



OUTSTANDING QUALITIES

- ◆ EXCELLENT 'BABY' CABBAGE
- ◆ SUPERIOR SHELF LIFE
- ◆ VERY SLOW TO BOLT
- ◆ VERY GOOD HOLDING ABILITY
- ◆ VERY UNIFORM HEADS

Excellent yield, uniformity and holding ability in the field makes **Puma** a top choice in the 'baby' cabbage class for fresh and export markets. **Puma** is an extra-early maturing high quality hybrid for use as a 'baby' or small cabbage. The plants and heads are very compact and extremely uniform. If heads are left to mature under normal conditions, they can weigh up to 1.2 kg. The heads are very firm and have a very attractive dark green colour. **Puma** has a delicious flavour and excellent shelf life that is vastly superior to that of other varieties in this class. Outstanding results are especially achieved in the warm season. **Puma** has intermediate resistance to Fusarium yellows (Foc).

SPECIAL VARIETAL REQUIREMENTS

- **Puma** is suited to sowing throughout the year in mild climatic regions
- Avoid sowing during April and May in cool areas
- Contact area representative for a sowing guide

CHARACTERISTIC	PUMA
TYPE	F1 hybrid 'baby' cabbage (<i>Brassica oleracea</i> L. convar. <i>Capitata</i> (L.) Alef. Var. <i>capitata</i> (L.) Alef.
MATURITY	Extra early (warm season: around 35 – 40 days from transplanting, cool season: 50 – 60 days from transplanting)
HEAD SIZE	Small
HEAD SHAPE	Round
HEAD WEIGHT	0.1 - 1.2 kg (could be bigger depending on spacing)
HEAD COVER	Very good
EXTERIOR COLOUR	Dark green
INTERIOR COLOUR	Yellow light green
FLAVOUR	Very good
PLANT SIZE	Small
PLANT HABIT	Erect
BOLTING REACTION	Very slow to bolt
DISEASE REACTION (SCIENTIFIC)	Intermediate resistance: <i>Fusarium oxysporum</i> f. sp. <i>conglutinans</i> (Foc)
FIELD HOLDING	Excellent
YIELD POTENTIAL	Very good
SUGGESTED POPULATION	80 000 - 100 000 plants per ha
USE	Pre-packing and novelty
SPECIAL FEATURES	'Baby' cabbage market, excellent shelf life and widely adapted for year-round production

* 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 CABBAGE PRODUCTION

Baby cabbage marketing

The 'baby' cabbage market is considered to be one of the more important markets in many parts of the world and continues to grow in South Africa. Many retail outlets demand small cabbages of about 500 g, which are usually placed on a punnet and sold in pairs. Slightly larger cabbages of up to 1.5 kg are also common in retail stores where they are wrapped in plastic film and sold individually. Cabbage supplied to such a market must meet the quality specifications of the retail outlet and have an attractive appearance. Round shape, good colour, taste and shelf life are all extremely important and will result in a premium price for produce. Retail markets are an attractive option as they offer a fixed price for quality product and require a constant supply ensuring that the grower always has a market for his/her produce.

Plant Spacing

Spacing and plant populations are extremely important as they affect the final product, especially size in cabbage. Wider spacing may be necessary under specific environmental conditions and will aid in producing a quality final product. Wider spacing is required as the climate becomes hotter and more humid to prevent the increased chance of disease and moisture build-up. When producing 'baby' cabbage it is important that the spacing is not too wide as the heads will become larger and valuable production space is lost. We suggest plant populations of 80 000 - 100 000 plants per ha.

Table showing suggested plant populations of 'Baby' Cabbage crops

Type	Size	Plant population (plants/ha)
Cabbage	Small (Baby)	60 000 – 80 000
	Medium	55 000 – 65 000

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 1 m wide and of any convenient length. The beds are usually raised about 150 mm above the ground with access pathways between them that will also enable drainage.

Transplanting

In summer, 4-week-old seedlings are ideal, whilst in winter this may have to stretch to 8 weeks. A good norm to use is to transplant after the development of the first true leaf. Hardening off is especially necessary when the plants are to be planted out during warm conditions.

Seedlings should be carefully inspected before transplanting into the field. Check that the terminal bud is not damaged as this results in blind unproductive plants that should be discarded. It is also important that seedlings are carefully planted with the roots pointing downwards to avoid 'j-rooting' problems. The ideal seedling should be healthy, have no more than 3 true leaves, be 125 mm to 150 mm tall, have a straight stocky stem and not be root bound to the cell.

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.

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 with 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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