

## BACKGROUND

### Origin

The term squash comes from a Native American word describing an edible gourd, i.e. a large fleshy fruit with a hard skin. Generally *Cucurbita* is thought to have been domesticated first in Central America or Mexico. The *pepo* species tolerate hot conditions better than other cultivated species of *Cucurbita* and therefore it is widespread and grown throughout the tropics of both hemispheres.

### Climatic and soil requirements

Squashes are warm climate crops requiring a temperature range of 18 to 27 °C for growth, the ideal being 18 to 20,5 °C. Squash is a deep rooted vegetable crop that will grow with limited water. Average rainfall (that is neither too much nor too little) favours growth, however, the roots of most cultivars are sensitive to high soil-water levels. The minimum soil temperature for good germination is approximately 18 °C, and the maximum 30 to 35 °C. Squashes grow best and produce quality fruit in rich, light-textured soil with a pH range of 6,5 to 7,5. Sandy loam or loamy, fertile soils are ideal for squashes.

### Uses

Leaves and young stems are cooked and used as a potherb or added to soups and stews. The edible fruit of the summer squash is used when immature as a table vegetable while that of winter squash is used when ripe. Edible oil is obtained from the seeds. The seeds allegedly make a safe and effective treatment for tapeworms. It is eaten fresh or roasted for the relief of abdominal cramps and distension owing to intestinal worms.

## CULTURAL PRACTICES

### Planting

Spacing between rows for the bush type varies from 1,5 to 3 m, and 3 to 7,5 m for the vine type. In-row spacing will vary from 0,5 to 1,5 m for the bush type, and 1,5 to 2,5 m for the vine type.

### Fertilisation

The nitrogen requirement is about 70 kg to 100 kg/ha. Phosphorus (with a minimum of 40 kg) and potassium dressings are adjusted according to soil analysis figures. Generally, 50 kg of phosphorus and 100 kg of potassium are used. Half to two-thirds of the nitrogen, and all the

phosphorus and potassium, are applied at planting, with the remaining nitrogen being applied 3 to 4 weeks after emergence. The fertilisers 2:3:4 (30) at about 600 kg/ha, and 200 kg LAN as a side dressing, are frequently used. If kraal manure is available, 20 to 40 kg/ha should be worked into the soil.

### Irrigation

The soil should be kept fairly moist until the crop has emerged. To encourage deep rooting the soil should, during the first third of the growing period, be wet to a depth of 450 mm, whenever 90 % of the available soil moisture has been depleted. Watering after planting to activate herbicides and encourage rapid, even emergence



may be necessary during dry periods. A critical period for water also occurs at the start of flowering and early fruit set. Drip irrigation can be encouraged to reduce foliage wetting and for efficient water utilisation.

#### Weed control

Mechanical weed control is practised only in the early stages of growth. Hand weeding is used most frequently. Alternatively, weeds can be controlled chemically using registered herbicides. Cycloxydim (Focus Ultra), Propaquizafop (Agil 100), Haloxyfop-R methylester (Gallant Super and Verdict Super), but the herbicides will not control broad-leaved weeds.

#### Pest and disease control

##### *Mice (Muridae)*

The seeds are dug up before germination and this results in a poor stand. Damage usually occurs on fields near bushes, grass and near a river or pool. Mice can be controlled with poison baits and fumigants.

##### *Root-knot nematodes*

Infested roots have typical knots which obstruct the normal uptake of water and nutrients. The plant growth rate is retarded and despite regular irrigation, wilting may take place. To control nematodes, crop rotation is important. The soil must be moist and free of clods and undecomposed organic matter.

##### *Cutworms*

Clean cultivation of the land about 6 weeks before planting will prevent female moths from laying eggs and any cutworms left in the soil will die because of a lack of food. A poison bait, consisting of bran or mealie meal mixed with an insecticide and water, may be distributed over the land 1 or 2 days before sowing.

##### *Aphids*

Curling of leaves in plants infested with aphids is noticed. Control of aphids is important because they can also transmit virus diseases to plants. Registered insecticides may be applied when the pest is noticed.

##### *Downy mildew*

Symptoms appear as small yellow, often angular spots on the upper surface of the leaves. On the underside of these spots a greyish mildew will eventually form. To control it, overhead watering should be avoided. The crop should be planted where there is good air movement.

##### *Powdery mildew*

Infected plants develop whitish leaf spots on the lower leaf surface, increasing in number and size. These eventually merge and progress to the upper surfaces, finally covering the entire leaf with a white, powdery growth. Use registered fungicides or chemicals. Crop rotation can also be of assistance.

#### CONTACT DETAILS

Directorate Plant Production

Division: Vegetables

Tel: 012 319 6072

Fax: 012 319 6372

E-mail : DPP@nda.agric.za

2008 Department of Agriculture  
Private Bag X250, Pretoria 0001

Design and layout by  
Directorate Agricultural Information Services

## Directorate Plant Production

# • SQUASH •



agriculture

Department:  
Agriculture  
REPUBLIC OF SOUTH AFRICA