

Introduction

Hot peppers are cultivated in all the Regions of Guyana. There is tremendous scope for the expansion of hot pepper production locally. It is one of the commodities targeted for expansion under the Agricultural Diversification Project (ADP) because of the market (both local and export) potential. Farmers therefore need to be familiar with the basic production and postharvest techniques employed in hot pepper production to ensure that optimum yields and fruit quality are achieved.

Varieties

Several cultivars, grown locally are suitable for fresh consumption or processing. They include Wiri Wiri, Miwiri, Bird Pepper, Ball 'O' Fire, 'Bullnose' Scotch Bonnet, Tiger Teeth, West Indian Red, Caribbean Red and Habanero. Varieties identified for the export market includes the West Indian Red, Caribbean Red, Habanero and 'Bullnose' Scotch Bonnet.

Land Preparation and Planting

Soils must be properly tilled (plough and harrow) before transplanting of seedlings occurs. Although peppers can be grown on flat beds, it is advisable to use raised beds. This is preferable since the plants become less susceptible to diseases such as Phytophthora Root Rot. Since peppers require a soil pH between 5.5 and 6.8 for successful production, soils would need to be limed. Once liming is required, this should be

done at the harrowing stage. Lime must be incorporated into the soil at least two to three weeks before transplanting.

Seedlings are ready to be transplanted at the 5-8 true leaf stage, usually 20-30 days after sowing. Transplanting should be done late in the afternoon and should be followed immediately by irrigation. The general recommendation for seedlings to be planted is 60-75 cm (24-30") apart within rows and 60cm(24") between rows. This results in 376,000 plants/ha (15,000/acre). For the 'Bullnose' Scotch Bonnet variety the recommended spacing is 1m x 1 m (10,000 plants/ha).

Fertiliser

Fertiliser needs are related directly to the type and nutrient status of the soil. It is essential therefore that a soil analysis be conducted so that a precise recommendation for fertilizer application can be provided. Contact NARI for all soil analysis and fertilizer recommendations. In the absence of a soil analysis, the following is an approximate guide.

Urea - 66k/gha

-40% of N should be applied as a basal fertilizer before transplanting

-the remaining 60% of the N should be side dressed in 3 equal amounts at 2,4 and 6 weeks after transplanting

Triple Super Phosphate (TSP) - 75 kg/ha

-50% should be applied as a basal fertilizer

-50% should be side dressed at 4 weeks after transplanting

Muriate of Potash (MOP) - 80 kg/ha

-50% should be applied as a basal fertilizer

-50% should be side dressed at 4 weeks after transplanting can be used for control.

PEST MANAGEMENT

Cutworms

Cutworms cut leaves and young stems damaging seedlings and transplants above or below the soil surface. These can be controlled with insecticides such as Sevin or Basudin at the recommended rate.



Mites

Mites cause the leaves to become deformed and curled. The leaves may appear rusty, especially on their lower surfaces. If the infestation is severe, the entire plant becomes stunted. Mites can be controlled with chemicals such as Pegasus or Vertimec at the recommended rate.



Leaf Miner

Leaf Miner infestation results in irregular trails on the leaves which become blotchy. Heavy infestations can result in yellowing and premature leaf abscission and consequent loss in yields. Leaf miners can be controlled with the use of insecticides such as Triazophos or Trigard.



Thrips

Thrips cause pepper leaves to become distorted and curl upward. The lower surface of the leaves develops a silvery sheen that later turns bronze. Thrips can be controlled with insecticides such as Pegasus or Vertimec at the recommended rate.



White Flies

Whiteflies suck sap from leaves causing the leaves to appear mottled, chlorotic and eventually drop. Honey dew is excreted and glazes over leaves, allowing the development of sooty mold. Whiteflies can be controlled with chemicals such as Admiral, Pegasus, or Vydate L at 10mls to 4500mls.



DISEASE MANAGEMENT

Damping Off

Damping Off is caused by a number of fungi. It results in poor germination and the collapsing or toppling over of seedlings. The use of Banrot or Rhizolex is recommended for control.



Bacterial Spots

Bacterial Spots appear as lesions on young leaves. The presence of numerous spots results in leaf yellowing and abscission or a scorched or blighted appearance. Control can be achieved with a rotation of chemicals such as any bactericides.



Bacterial Wilt

Bacterial wilt is caused by soil-borne bacteria which infect through the roots and invade vascular tissue affecting plant water supply. This results in wilting and eventual death of plants. As soon as any of these symptoms appear, plants should be uprooted and burnt. Infected fields should not be replanted with peppers, tomato or boudanger if severe infestation has occurred.



Fusarium Wilt

Fusarium Wilt is caused by a soil-borne fungus. Diseased plants become yellow, weak and die eventually. This disease can be confirmed when the tissue under the bark of the stem appears reddish-brown in colour. There is no chemical control for this disease. Crop rotation should be practiced if this disease was prevalent.



Early Blight

Early Blight is a fungal disease which appears as small irregular brown spots on older leaves. This disease can be managed with a rotation of chemicals such as Manzate, Benlate and Mankocide.



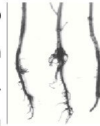
Bacterial Soft Rot

Bacterial soft rot of pepper causes a soft rot of the fruit. It is most frequent when the weather is hot and humid. This disease can be managed by washing the fruits with chlorinated water as well as by applying copper sprays prior to harvest.



Rhizoctonia Root Rot

This infestation causes the taproots to have reddish brown lesions. This can result in stunting, yellowing and leaf-roll symptoms. The recommended control measures are seed treatment with a recommended fungicide or crop rotation.



Powdery Mildew

Powdery Mildew causes the leaves to become chlorotic. The lower surfaces of the leaves are often covered with a white to grey powdery growth. Fungicides such as Tri-Miltox are effective in controlling this disease. Neem treatments have also proven to be effective.



Anthraxnose

Anthraxnose may develop as post-harvest decay of fruits. Control measures including spraying alternately with Benlate, Control and Saprol.



PHYSIOLOGICAL DISORDER

Blossom End Rot

This disorder first appears as a water soaked area on the fruit with the tissue near the blossom end of the pods exhibiting a brown colouration. Discoloured tissue shrinks until the affected areas are flat or concave. This disorder is caused by a calcium deficiency. Liming the soil is the recommended practice to manage this disorder.



Harvesting and Storage

Peppers are generally ready for harvesting about 8 to 12 weeks after transplanting depending on the variety and season of the year. Generally exterior skin colour is used as an index of harvest maturity. Hot peppers may change from green to yellow, orange or red colour. Therefore, the specific colour demanded in the market will dictate when to harvest the fruit.

Peppers should be harvested by grasping the fruit in the hand with the thumb and forefinger and pressing the fruit off the plant. Care should be taken not to sever or damage the fruiting branches while attempting to remove the fruit.

Peppers are typically harvested once per week. They should be picked in the cool hours of the day and placed directly into a field basket, plastic container, or field crate. Never drop or throw pepper fruit into a picking container. Pepper should not be harvested when wet because the surface moisture increases decay.

Peppers should be cleaned by dipping into a tank of water or wiping with a soft cloth to remove dirt, sand and surface stains. If peppers are washed, chlorine should be added to the water at a concentration of 150 ppm (2.4 pints of 5.25 percent chlorine bleach to 100 gallons of water). This will significantly reduce postharvest decay.

The optimum temperature for storage and transport of peppers is 7°C. At this temperature, the market life of peppers will be about 3 weeks. Peppers are susceptible to chilling injury at temperature below 7°C.

Cooling of the pepper fruit immediately after harvest is necessary for maintaining quality and maximizing postharvest life.

Containers of peppers should be loosely stacked in a cool room with space between the containers to allow for sufficient air circulation.

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