



OUTSTANDING QUALITIES

- ◆ LONG LIFE
- ◆ VIGOROUS GROWTH
- ◆ HIGH YIELD POTENTIAL
- ◆ HIGH % FIRST-CLASS FRUIT

Commander is a long life determinate variety with early maturity. Plants are vigorous with very good cover. Yield potential is outstanding with a very high percentage of first-grade fruit. **Commander** performs exceptionally well in the cooler times of the year. **Commander** has high resistance against *Verticillium* race 1 (Vd: 1) and *Fusarium* race 1 and 2 (Fol: 1 - 2) and intermediate resistance against *Bacterial wilt* race 1 (Rs: 1).

SPECIAL VARIETAL REQUIREMENTS

- Contact the area representative for more information

| CHARACTERISTIC* | COMMANDER |
|-------------------------------|---|
| KIND | Determinate F1 hybrid salad tomato (<i>Lycopersicon esculentum</i> L.) |
| PRODUCTION TYPE | Open field |
| FIRMNESS | Very good |
| MATURITY | Early |
| PLANT VIGOUR | Very good |
| SEASON | Year-round culture in frost-free areas |
| FRUIT WEIGHT | 150 - 180 g |
| FRUIT SHAPE | Globe |
| PEDUNCLE | Jointed |
| ATTACHMENT POINT | Medium, neat |
| SHOULDER | Smooth |
| SHOULDER COLOUR | Very light green |
| BLOSSOM END | Neat |
| COLOUR | Internal: excellent External: excellent |
| FLAVOUR | Good |
| UNIFORMITY | Very good |
| LEAF COVER | Very good |
| DISEASE REACTION (SCIENTIFIC) | High resistance: <i>Verticillium dahliae</i> race 1 (Vd: 1), <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> race 1 and 2 (Fol: 1 - 2) Intermediate resistance: <i>Ralstonia solanacearum</i> race 1 (Rs: 1) |
| MARKETS / END USE | Fresh market |
| POPULATION GUIDE | 12 000 - 14 000 final stand per ha (45 - 50 cm in a row, 160 cm between rows) |
| SPECIAL FEATURES | Suited for winter production. Good fruit quality |

* 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.

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GENERAL TIPS FOR TOMATO PRODUCTION

Climatic requirements

Tomatoes can grow at a wide range of temperatures, but for optimum growth, tomatoes prefer temperatures between 10°C (minimum) and 30°C (maximum). The temperature requirements for the different growth stages are given in the table below. Tomatoes do not tolerate frost or waterlogged conditions, and these should be avoided at all cost. The most sensitive stages for water and temperature stress are directly after transplanting, during the flowering stage and during the fruit development stages. Water stress during these stages of tomato development will reduce yield and quality.

| Developmental stage | Temperature °C | | |
|---------------------|----------------|---------|-----|
| | Min | Opt | Max |
| Germination | | 16 - 29 | |
| Vegetative growth | 11 | 21 - 24 | 34 |
| Fruit set (night) | 18 | 14 - 17 | 32 |
| Fruit set (day) | 10 | 19 - 24 | 20 |
| Red colour devel | 18 | 20 - 24 | 30 |
| Yellow colour devel | 10 | 21 - 32 | 30 |
| Chilling damage | 10 | < 6 | 40 |
| Frost damage | | < 1 | |
| Lethal temperature | | < -2 | |

Bacterial canker (*Clavibacter michiganensis*)

Bacterial canker is one of the most dreaded and potentially devastating diseases of tomatoes.

Symptoms

The plant wilts and lower (oldest) leaves show symptoms of necrosis on the leaflet margins and progress towards the midrib. Frequently only one side is affected. If the stems are split open vertically, creamy white-yellow streaks turning reddish-brown can be seen on the internal tissue. The yellow bacterial cells ooze out of the infected portions of the stem.

Prevention and control

Use disease-free seed only, crop rotation (not more than once every 4 years), soil disinfection and sanitation (burning of infected plant material). The use of resistant varieties and/or rootstocks. No chemical control exists.

Growth cracks

Symptoms

Two types of growth cracks occur on fruit. Radial cracks radiate from the stem scar towards the blossom end. Concentric cracking occurs on the fruit shoulder but is splitting in circular patterns around the stem scar. Cracks may appear at any ripening stage depending on the resistance of that specific variety to cracking. The earlier in development the cracks occur, the deeper and longer it often becomes. Cracked areas often become affected with secondary pathogens.

Cause

Cracking relates to the strength and stretching ability of the fruit skin. Fruit of rapidly growing, succulent plants (high nitrogen and low potassium nutrition) are more susceptible. Rain induces cracking as less water is lost due to respiration. Some varieties have partial or good resistance against cracking. Susceptible varieties crack while tomatoes are mature green and less susceptible varieties start to crack in the breaker stage. More tolerant varieties do not crack until they are red ripe.

Control

Proper water management and a good nutritional program are important to prevent overly succulent plants. Choose varieties less prone to cracking.

Phosphorus (P) deficiency

Symptoms

- Shoot growth is restricted
- Thin stems
- In severe cases, leaves are small, stiff and curved downwards
- The upper side of the leaves have a bluish-green colour
- Leaf undersides, including the veins, are purple
- The older leaves are yellow with scattered purple dry spots
 - premature leaf drop

Remedies

Add mono-potassium phosphate to nutrient solution.

Fusarium Wilt (*Fusarium oxysporum f.sp. Lycopersici*)

Symptoms

The wilting of the plants and with a yellowing of the older leaves.

Favourable condition

The fungus is soil borne and infects the plant through the roots (nematodes and other root damage) with quick development when the soil temperatures are high (28 °C)

Prevention and control

Soil sterilisation is required

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