



## OUTSTANDING QUALITIES

- ◆ MEDIUM-LARGE SIZED, BLOCKY FRUIT
- ◆ DARK GREEN TURNING TO BRIGHT RED
- ◆ INTERMEDIATE RESISTANCE TO TSWV AND BACTERIAL LEAF SPOT
- ◆ STRONG PLANT WITH VERY GOOD LEAF COVER

**Shogun\*** has been developed for the production of high quality fruit in open field and shaded production. The medium-large sized fruit has a smooth surface and shallow shoulders and is dark green turning bright red when mature. Plants have a taller growth habit and are suitable for production in areas where Tomato spotted wilt is a problem. **Shogun\*** must be trellised. **Shogun\*** has high resistance to Tobamo viruses (Tm0) and Bacterial leaf spot and intermediate resistance to Tomato spotted wilt (TSWV).

## SPECIAL VARIETAL REQUIREMENTS

- By transplanting young seedlings (2 true-leaves) and removing flowers of the first 3 to 4 nodes, plants are able to develop strong root systems and good canopies allowing for long season production

CHARACTERISTIC*	SHOGUN*
KIND	F1 hybrid pepper ( <i>Capsicum</i> L.)
TYPE	Blocky
MATURITY	Early - medium
FRUIT DIMENSIONS	Approximately 9 x 9 cm (app. 200 - 220 g on two stems)
FRUIT SHAPE	Blocky
FRUIT WALL	Thick
SMOOTHNESS	Smooth surface and shallow shoulders
FRUIT COLOUR	Dark green turning bright red
PLANT TYPE	Taller
DISEASE REACTION (SCIENTIFIC)	<b>High resistance:</b> <i>Tobamo virus (Tm 0)</i> and <i>Bacterial leaf spot Xcv (0-10)S10</i> <b>Intermediate resistance:</b> <i>Tomato spotted wilt virus (TSWV)</i>
PRODUCTION	Open field and shade net production
POPULATION GUIDE	3,6 – 4,8 stems per m <sup>2</sup> under shade net 28 000 – 33 000 plant per hectare
USE	Suggested for pre-packaging, harvest green or red
SPECIAL FEATURES	High quality fruit on vigorous plant, with intermediate resistance to Tomato spotted wilt virus

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

**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).

\* **Experimental:** This variety does not appear on the current South African Variety list, but has been submitted for registration.

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



## GENERAL TIPS FOR SWEET PEPPER PRODUCTION

### Climatic requirements

- Peppers grow best when relative humidity (RH) is 65 - 75 %
- Maintain good ventilation (0.5 m/s) to keep conditions favourable for transpiration
- Pepper plants need good light (1 100 - 1 300 µs/m<sup>2</sup> or 60 000 lux). Heavy shade can induce stress, but light shade stimulates growth
- The ideal temperature is around 18°C (minimum) and 25°C (maximum)
- Temperatures lower than 15°C results in very poor growth
- Temperatures higher than 28°C induce stress

### Blossom end rot (BER)

#### Causes

- Genetic. Varieties differ in their tolerance to this disorder
- BER is usually associated with a localised calcium (Ca) deficiency in the blossom end of young fruit
- High relative humidity limits transpiration and therefore, Ca-uptake
- Low humidity may cause BER as water, with dissolved nutrients flow to leaves and not to fruit
- BER incidence increases when the ratio ppm N-NO<sub>3</sub>: ppm N-NH<sub>4</sub> is < 5:1
- High salinity increases BER

#### Control

- Remove affected fruit as soon as symptoms are visible
- Choose varieties which are less sensitive to BER
- Reduce stress (temperature, light intensity, salinity, etc.)
- Control RH to < 90 % and maintain good ventilation to ensure transpiration and uptake of Ca
- Calcium based foliar spray may help to reduce BER after periods of humid, cloudy weather
- Well balanced nutrient solution

### Powdery mildew

In the production of sweet peppers Powdery mildew is the most common disease and of vast economic importance. The only effective way to control Powdery mildew is to have a holistic approach in the production of sweet peppers.

Conditions that encourage the growth of Powdery mildew include temperatures of 15.5 - 27°C. Powdery mildew spores can survive at temperatures as low as 4°C, under low light intensity and have the ability to germinate in the absence of water.

Conditions that suppress disease development include water on the plant surface for extended periods of time, day temperatures above 32°C and night temperatures above 18°C, direct sunlight and high pH conditions on the leaf surface.

### Flat fruit

#### Causes

- The occurrence of short-blocky or flat fruit is common for some varieties under high temperature conditions
- Low temperatures can cause flat fruit as fertilisation does not take place when the temperature is too low
- Incidence of short blocky fruit increases with high N-concentration in the nutrient solution

#### Control

- Select varieties suited to the environmental conditions
- Control greenhouse temperature to 18 – 30°C, or produce during a cooler time of year
- Keep the ratio ppm N-NO<sub>3</sub>: ppm N-NH<sub>4</sub> to around 5:1 and limit the N-NH<sub>4</sub> concentration to < 32 ppm

### Variety choice

- Know the market preferences resize, colour, fruit quality, packaging etc.
- Know the climate of the area and the greenhouse (rainfall, temperature, humidity, ventilation and air circulation)
- Know which diseases are prevalent in the area and when they occur most commonly
- Get as much information as possible about each variety
- Each variety has its own requirement regarding ideal climate, trellising method, growth habit and disease resistance. Spread the risk by planting more than one variety.

**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).

\* **Experimental:** This variety does not appear on the current South African Variety list, but has been submitted for registration.

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

