

Delaware State University

Cooperative Extension Programs

Scotch Bonnet

Ethnic crop series

Introduction

Scotch bonnet (*Capsicum chinense*.) is a tropical hot pepper variety that is grown in Latin America and the Caribbean as well as in other tropical regions of the world. The plant is a perennial and grows in an upright position. The fruit consists of the edible portions of the plant and is red orange or yellow at maturity. It has a glossy appearance and has a Chinese lantern shape. The smoky, fruity flavor makes it a highly desirable variety of hot pepper. It has become an important export crop for small farmers in the above-mentioned regions, as farmers with plots of 1000 plants have realized positive returns on their investments.



Seedling production

Start with good quality seeds. It is advisable to purchase seed from a reputable source, one that produces high quality seeds

Good quality soil and pest free conditions are necessary for high quality seedling production. Planting media should have good drainage and be free of soil-borne pests, diseases and weed seeds. Commercially graded soilless media are available to produce seedlings. Alternatively, sterilized soil, compost, manure and mulch can be used to prepare soil. Seeds are sown in trays with 2 seeds per cell at a ¼ inch depth. Seeds germinate in 7 – 12 days.

Nutrient management requires that the soil remains wet through regular watering and an application of N: P: K foliar once per week. One week before transplanting to the field, the seedlings should go through a hardening process to facilitate transition from the greenhouse to the field. Seedling

should be ready to be transplanted into the field within 6 to 8 weeks from sowing.

Land Preparation

Land should be tilled weeks before the crop is planted. Scotch bonnet requires thoroughly well-prepared beds which facilitates good root growth. Furthermore, the crop is usually planted on raised beds, that sometimes incorporates the use of plastic mulch and drip. Organic material such as compost and fully cured manure can be incorporated into the soil prior to planting. Beds should be wetted before plants are transplanted to the field. A soil pH of 6.0 – 7.0 is ideal for optimum scotch bonnet production.

Planting

Even though seedlings may be ready to leave the greenhouse, a soil surface temperature above 60° F is necessary for the newly transplanted seedlings to grow. In addition, the topsoil should be wet and an application of some foliar fertilizer should be applied to the seedlings at the time of planting. Plants should be planted to the same depth as they were in the nursery containers.

A spacing of 3' within rows by 5' between rows is initially recommended for beginning small farmers. Closer spacing may be used as the farmer acquires experience in hot pepper production. This gives a total of 3,630 plants per acre.

Nutrient Management

The main fertilizers required to grow the crop are Nitrogen Phosphorus and Potassium. Table 1 illustrates a suitable N: P: K regimen for a new hot pepper farmer.

Very little inorganic fertilizer is necessary if organic materials or cover crops are added to the soil during land preparation.

Irrigation is required if the growing area is not wetted by regular and frequent precipitation. Drip irrigation is recommended, but is not required. Drip irrigation has several

Table 1 Fertilizer program for Scotch Bonnet production

Plant stage	Formulation	Quantity per Plant (grams)
~ 14 days after planting	11:22:22	28
1st flowering ~40 days	8:4:32	14
1st fruit set ~80 days	8:4:32	14
4 weeks interval - sandy soils	11:22:22	28
6 weeks intervals- clay soils	11:22:22	28
Repeated for duration of crop	11:22:22	28

advantages to overhead, ridge and furrow irrigation. Drip irrigation, particularly when used with plastic mulch, facilitates weed control and thus reduces labor costs. Lastly, fertigation calculation makes it possible to feed each plant individually with the desired amount of nutrients and water. This results in less nutrient loss in the environment and fosters sustainable practices.

Weed Control

Weed control is essential for the success of this crop. Myriad approaches can be used for weed control, including plastic or organic mulch. However, materials in the organic mulch should be free of weed seeds, pests and diseases. Mechanical weeding using specific implements can be adopted, but care must be taken to prevent root damage of the pepper crop. Weeds can also be controlled by chemical means

Pest and Diseases

Pests and diseases in hot peppers are divided into four main groups: Insects, Fungi, Bacteria and Viruses. Insects that attack

hot peppers include aphids, whiteflies, cucumber beetle and mites thrips, and nematodes. Fungi diseases include fusarium wilt, Southern blight, and anthracnose, a potential seedborne disease. Bacterial diseases include bacterial spot a potential seedborne disease.

Finally, viral diseases include Tobacco Etch Virus, and Potato Virus Y—two major diseases that are potential seed borne diseases. Other viruses include Pepper Mottle Virus, Pepper Venial Mottle Virus, Tobacco Mosaic Virus, and Cucumber Mosaic virus.

As mentioned earlier, it is highly recommended that seeds are purchased from approved seed sources. In addition, diseased plants should be removed from the field and destroyed. Pests and diseases can be controlled through chemical means. However, adoption of IPM guidelines is essential for good agricultural practices.

Harvesting and Post Harvesting Management

Ideally, hot peppers are harvested approximately 12 weeks after entering the field. Crop should be harvested after they are fully developed and should be harvested during cool and dry periods of the day. This crop can be harvested multiple times. Harvesting is done when the fruit is greenish yellow to yellow for the yellow fruit variety, and greenish –orange to red for the red fruit variety. The fruit is green when immature. Fruits are harvested by snapping the pedicel away from the plant stem.

After harvesting, hot pepper are graded for quality- Hot peppers are graded based on shape, size, bruising, broken, decay, insects infestation, immature, overripe, moulds, and rots.

References

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