growth (less than one month after sowing), there should not be any short-term flooding.
- The crop should not suffer from water stress during its reproductive growth stages, particularly during the flowering period.

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**Fig. 3.** Irrigation water applied for the first time, using the furrow method

**Fig. 4.** Corn grown in a paddy field in northern Thailand

**Fig. 5.** Ears of corn at harvest time