

CHILLI CULTIVATION

by

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Introduction

Chilli or hot pepper is botanically known as *Capsicum annuum* L. and it belongs to the Solanaceae family. Many varieties of chillies are planted by the farmers. The fruits are very variable in size, shape, colour and pungency or hotness.

Chilli is a good source of vitamin A, B, C, calcium, phosphorus and iron. It is a very popular fruit vegetable among the Malaysians. Chilli is used in most cuisine, mainly as flavouring. The fruit can be consumed fresh, dried, pickled, spice or processed into sauce. Besides the fruits, young shoots and leaves of chilli plants can also be cooked as vegetables. The pungency of chilli is due to an alkaloid called capsaicin.

Planting material

Chilli may be a home garden vegetable as well as a commercial crop. It is planted from seeds purchased from commercial seed suppliers or collected from own selection.

ARC Semongok has been screening chilli varieties from local and imported sources. The department now recommends ARC-C-C1/L7 (Chilli Tarat), Hot Beauty and Kulai 907 for planting. These varieties are high yielders with good quality fruits and good bacterial wilt disease resistance.

General cultivation

Chilli seeds may be planted in well prepared nursery beds or seeding trays filled with peat or enriched soil. One or two sprays of foliar fertilizers and agrochemicals are necessary for healthy seedling growth. Watering twice a day is required especially during the hot weather. Healthy seedlings are transplanted to the field when they are 4-5 weeks old.

Chilli plants can be grown on most soil types. However, it grows best on well drained, fairly fertile loamy soils at pH 5.5 - 6.8. An ideal area for chilli planting is an open flat to gently undulating land. Flooding is injurious to most chilli varieties. Plants may be grown on raised beds or on flats (without beds) provided the area is not waterlogged and free from floods.

Beds of 15 - 30 cm high, 1.0 -1.2 m wide and 50 -100 cm apart may be prepared. The prepared beds are basal dressed with 1-2 kg/m² of well decomposed chicken dung, 100 – 200 g/m² of dolomite and 30 g/m² of 15:15:15 or 12:12:17:2 + TE at 1 - 2 weeks prior to transplanting. Side dressing with 12:12:17:2+TE at 15-30 g/ plant was given every 1 - 2 weeks until the crop ends.

Plants may be grown in single or double rows. In single row planting, the seedlings are spaced at 60 cm within rows and 1.0-1.5m between rows, whereas in double row planting, the spacing is 60 cm within rows and 60 cm between rows. The planting density is about 11,000 -19,000 plants/ha.

Crop management

The major constraints in chilli production are infestation by pests, fungal diseases and bacterial wilt. There is no effective chemical control for bacterial wilt disease. However, this can be overcome by planting resistant variety, for example Chilli Tarat. The major pests are thrips, aphids, mites, fruit bores, fruit flies and white flies. Anthracnose and Cercospora leaf spot are the common diseases. These pests and diseases should be controlled early by using only registered and appropriate pesticides. Integrated pest management and good agricultural practices should be adopted by the farmers too.

Weeds have to be controlled early. Covering the beds with silver reflective plastic mulch helps to reduce weeds and aphid infestation. Staking is necessary to support the bearing branches of the chilli plants and to minimize lodging. This may be done one month after field planting.

Harvesting and postharvest handling

Chilli fruits are harvested 2 - 2½ months after transplanting. Harvesting is done manually with the aid of a secateur either in the morning or late evening. The fruits may be harvested either green or red depending on their utilization. For fresh market, the fruits are harvested mature but firm. Fruit harvesting is carried out every 3 - 4 days. The harvesting duration is about 3 - 6 months. Yield ranges from 10 - 24 mt /ha /season depending on variety, duration of harvest and level of management.

Besides fresh chilli, ripe fruits are also sold as dried chilli. These ripe fruits are sun dried for 10 - 20 days depending on weather condition. For retail market, chilli fruits are packed in either plastic bags with ventilation holes or in polystyrene trays wrapped with polyvinyl chloride film.

Fresh chilli can keep for 3 - 6 weeks at 5 – 8°C and 90 - 95% relative humidity while dried chilli can be stored for several months at ambient temperature.

Financial returns

The average yield of chilli is 10 - 24 mt /ha /season. The estimated production cost inclusive of wages is RM 25,700 /ha /season. At a farm gate price of RM 2.50 /kg and yield of 17 mt /ha /season, the gross income is RM 42,500/ha/ season. The net income of chilli planting is RM 16,800 /ha /season.



Leaves attacked by mites curled downwards



Leaves curled upwards due to thrips



White flies on the underside of the leaves



Aphids on chilli plants



Fruits attacked by fruit borer



Anthracnose on chilli fruit



Bacterial wilt of chilli plant



Chilli plant fruiting heavily

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