



## OUTSTANDING QUALITIES


- ◆ INTERMEDIATE RESISTANCE TO BLACK ROT
- ◆ EXCELLENT SUMMER VARIETY
- ◆ EXCEPTIONAL HEAT TOLERANCE
- ◆ VERY HIGH YIELD POTENTIAL

**Optima** is a market-leading cabbage variety specifically selected for summer production. **Optima** has intermediate resistance to Black rot (Xcc) disease, making it perfectly suited to areas with high Black rot pressure. It's a strong plant that takes 80 - 95 days to mature from transplant. The big frame protects the heads very well against sunburn and wind damage. Heads are semi-round to round with a good head weight. **Optima's** frame has an upright growth habit, so water doesn't accumulate as easily at the base of the plant.

## SPECIAL VARIETAL REQUIREMENTS

- Excellent results are consistently achieved for harvest throughout the warm season
- Mature heads can tolerate cool and frost conditions well
- Avoid early and late sowings in cooler areas and growing through winter in cold areas as bolting may occur
- Contact area representative for a sowing guide

CHARACTERISTIC	OPTIMA
TYPE	F1 hybrid fresh market cabbage ( <i>Brassica oleracea</i> L. convar. <i>Capitata</i> (L.) Alef. Var. <i>capitata</i> (L.) Alef.
MATURITY	Medium (year round 80 – 95 days from transplanting)
HEAD SIZE	Large
HEAD SHAPE	Round
HEAD WEIGHT	3 - 5 kg (could be bigger depending on spacing)
HEAD COVER	Very good
EXTERIOR COLOUR	Deep blue-green
INTERIOR COLOUR	Yellow light green
FLAVOUR	Very good
PLANT SIZE	Large
PLANT HABIT	Semi-erect
BOLTING REACTION	Very sensitive to bolting if produced through winter for spring harvest. <b>Strictly a warm season cropper</b>
DISEASE REACTION (SCIENTIFIC)	<b>Intermediate resistance:</b> <i>Xanthomonas campestris</i> pv. <i>campestris</i> (Xcc) and <i>Fusarium oxysporum</i> f. sp. <i>conglutinans</i> (Foc)
FIELD HOLDING	Excellent
YIELD POTENTIAL	Excellent
SUGGESTED POPULATION	28 000 - 35 000 plants per ha
USE	Sold as individual heads and per bag
SPECIAL FEATURES	Excellent yield potential and intermediate resistance to Black rot

\* 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).

\* **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 CABBAGE PRODUCTION

### The range test

This is a type of vigour test and is designed to give the seedling grower additional information about the lot's potential to perform at a range of temperatures (above and below ideal). As with the germination test, all other factors remain constant, it is only the temperature that varies. Both the radicle count and the final germination count are provided for all 6 test temperatures. In the case of brassicas these are: 5/20°C (alternating 16 hours /8 hours), 15°C, 20°C (ideal), 20 - 30°C (ideal), 30°C & 35°C. Ask your area representative for a lot-specific copy of the range test.

### Crop rotation

Crop rotation is important in reducing soil-borne pathogens and pests that survive in infected plant residues and have a specific host range. Systems are often designed to include a green-manure crop in order to increase the organic content of a soil. Crops belonging to the family *Brassicaceae* (cabbage, cauliflower, broccoli, brussels sprout, Chinese cabbage, kohlrabi, turnip, radish, kale, horseradish, watercress & various mustards) should not be planted in the same field more than once every three years but can follow any unrelated vegetable in a rotational system. Cruciferous weeds must be rigorously controlled during the period when brassica crops are not grown otherwise much of the benefit of crop rotation can be lost. Green mealies and legumes are the most suitable green-manure crops for brassicas. These crops should be ploughed in while they are still green and at least 8 weeks before planting.

### Post-harvest handling

Cabbage has a good shelf life and can be stored for relatively long periods of time under ambient conditions. This produce should ideally be stored at low temperatures where water loss and disease can be managed. Under these conditions, the shelf life can be extended further allowing for transport to further markets and greater market flexibility.

### Plant establishment

Seedlings (not older than 4 to 6 weeks for summer and 6 to 8 weeks for winter) should be watered prior to planting and should be transplanted into a pre-wetted moist soil. Ensure that the seedling roots point straight down and are not bent during the process otherwise plants will be stunted and may not produce heads. Planting out on raised beds or ridges is advisable in wet areas to reduce the risk of waterlogging and stem or root rots. The beds are usually about 1m wide and of any convenient length. The beds are usually raised about 150 mm above the ground with access pathways between that will also enable drainage.

### Soil requirements

Cabbage grows best in well-drained, fertile loam soils, but can be successfully grown on a wide range of soils provided that drainage and fertility are good. Cabbage has a fairly shallow root system with an effective feeding depth of about 600mm. Application of organic matter such as kraal manure, compost, and plant residues from previous unrelated crops, or as green manure improves soil qualities and in turn has a positive effect on plant growth. To help avoid soil-borne disease problems, select fields where no brassica crops have been planted for at least three years. Cabbage is sensitive to soil acidity and therefore soil pH should be well monitored. Soils of low pH often contain very high levels of available aluminium and manganese, which adversely affect growth and yield. Molybdenum deficiencies may also be induced in very acidic conditions, especially on heavier soils. Soil pH (KCl) should be raised to over 5.5 by the application of agricultural lime at least 4 to 6 weeks prior to planting.

**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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