

# PRIMEPAK

## F1 Hybrid Indeterminate Salad Tomato

### OUTSTANDING QUALITIES

- ◆ QUALITY FRUIT
- ◆ VERY GOOD SHELF LIFE
- ◆ MULTIPLE DISEASE RESISTANCE

**Primepak** is an indeterminate salad tomato variety with an excellent disease package. The variety offers high resistance to Verticillium wilt race 1 (Vd: 1), Fusarium wilt races 1 and 2 (Fol: 1 - 2), Bacterial wilt race 1 (RS: 1), Tomato mosaic (ToMV) and Tomato spotted wilt (TSWV). **Primepak** has excellent yield potential and good quality fruit with extended shelf life. The average fruit size is approximately 150 - 180 g when plants are topped. **Primepak** is suitable for production in the open field and under shade net.



### SPECIAL VARIETAL REQUIREMENTS

- Do not over fertilise with nitrogen
- Plants may be topped after seven clusters to maintain good size
- Contact area representative for information

CHARACTERISTIC*	PRIMEPAK
KIND	Indeterminate F1 hybrid tomato ( <i>Lycopersicon esculentum</i> L.)
PRODUCTION TYPE	Under shade net, open field
FIRMNESS	Good
MATURITY	Medium
PLANT VIGOUR	Good
SEASON	Year round culture in frost-free areas
FRUIT WEIGHT	150 - 180 g
FRUIT SHAPE	Deep oblate
PEDUNCLE	Jointed
ATTACHMENT POINT	Small, neat
SHOULDER	Smooth
SHOULDER COLOUR	Light green
COLOUR	Internal: very good; External: excellent
FLAVOUR	Very good
UNIFORMITY	Good
LEAF COVER	Medium
DISEASE REACTION (SCIENTIFIC)	<b>High resistance:</b> <i>Verticillium dahliae</i> race 1 (Vd: 1), <i>Fusarium oxysporum</i> f. sp. <i>lycopersici</i> races 1 and 2 (Fol: 1 - 2), <i>Tomato mosaic virus</i> (ToMV), <i>Tomato spotted wilt virus</i> (TSWV), <i>Ralstonia solanacearum</i> race 1 (Rs: 1)
MARKETS / END USE	Fresh market
POPULATION GUIDE	24 000 – 28 000 final stand per ha for production under protection 12 000 – 14 000 final stand per ha for open field
SPECIAL FEATURES	Adaptable, high Tomato spotted wilt resistance

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

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**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).

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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	11	16 - 29	34
Vegetative growth	18	21 - 24	32
Fruit set (night)	10	14 - 17	20
Fruit set (day)	18	19 - 24	30
Red colour dev.	10	20 - 24	30
Yellow colour dev.	10	21 - 32	40
Chilling damage		< 6	
Frost damage		< 1	
Lethal temperature		< -2	

### Root knot nematode (*Meloidogyne sp.*)

Root knot nematode has a worldwide distribution, and can occur on a wide range of soils, but their association with crop damage is most severe on sandy soils.

#### Symptoms

Diseased plants exhibit typical symptoms of water or nutrient deficiency stress. The foliage may appear yellow and stunted due to reduced translocation of nutrients. The most conspicuous symptoms of infection is the presence of root swelling, called galls, which is evident when plants are uprooted.

#### Conditions for disease development

Life cycle takes 3 - 4 weeks in soil temperatures of 25 - 30 °C.

#### Prevention and control

Non chemical methods of managing nematodes include crop rotation, fallow, heat, flooding and resistant cultivars.

### Soil requirements

In South Africa tomatoes are cultivated on different soil types, from heavy clay to light sandy soil and sandy peat. Tomatoes seem to prefer well-drained sandy soils. Good moisture holding capacity with good drainage is important. Tomatoes grow well at a wide pH range from 5.5 - 7.5, but are sensitive to acid soils and if the pH (H<sub>2</sub>O) is lower than 5.5, additional lime should be applied. The lime should be added 4 - 6 weeks before planting.

Soil preparation depends on the soil conditions and the climatic conditions under which the crop is cultivated. Raised beds are ideal for tomato production. It helps prevent damage from soil compaction and flooding. Raised beds also improve airflow around the plant roots resulting in reduced disease incidence. Before beds are made, the soil should be properly worked to a depth of 40 cm to enhance aeration as well as water penetration and drainage.

### Transplanting in soil

The norm when transplanting is around 10 000 - 14 000 plants per ha for normal open field market tomatoes. Tomatoes produced under protection are planted at a rate of 24 000 - 28 000 plants per hectare.

Only healthy seedlings should be used. Plants with terminal bud damage, or which show any sign of infection should be discarded. Seedlings should be transplanted into a well-irrigated soil, with the roots straight. Under conditions of very high soil temperatures care should be taken not to plant seedlings too deep as burning can easily damage the soft stem tissue, this would also minimize the risk of crown rot diseases.

Watering should occur directly after planting into the compressing hole to the side of the seedling (about 1 liter per seedling). This should eliminate air pockets around the roots and cause contact with the pre-moistened subsoil. Capillary action will keep the seedling moist and encourage the roots to grow down. Cutworm bait or spray is essential to prevent loss of seedlings.

### Disease resistance definition

**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. Two levels of resistance are defined:

**High/standard resistance (HR):** plant varieties that highly restrict the growth and development of the specified pest or pathogen under normal pest or pathogen pressure when compared to susceptible varieties. These plant varieties may, however, exhibit some symptoms or damage under heavy pest or pathogen pressure.

**Moderate/intermediate resistance (IR):** plant varieties that restrict the growth and development of the specified pest or pathogen, but may exhibit a greater range of symptoms or damage compared to resistant varieties. Moderately/intermediately resistant plant varieties will still show less severe symptoms or damage than susceptible plant varieties when grown under similar environmental conditions and/or pest or pathogen pressure.

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