

QUANTUM

F1 Hybrid Butternut Squash

OUTSTANDING QUALITIES

- ◆ UNIFORM, MEDIUM-SIZED FRUIT
- ◆ EXCELLENT YIELD POTENTIAL
- ◆ OUTSTANDING INTERNAL QUALITY AND FLAVOUR
- ◆ INTERMEDIATE RESISTANCE TO POWDERY MILDEW

Quantum F1 hybrid is a *Cucurbita moschata* type butternut with medium-sized fruit and excellent fruit quality. Plants are adaptable and vigorous and tend therefore to be less susceptible to diseases. Yield potential is excellent and the fruit are not inclined to crack. Fruit set is excellent and covers a long bearing season. Fruit shape is similar to that of Waltham and the size is smaller than Pluto but larger than Veenas (800 – 1 200 g). The firm, deep orange flesh has an excellent flavour and high sugar content. The smooth rind has a tan colour when mature. Mature fruit have an excellent shelf life.

Quantum is well adapted for warm season harvests where medium sized fruit are required. Fruit are used as traditional butternut; however the superior flesh quality makes **Quantum** suitable for processing and export. **Quantum** has intermediate resistance to Powdery mildew (Px) (ex Sf).




SPECIAL VARIETAL REQUIREMENTS

- **Quantum** performs best in warm season plantings, during cool season production, fruit size is smaller than during summer and may become too small
- Fruit size is affected by plant population: The higher the population, the smaller the fruit size. We suggest 10 000 – 12 000 plants per hectare

CHARACTERISTIC*	QUANTUM
KIND	F1 hybrid squash (<i>Cucurbita moschata</i> (Duchesne) Duchesne ex Poirét)
TYPE	Butternut squash
MATURITY	85- 100 days to harvest as mature fruit
SEASON	Widely adapted for production after danger of frost has passed
PLANT TYPE	Full vine
FRUIT SHAPE	Cylindrical, with a bulbous blossom end
RIND COLOUR	Tan
YIELD POTENTIAL	35 - 50 t/ha
MATURE HARVEST MASS	800 – 1 200 g
SHELF LIFE (MATURE FRUIT)	Excellent
UNIFORMITY	Very high
PLANT SPACING GUIDE	1.6 m between rows, for in-row spacing see page 2
POPULATION GUIDE	Final stand of 10 000 – 12 000 plants per ha
DISEASE REACTION (SCIENTIFIC)	Intermediate resistance: <i>Podosphaera xanthii</i> (ex <i>Sphaerotheca fuliginea</i>) Px (ex Sf)
MARKETS / END USE	Export, fresh market and processing
SPECIAL FEATURES	Very uniform, medium size fruit, superior flesh quality and excellent flavour, excellent yield potential

* Characteristics given are affected by production methods such as soil type, nutrition, planting population, planting date and climatic conditions. Please read disclaimer.

 WARNING: VARIETY PROTECTED UNDER PLANT BREEDERS RIGHTS. UNAUTHORIZED MULTIPLICATION AND/OR MARKETING OF SEED PROHIBITED.

Disclaimer: This information is based on our observations and/or information from other sources. As crop performance depends on the interaction between the genetic potential of the seed, its physiological characteristics, and the environment, including management, we give no warranty express or implied, for the performance of crops relative to the information given nor do we accept any liability for any loss, direct or consequential, that may arise from whatsoever cause. Please read the Sakata Seed Southern Africa (Pty) Ltd Conditions of Sale before ordering seed.

Resistance: is the ability of a plant variety to restrict the growth and development of a specified pest or pathogen and/or the damage they cause when compared to susceptible plant varieties under similar environmental conditions and pest or pathogen pressure. Resistant varieties may exhibit some disease symptoms or damage under heavy pest or pathogen pressure (HR = High resistance, IR = Intermediate resistance).

Recent version: Kindly contact Sakata or Area Representative for the most recent version of this Technical Bulletin.

GENERAL TIPS FOR BUTTERNUT PRODUCTION

Planting time

Butternuts may be planted from early spring to midsummer, or as soon as the danger of frost is over. The decision of planting date depends on the market and environmental conditions. Late summer and autumn plantings can also be done in sub-tropical areas. The size of insect populations and humidity are of particular importance. Insect population (like aphids) increases as the season progresses and accordingly the occurrence of virus diseases.

In the summer rainfall areas, the increase in humidity during summer can lead to serious problems with leaf diseases. These can be avoided to a large extent by planting early. On the other hand, in the winter rainfall areas, early plantings are more susceptible to leaf diseases due to high humidity and low temperatures.

Vegetative growth, flowering and fruit set are greatly affected by temperature. Cucurbits are sensitive to frost and are injured at temperatures below 0 °C.

Temperature has an important effect on pollination. This applies especially to the minimum temperature, as pollen will still be released above the optimum temperature but not below the minimum temperature.

The length of the growing season is determined by temperature. This must be kept in mind when plantings are planned. Early plantings are subjected to relatively low soil and air temperatures at the beginning of the growth period, while late plantings are subjected to relatively low night temperatures at the end of their growth period. Under these conditions the period of the crop on the land is extended. The length of the growing season from planting to harvesting is generally 90 to 100 days under optimal growth conditions.

Butternut is a warm season crop and performs best when soil and air temperatures are above 15 °C.

Susceptibility definition:

Susceptibility (S) is the inability of a plant variety to restrict the growth and development of a specified pest or pathogen.

Tolerance definition:

Tolerance (T) is the ability of a plant variety to endure **abiotic stress** without serious consequences for growth, appearance and yield. Vegetable companies will continue to use tolerance for abiotic stress.

Soil Requirements

Butternuts grow best on well-drained, fertile soil. The plants produce large, shallow root systems very rapidly in the top 20 – 25 cm of soil, which should be prepared into a firm, well-fertilised seedbed. Butternuts do well in soils where 25 – 30 tonnes of well-rotted manure have been applied per hectare. To help avoid soil borne disease problems, select fields that have not had other vine crops, tomatoes or peppers for at least three years.

Butternuts are moderately sensitive to acidic soils. Good results can be expected over a wide range of pH values extending from 5.5 - 7.5 (H₂O). If the soil pH is lower than 5.5, agricultural lime should be applied in accordance with the analytic findings. Agricultural lime should be ploughed in at least four weeks prior to planting season.

Plant spacing guide: Distance between plants in the row.

Between row spacing	Plant population		
	10 000	12 000	1 000
1.0 m	100 cm	83 cm	66 cm
1.6 m	62 cm	52 cm	42 cm

Soil Temperature	Plant response
< 10 °C	No germination
10 – 13 °C	Seed germinates poorly, takes 2 – 3 weeks
13 -15 °C	Seedling emerge within 7 days
20 °C	Optimal root development

Air Temperature	Plant response
< 0 °C	Plants injured
<13 °C	Almost no growth
18 - 27 °C	Rapid growth

Disclaimer: This information is based on our observations and/or information from other sources. As crop performance depends on the interaction between the genetic potential of the seed, its physiological characteristics, and the environment, including management, we give no warranty express or implied, for the performance of crops relative to the information given nor do we accept any liability for any loss, direct or consequential, that may arise from whatsoever cause. Please read the Sakata Seed Southern Africa (Pty) Ltd Conditions of Sale before ordering seed.

Resistance: is the ability of a plant variety to restrict the growth and development of a specified pest or pathogen and/or the damage they cause when compared to susceptible plant varieties under similar environmental conditions and pest or pathogen pressure. Resistant varieties may exhibit some disease symptoms or damage under heavy pest or pathogen pressure (HR = High resistance, IR = Intermediate resistance).

Recent version: Kindly contact Sakata or Area Representative for the most recent version of this Technical Bulletin.