

FACT SHEET

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KEYS TO PROFITABLE SQUASH PRODUCTION

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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 is 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 September. Harvesting begins in late March or early April in South Texas and continues in other areas of the state until frost ends production.

Climatic Requirements

Squash, a warm-season crop, is 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 available favor production.

Soil Types

Although squash can be grown on almost any well-drained, fertile soil, it will not tolerate wet, poorly aerated soils. Although good yields can be obtained on slightly alkaline soils, best results oc-

cur 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 planning 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:

*Extension area vegetable specialists in San Antonio, Lubbock and Weslaco, respectively, and Extension horticulturist-vegetables, Texas A&M University.

Summer Squash

Yellow Straightneck

Hyrific

Butterbar

Early Prolific Straightneck

Yellow Crookneck

Yellow Summer Crookneck

Dixie Hybrid

Zucchini

Hyzini

Aristocrat

Zucco

Storr's Green Hybrid

Scallop

Earl White Bush Scallop

Benning's Green Tint

Winter Squash

Butternut

Butternut 23

Improved Butternut

Waltham Butternut

Acorn

Table Queen

Ebony

Royal

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 $\frac{3}{4}$ to $\frac{1}{2}$ inches and thin at the 3- to 4-leaf stage.

Weed Control

A preplant application of Prefar at 4 to 6 pounds per acre incorporated $1\frac{1}{2}$ to 2 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 bed.

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 for continued harvest.

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 colony 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 and cutworms. 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 usually are best controlled by a combination of cultural practices, crop rotation and regular fungicide applications. Control downy mildew by regular application of Maneb at the rate of 2 pounds per acre in sufficient water for good

Table 1. Estimated costs and returns per acre of irrigated South Texas squash, 1972.

	No. of units	Value per unit	Cost	Sub-totals	Totals
Production receipts	175 bu.	@ \$ 3.50			\$612.50
Cash expenses:					
Tractor equipment	10 hr.	@ 0.80	\$ 8.00		
Tractor labor	12 hr.	@ 1.50	18.00		
Other labor (irrigation, hoe, etc.)	15 hr.	@ 1.50	22.50		
Seed	2 lb.	@ 2.25	4.50		
Insecticide	4 appl.	@ 2.00	8.00		
Herbicide Prefar	1 gal.	@ 11.00	11.00		
Fertilizer (40-80-0)	120 lb.	@ 0.11	13.20		
Fungicide	3 appl.	@ 4.00	12.00		
Bees—rent	0.5 hives	@ 10.00	5.00		
Irrigation water	3 appl.	@ 5.00	15.00		
Interest on operating capital @ 8% for 6 months			\$117.20 4.68		
Total				\$121.88	
Land expenses:					
Taxes			\$ 11.00		
Interest on land investment (6% on \$400/acre)			24.00		
Overhead			25.00		
Total				\$ 60.00	
Total production expenses				\$181.88	
Harvesting and marketing expenses:					
Harvesting and hauling	175 bu.	@ 1.00	\$175.00		
Packing-grading	175 bu.	@ 0.30	52.50		
Paper cartons	175 bu.	@ 0.40	70.00		
Selling	175 bu.	@ 0.25	43.75		
Total				\$341.25	
Total expenses					\$523.13
Return to management					\$ 89.37

coverage. Crop rotation and regular applications of Maneb at the above rate controls gummy stem blight. Control powdery mildew with applications of Benlate at the rate of 0.25 pounds per acre at 7- to 10-day intervals. Controlling aphids and leaf hoppers is the only effective way to avoid virus diseases. Removal of diseased plants and destruction of perennial weeds near the fields is recommended. For additional information on disease control, consult Extension publication MP-902, *Texas Guide for Reducing Vegetable Disease Losses*. It is available from your county Extension agent.

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 1/2-bushel baskets weigh-

ing 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 degrees 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 degrees F. and 70 to 75 percent relative humidity.

Cost and Return

Table 1 shows the estimated cost and return of irrigated squash on a per-acre basis.

Cash expenses, land and overhead cost estimates total \$181.88 per acre. These costs represent an average for South Texas and may vary according to area and season.

Table 2 shows the costs for producing and marketing squash per 40-pound bushel. The production cost per bushel decreases with increasing yield, while harvesting and marketing costs remain the same.

Table 2. Cost of producing and marketing irrigated summer squash as influenced by the market yield per acre (40 pounds per bushel).

Yield (bu./A.)	Production cost/bu.	Harvesting, packing, selling	Total cost
125	1.45	1.95	3.40
150	1.21	1.95	3.16
175	1.04	1.95	2.99
200	0.91	1.95	2.86
225	0.81	1.95	2.76
250	0.73	1.95	2.68
275	0.66	1.95	2.61
300	0.61	1.95	2.56

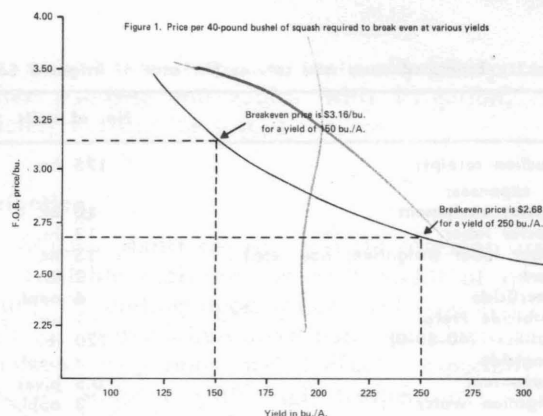


Figure 1 shows the free on board price per bushel necessary to break even at various yields. The curve in figure 1 can be used to estimate potential returns based on expected yields and price.

Trade names are used occasionally for better understanding of information presented. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

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