hh -1/27/77
20m

KEYS TO PROFITABLE PRODUCTION

L-1165

KEYS TO PROFITABLE SQUASH PRODUCTION

CONTENTS

Production Areas
Climatic Requirements
Soil Types
Land Preparation
Fertilizing
Varieties
Planting
Weed Control
Irrigation
Pollination
Insects
Diseases
Harvesting and Handling

Texas Agricultural Extension Service • The Texas A&M University System • Daniel C. Pfannstiel, Director • College Station

Keys to Profitable Squash Production

Sam Cotner
Roland Roberts
Jerry Parsons
Tom Longbrake
William Peavy
Paul Thompson*

Squash are grown for both fresh market and processing in Texas. The recent trend, however, has been toward processing. High labor requirements and difficulty in controlling virus diseases, primarily in the fall growing season, limit total squash acreage.

Production Areas

Squash are produced over the entire state, with major production in the Rio Grande Valley, Coastal Bend and East Texas areas. Planting begins in late January in the Rio Grande Valley and continues northward through August. Harvesting begins in late March or early April in South Texas and continues in other areas of the state until frost ends production in the fall.

Climatic Requirements

Squash is a warm season crop highly susceptible to frost damage. Best production requires low humidity and moderate temperatures ranging from 60° F. to 80° F. Warm, moist periods increase the incidence of powdery mildew and other foliage diseases. Warm periods with adequate soil moisture favor production.

Soil Types

Although squash can be grown on almost any well-drained, fertile soil, it will not tolerate wet, poorly aerated soils. Good yields can be obtained on slightly alkaline soils, however, best results occur on slightly acid or nearly neutral soils. Light, sandy soils are highly desirable for growing early market varieties.

Land Preparation

Plowing, disking, harrowing and land planing to maintain a correct slope for irrigation and drainage are important land preparations for squash production. Like other cucurbits, squash have large, shallow root systems. Because root growth is rapid and extensive in the upper 6 to 8 inches of soil, thoroughly prepare the upper layers of soil for best results.

Fertilizing

For optimum growth, squash requires good moisture and nutrient availability. During the growing season, apply 40 to 60 pounds of nitrogen and 80 to 100 pounds of phosphorous. Potassium is usually not required except in East Texas. Apply phosphate before or during planting in a band 4 inches below the seed. Apply 25 to 30 pounds of nitrogen per acre at first bloom as a sidedress application. Apply additional nitrogen, if needed, in the irrigation water or as a second sidedressing.

Varieties

Except for trial plantings, grow only varieties proven adapted to your area. Hybrids with increased vigor and high yields are highly recommended. Varieties proven for Texas include the following:

Summer Squash

- Yellow Straightneck
  - Hyrific
  - Butterbar
  - Early Prolific Straightneck
- Yellow Crookneck
  - Yellow Summer Crookneck
  - Dixie Hybrid
- Zucchini
  - Hyzini
  - Aristocrat
  - Zucco
  - Elite Green Hybrid
- Scallop
  - Early White Bush Scallop
  - Benning's Green Tint

* Extension horticulturists, The Texas A&M University System.

Winter Squash

- Butternut
  - Butternut 23
  - Improved Butternut
  - Waltham Butternut
- Acorn
  - Table Queen
  - Ebony
  - Royal
  - Table King (bush)

Planting

Seeding rate and plant spacing depend primarily upon the type of squash. Plant bush-type squash at the rate of 2 to 3 pounds per acre and vining-type squash at 1 to 2 pounds per acre. Vary row spacings from 34 to 40 inches for bush squash and 72 to 120 inches for vining types. In-the-row spacings will vary from 12 to 36 inches for bush squash and 36 to 120 inches for vining types. Plant seeds at a depth of ½- to 1-inch and thin at the 3- to 4-leaf stage.

Weed Control

A preplant application of Prefar at 4 to 6 pounds per acre incorporated 2 to 3 inches deep assures early control of most annual grasses and weeds. When Prefar is used, hold mechanical cultivation to a minimum and keep it shallow. If careless weeds are the primary problem, apply Prefar to the soil surface (not mechanically incorporated) after planting and follow with irrigation, completely wetting the top of the row.

Dacthal may be applied at a rate of 4.5 to 10.5 pounds of active ingredient per acre 4 to 6 weeks after seeding, when plants have 4 to 5 true leaves. Dacthal controls many broadleaf weeds and grasses as they germinate but will not control established weeds or grasses. Use lighter rates on sandy soil.

Irrigation

Squash plants require a fairly constant supply of available moisture for high yields of quality fruit. Depending upon season, soil type and rainfall, 3 to 5 irrigations are usually sufficient. Light, frequent irrigations are desirable, especially on heavier soils or with high temperatures. When furrow irrigating, alternately water every other row.

Pollination

Squash plants have both male and female flowers and require pollen transfer by bees and other insects to set fruit. Lack of pollination causes small, immature fruit directly behind the petals of the female flower to turn yellow and drop.

To insure adequate pollination and fruit set, use one strong hive of bees for each 1 to 2 acres of squash. Place the hives on the windward side of the field when the first blooms appear.

Insects

Major insect pests attacking squash are aphids, squash bugs, spider mites, cucumber beetles, cutworms, vine borers and leaf hoppers. Aphids, squash bugs, spider mites and leaf hoppers are best controlled by applications of parathion at the rate of 0.25 pounds actual material per acre. Apply Sevin at the rate of 1.0 pounds actual material per acre for control of cucumber beetles. Although squash vine borers are often difficult to control, apply lindane weekly at the rate of 0.35 pounds actual material per acre at the plant base for satisfactory control.

Apply all pesticides in late afternoon to prevent injury to pollinating insects. Read and follow label directions concerning pesticide rates, time of application and safety precautions.

Diseases

Most serious diseases of squash in Texas are downy mildew, powdery mildew, gummy stem blight and squash mosaic virus. These diseases should be controlled if a successful crop is expected. As with other cucurbits, diseases of squash are best controlled by using a combination of cultural practices, crop rotation, seed treatment and periodic fungicide applications.

Downy mildew is controlled by regular applications of maneb at the rate of 1.2 to 1.6 pounds active ingredient per acre in sufficient water to obtain good coverage. Powdery mildew control is obtained with regular applications of Karathane at the rate of 0.5 pound per acre or Benlate at the rate of 0.5 pound per acre, repeated every 10 to 14 days. Powdery mildew control has become more difficult in cucurbit crops with the appearance in some areas of a race of the fungus resistant to Benlate.

There are not any effective ways of controlling virus diseases. The control of weeds and insects in squash fields may be of some value in reducing the amount of mosaic. Nematode-infested fields should be avoided, if possible. Soil samples should be collected and sent to a laboratory to determine if nematodes are present. Soil fumigants such as DBCB, Telone or D-D should be used prior to planting if squash are to be grown in nematode infected soil.

Harvesting and Handling

Squash must be harvested every other day during peak production periods to maintain productivity and quality. Daily harvesting often is desirable. Squash are hand harvested, placed in field baskets and hauled to sheds where they are graded, hydrocooled and packed in ½-bushel baskets weighing 20 to 24 pounds or in wire-bound crates or fiberboard cartons weighing about 40 pounds. Squash occasionally are packed in fiberboard cartons weighing 20 to 24 pounds.

Squash are shipped to market under refrigeration and sold at prevailing market prices.

Storage conditions of 50° to 55° F. and 85 to 95 percent relative humidity help maintain summer squash quality for 5 to 7 days. Mature winter squash can be stored successfully for 5 to 6 months at 55° to 60° F. and 70 to 75 percent relative humidity.

For more information on vegetable production in Texas refer to the following publications available from your county Extension office:

MP-1244 *Budgets for Major Rio Grande Valley Vegetables*

MP-675 *Texas Guide for Controlling Insects on Commercial Vegetable Crops*

Part III—

MP-1061 *Suggestions for Weed Control with Chemicals in Horticultural Crops*

MP-902 *Texas Guide for Reducing Vegetable Disease Losses*

Acknowledgment

The authors acknowledge the contributions to this publication by Dr. Jose Amador, area Extension plant pathologist, Weslaco.

Cooperative Extension Work in Agriculture and Home Economics, The Texas A&M University System and the United States Department of Agriculture cooperating. Distributed in furtherance of the Acts of Congress of May 8, 1914, as amended, and June 30, 1914.

15M—11-76, Revision HORT 4-8