



OUTSTANDING QUALITIES

- ◆ **SPRING TO LATE SUMMER SOWING**
- ◆ **SMOOTH AND UNIFORM ROOTS**
- ◆ **SUITABLE FOR BABY CARROT PRODUCTION**
- ◆ **WIDELY ADAPTED WITH INTERMEDIATE RESISTANCE TO ALTERNARIA LEAF BLIGHT**

Javelin is a medium maturing, hybrid Nantes/Berlicum-type carrot. **Javelin's** root qualities include; long, smooth and uniform roots with a medium orange external and internal colour. **Javelin** is widely adapted and has strong foliage with intermediate resistance to Alternaria leaf blight. Depending on the sowing density, **Javelin** can be used to produce roots suitable for the bunched, baby carrot and pre-pack markets.

SPECIAL VARIETAL REQUIREMENTS

- Best suited for spring to late summer sowings, but it can be sowed throughout the year in frost free areas
- Contact area representative for a sowing guide

CHARACTERISTIC*	JAVELIN
KIND	F1 Hybrid carrot (<i>Daucus carota</i> L.)
TYPE	Nantes/Berlicum
SOWING SEASON	Spring to late summer
MATURITY	Medium Warm season: 95 – 110 days from sowing Cool season: 110 – 120 days from sowing
ROOT DIMENSIONS	<u>Length</u> : 16 – 25 cm <u>Diameter at the top (shoulder)</u> : 2.5 – 3.5 cm for mature roots Note : Root size is influenced by the plant population
ROOT SHAPE AND TIP	Cylindrical with a semi-blunt/slightly tapered tip (Cyliandroconical shape)
ROOT UNIFORMITY (SHAPE AND SIZE)	Good
EXTERNAL ROOT COLOUR	Medium orange
INTERNAL ROOT COLOUR	Medium orange
ROOT CORE COLOUR AND SIZE	Bright orange and medium-sized
ROOT SKIN SMOOTHNESS	Medium
ROOT TASTE/BRUX (SUGAR CONTENT)	Sweet, average BRUX
TOP/FOLIAGE HEALTH AND HABIT	Strong with erect foliage
TOP/FOLIAGE HEIGHT	Medium to high, 30 – 35 cm
TOP/FOLIAGE COLOUR	Medium to dark green
LEAF ATTACHMENT	Strong, suitable for hand and mechanical harvesting
BOLTING REACTION	Slow – high bolting tolerance
DISEASE RESISTANCE (SCIENTIFIC)	Intermediate resistance : <i>Alternaria dauci</i> (Ad)
FIELD HOLDING ABILITY	Very good
YIELD POTENTIAL	Good
SUGGESTED SOWING DENSITY	Density depends on the season, size requirement of the roots and the target market/uses of the final product, however, we suggest: <u>Pre-pack carrots</u> : 1 000 000 – 1 500 000 seeds per hectare <u>Processing/larger sized carrots</u> : 600 000 – 900 000 seeds per hectare <u>Baby carrots</u> : 2 500 000 to 3 500 000 seeds or 4 to 5kg of seed per hectare
MARKET USES	Bunched, pre-pack, bulk and baby carrots
SPECIAL FEATURES, BENEFITS AND REMARKS	Smooth and uniform roots. Preferred variety for baby carrot production. The seed is available in a range of different seed sizes.

* 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 CARROT PRODUCTION

Soil preparation

Being a root crop, soil conditions and proper soil preparations are essential to the success, quality and yield of the crop. Although deep, well-drained, sandy soils are favoured, carrots are commonly produced on heavier soils. It is essential that soil preparation include; the removal of any large rocks/objects and deep ripping of the soil to break down any potential sub-surface compaction layers that may restrict root growth (lengthening and tuberisation).

Soil should be worked into a fine, smooth tilth to produce a fine seedbed, this will ensure proper contact between the seed and the soil which will favour rapid and uniform germination. Carrots are usually sowed on raised beds, this will ensure proper water drainage (restrict waterlogging) and enhance aeration allowing the roots to breathe which will facilitate the root to grow straight and long – production on flat beds are not recommended. The soil of raised beds should be porous, free of rocks and deep, at least 25 cm on sandy soil and 35 cm on heavier, clayey soils – especially in higher rainfall regions. Straight beds across the field are very important as this will ensure; precise sowing, effective crop management and more efficient harvesting.

Sowing depth

Depends on the seed size, seed treatment/coating, soil (type and structure), climate and irrigation capacity at the time of establishment. In well-drained, non-sealed, sandy soil a sowing depth of 7 to 13 mm is ideal for treated or non-treated seed. Whereas, for heavier, clayey soil the sowing depth limit ranges from 7 to 10 mm. The sowing depth of pelleted seeds should be increased to 12 or 15 mm to ensure proper disintegration of the coating – 15 mm deep should be considered as the maximum sowing depth. Proper irrigation management after sowing ensures uniform germination of the seeds.

Irrigation

Proper irrigation management is crucial and can have a profound effect on the development, quality and yield of the carrot roots. Over-irrigation can lead to short, stumpy carrots. This can also occur in poorly drained or heavy/clayey soils as well as during high rainfall periods. To assist under these conditions, lighter soils should be used along with deeper beds around 30 – 35 cm.

During the germination phase, irrigation management (high frequency and low volume) is critical to increase uniform germination and also reduce sealed crust formation. During the root lengthening phase, growers often limit irrigation (reduce the quantity of water being applied to the crop) in order to force the root to grow longer i.e. help establish a longer carrot.

As water is applied on a low frequency, medium volume basis during this phase, the carrot root lengthens as it searches for deep soil water. Caution should be taken not to limit water to such an extent that the plants start to wilt – this is especially crucial to manage on sandy soils as these soils drain very quickly.

For the last six to eight weeks of production (tuberisation of root phase), ensure regular supply (medium frequency and high volume) of water and do not allow the crop to stress. This will help keep the roots turgid and ensure the development of bigger sized roots.

High volumes of water applied to the crop shortly before harvesting can lead to an increase in the frequency of in field splitting and also cracking during the harvesting process.

Fertilisation

Carrots require specific fertilisation in order to ensure healthy plants, high quality roots and high yields. Firstly, strong foliar growth and development are required to establish the crop, followed by the production, translocation and storage of sugars in the root. Therefore, it is important to provide ample nitrogen-based fertilisers early in the growth stages to stimulate the production of strong, healthy tops (vegetative development) on the plants. Sugar production (sweet taste in carrots) can be stimulated after leaf/foliage development by increasing the amount of potassium. Potassium also improves the strength/mechanical resistance of roots (less broken and cracked carrots) and increase the carotene content – deeper orange colour. Calcium, magnesium and boron contributes to the health of the foliage and quality of the roots.

It is important to supply nitrogen throughout the growing season as this will ensure high yields and maintain healthy foliage. However, excess applications of nitrogen at any stage will stimulate; excessive foliage development, favours the development of Sclerotinia and Pythiums, make roots more sensitive to splitting and breakage/cracking during harvest, poor root colouration (decline in carotene production) and can adversely affect the production of sugars in the roots i.e. less tasty/sweet carrots.

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