



Wilting of pepper caused by *Phytophthora capsici*



Phytophthora blight (*Phytophthora capsici*)



Tobacco mosaic virus on pepper



Virus symptoms on leaves

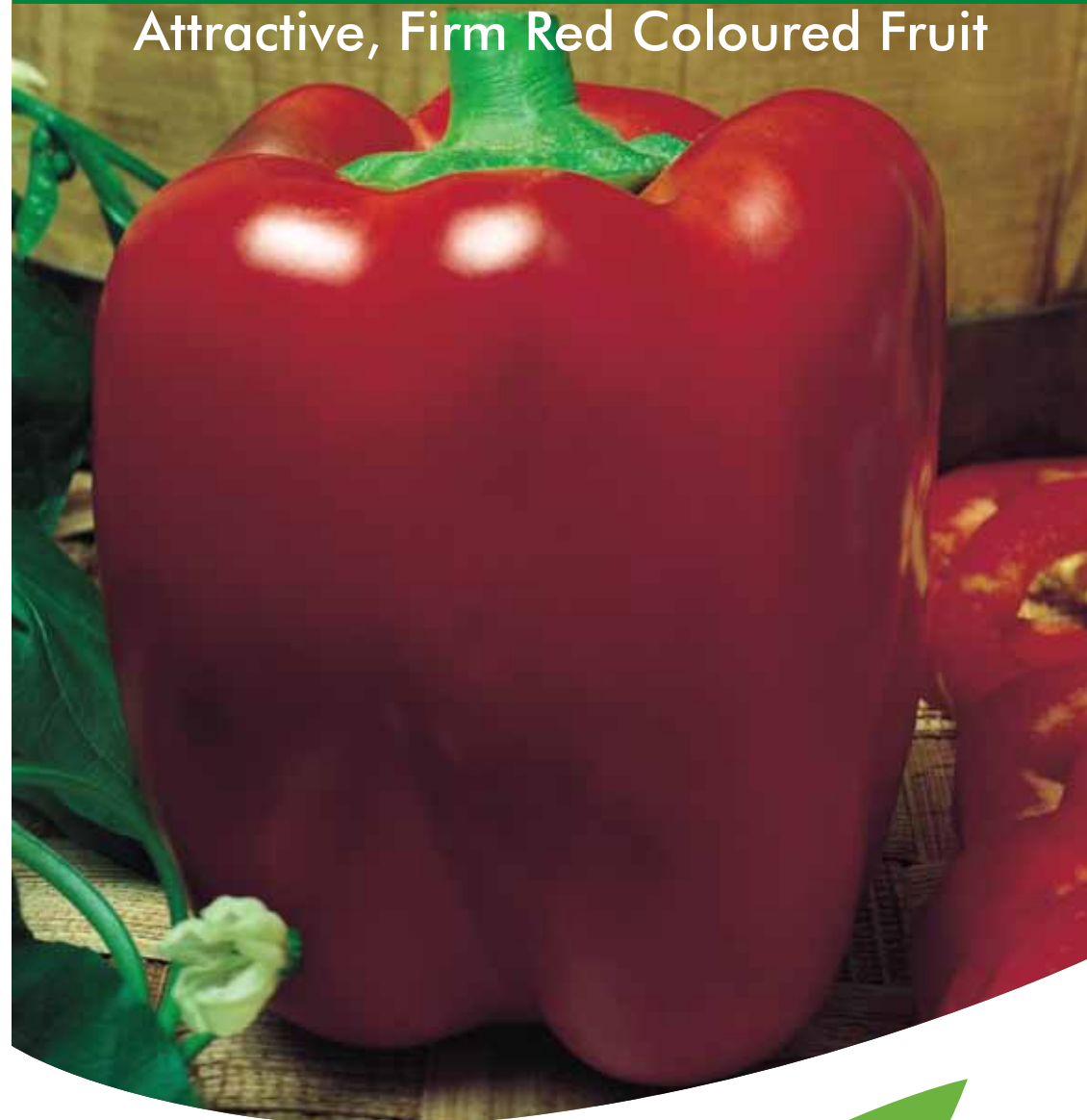
### Growing Guideline Snapshot

Number of Seeds/g	110-135s/g
Number of Seeds/ha	18,000-40,000 seeds/ha
Recommended Sowing Depth	0.5-1cm
Temperature range for Germination	20-25°C
Days to Emergence	8-10 days; longer in cold seasons
Days from Germination to Transplant	35-50 days
In Row spacing	40-45cm
Between Row spacing	40-65cm
Population/ha	18,000-40,000 plants/ha
Temperature range for Growth	20-30°C
Ideal environment for growth	Moderate warm weather with light air movement; Sufficient water availability; Low disease pressure; Trellising and support is recommended
Days to Maturity from Transplant	Dependant on type 75-95 for green peppers in summer; Additional 20 more for days for color peppers (red or Yellow fruits)
Expected Yield	25-50t/ha
Harvest Period	30-90days; Dependant on season, holdability of genetics and targeted market segment
Average effective root depth	40-70cm
Optimal soil type	Well drained sandy loamy to sandy soil. Sandy soils need closer water management to prevent BER (calcium uptake).
Soil pH	pH 5.5-6.8
Total Water Requirement	600-650mm
Weekly Water Requirement	20-30mm, pending the maturity of the crop
Temperature	12°C
Humidity / Days	RH @ 75%, for 7-14days.
Pests	Birds; Thrips; Aphids; Bollworm; Cutworms; White fly
Diseases	Powdery Mildew; Anthracnose; Virus; Wilts
Physiological Disorders	Blossom end Rot
Plant Nutrition: Nitrogen (N)	180-220 kg N /ha
Phosphorus (P)	60-80kg P / ha
Potassium (K)	180-220kg K / ha

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# RED KNIGHT F1

Attractive, Firm Red Coloured Fruit



MONSANTO KENYA LTD, TUSKER MATTRESS HEAD OFFICE MOMBASA ROAD  
P.O. Box 47686 00100, NAIROBI, KENYA.

Tel: 254 20 2060922/44/3574301/2/3/4, Fax: 254 20 823086/3574300

Mobile: 254 0722 205294/0722 205529/0733 600468 / 0733 629414

Web: [www.monsantoafrica.com](http://www.monsantoafrica.com)

  
**Seminis.**

## SEMINIS SWEET PEPPERS

High yielding quality sweet peppers

### REDKNIGHT F1

Ideal for greenhouse production

#### ATTRIBUTES

- Attractive firm red coloured fruits.
- High class greenhouse selection
- Blocky shaped fruits with uniform colour change from green to red.
- Yield potential: 30 tons/acre
- Maturity: 75 days (green) 90 days (ripe) from transplanting.

### TYCOON F1

Tycoon F1 is a green to red blocky deep bell shaped pepper. This variety is suitable for both greenhouse as well as open field production.

#### ATTRIBUTES

- Hybrid California Wonder type
  - Tolerant to anthocyanin (puling) plant has good leaf cover
  - Ideal for both greenhouse and open field production
  - Green blocky fruit turning red when ripe
  - Tolerant to heat. Flowers can establish even during high heat periods of the year
  - Yield potential: 20 tons/acre
  - Maturity: 75 days (green)
  - Fruit ripening 90 days from transplanting.
  - Resistant to TobaMo viruses and Bacterial spot (Xanthomonas campestris pv.vesicatoria Race 1-3)
- Benefits of growing above varieties
- High market demand
  - Early maturing
  - Reduced pesticide usage
  - High returns
  - Good shelf life

#### CLIMATIC AND SOIL REQUIREMENTS

- Pepper crop does very well in a warm climate and in the mid altitude areas.
- Crop does better in deep well drained soils
- Peppers require an optimum pH of 5.5 to 6.8

#### NURSERY MANAGEMENT

- Peppers are first produced in the nursery before they are transplanted in the main field.
- Seedlings should be raised at least 45 days before they are transplanted.
- Proper nursery management including spacing to ensure health and strong seedlings is important. Transplanting should be done in the evening for better survival rates.

#### SPACING AND STAKING

- Peppers are planted in double rows on 90cm beds. Spacing is 30-60 cm between plants and 45 cm between rows.
- In-row spacing should be adapted for warm season and cool season production as well as altitude; this varies from 45-60 cm.
- Staking is done by using sticks and strings; it keeps the plant upright and also keep the fruits above the soil
- Staking of peppers has a marked effect on keeping the canopy intact, thus preventing sunscald on fruit. It also prevents the plant from splitting during a heavy fruit load.

## FERTILIZATION

- Nitrogen should be applied in instalments especially on sandy soils. Most peppers are subject to BER (blossom-end rot) and care should be taken to avoid calcium deficiencies that may lead to this disorder. Disease appears as a water-soaked spot that eventually enlarges with time and becomes dry, sunken, flattened, brown or black, and papery or leathery in texture.
- As a guide, 4t of manure during land preparation, 150kg/acre of DAP during transplanting, at least 3 applications of 100kg of NPK at 3 weeks after transplanting flowering and fruit formation period.
- Additional calcium fertilizer during first fruiting and when BER symptoms are observed.

## IRRIGATION

- Peppers requires about 25- 35mm water per week, avoid shortages during fruit set and flowering as this is the critical period for production of this crop. Water shortages at this stage will lead to abortion of flowers and fruits resulting in yield losses.
- Avoid overhead irrigation as it increases prevalence of leaf diseases such as bacterial leaf spot
- Drip irrigation, provides the best results, it allows for precision irrigation plus fertilizers can be applied successfully through the drippers at the root zone.

## WEED CONTROL

- Weed control is important during the growth phase 65-80 days; little or no weed competition must be allowed to ensure optimum yields.
- Weeds can be controlled mechanically, by hand or by means of registered herbicides. Good weed control reduces on pest and disease occurrence.

## PRUNING

- Nip the main shoot when plants are young to allow 2-3 branches for maximum production.
- Remove first flowers and excess fruits allowing 2-3 fruits per branch to get bigger fruits.

## HARVESTING

- Fruits are harvested green or allowed to develop colour to red depending on your market demands.
- Harvesting is done early in the morning and the fruits kept under shade to remove the field heat before transporting to the market.

	Symptoms/Damage to crop	Management practice
<b>Bacterial canker</b>	Wilting of one side of leaves, light coloured streaks, cankers and discolouration of the internal of stem	Crop rotation, resistant varieties and field hygiene to prevent spread
<b>Bacterial speck</b>	Dark brown to black spots often surrounded by a halo, lesions on fruits speck-like and superficial	Resistant varieties, spray of copper based fungicides
<b>Bacterial wilt</b>	Drooping of upper leaves followed by wilting of the entire plant, slimy ooze from stem when cut	Crop rotation and field hygiene: foot baths, sterilize secateurs
<b>Early blight</b>	Irregular, dark brown, necrotic areas on the leaf surrounded by yellow sections	Fungicide spray program: Mancozeb, Metalaxyl, Probeneb
<b>Late blight</b>	Large, irregular, greenish, water -soaked patches on leaves, enlarge and turn brown and paper-like	Fungicide sprays in wet weather: Chlorothalonil, Metalaxyl M
<b>Powdery mildew</b>	light green to bright yellow lesions developing on the upper leaf surface, light powdery fungal growth	Locate new fields away from old ones, field hygiene, tebuconazole
<b>Whiteflies</b>	White insect s that suck sap, sugars on leaves resulting in growth of moulds, transmit virus	Control early; Buprofenzin, acetamepid, soap
<b>Aphids</b>	Suck sap destroying growth parts, transmit virus	Pirimicarb, deltameth rin
<b>Thrips</b>	Cause silvery marks on leaves and fruits, reduce quality of fruits	Spinosad, Synthetic pyrethroids, Azadiractin
<b>Leafminer</b>	Destroy leaf by mining, reduced food making	Abamectin, Cyromazine,
<b>Mites</b>	Destroy leaf by sucking sap, distortions	Abamectin