

# JAVELIN

## F1 Hybrid Carrot

### OUTSTANDING QUALITIES

- ◆ **SPRING TO LATE SUMMER SOWING**
- ◆ **WIDELY ADAPTED**
- ◆ **SWEET, SMOOTH, UNIFORM CARROTS**
- ◆ **INTERMEDIATE RESISTANCE TO ALTERNARIA LEAF BLIGHT**

**Javelin** is a F1 hybrid, sweet flavoured Nantes/Bericum carrot mainly for the pre-pack market. It is a medium maturing, moderately smooth carrot with a high yield potential. Root quality is excellent with very good colour, flavour and root uniformity. Plants are vigorous with a strong attachment and healthy top. **Javelin** has very wide adaptability. **Javelin** is currently used for pre-packing, bunching and processing markets. **Javelin** has intermediate resistance to Alternaria leaf blight (Ad).



### SPECIAL VARIETAL REQUIREMENTS

- Best suited to spring and late summer sowings but can be planted throughout the year. Trial extensively to determine adaptability of the variety in the growing area
- Contact area representative for a sowing guide

| CHARACTERISTIC*               | JAVELIN  |
|-------------------------------|--|
| KIND                          | F1 hybrid carrot ( <i>Daucus carota</i> L.)  |
| TYPE                          | Nantes/Bericium  |
| MATURITY                      | Medium (warm: 85 – 100 days and cool: 110 – 120 days from sowing)                            |
| SOWING SEASON                 | Spring and late summer (trial in specific areas to determine adaptability)                   |
| DIMENSIONS                    | 18 - 23 x 2.3 - 3 cm   |
| COLOUR                        | Medium orange  |
| FLAVOUR                       | Sweet  |
| CARROT SHAPE AND TIP          | Short cylindro-conical with blunt tip  |
| CORE (COLOUR AND DIAMETER)    | Good   |
| SKIN SMOOTHNESS               | Very good  |
| TOP HABIT                     | Very strong with erect foliage   |
| TOP HEIGHT                    | 30 - 36 cm   |
| TOP COLOUR                    | Medium green   |
| STEM ATTACHMENT               | Medium strong  |
| DISEASE REACTION (SCIENTIFIC) | <b>Intermediate resistance:</b> <i>Alternaria dauci</i> (Ad)                                 |
| FIELD HOLDING                 | Very good  |
| BOLTING REACTION              | Slow   |
| YIELD POTENTIAL               | Very good  |
| SUGGESTED POPULATION          | 1.5 - 2.0 million seeds per ha, around 2 - 3 kg per ha                                       |
| USE                           | Pre-pack, bunching, bulk, processing   |
| SPECIAL FEATURES              | Sweet, uniform carrot, widely adapted with intermediate resistance to Alternaria leaf blight |

\* 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 CARROT PRODUCTION

### Soil preparation

Being a root crop, soil conditions and preparation are essential to the success of the crop. Although sandier soils are preferred, carrots are commonly produced on heavier soils. Soil preparation must include deep ripping of the soil to remove any potential sub surface compaction layers that may inhibit root growth and lengthening of the roots.

Soil should be worked into a fine, smooth tilth to produce a fine seed bed. Carrots are usually planted in beds and seldom directly into the soil on flat ground. Beds should be made to a depth of at least 15 cm, but for heavier soils, depths of up to 20 cm should be preferred, particularly in higher rainfall areas. Straight beds across the field also make for easier management of the crop as well as the actual sowing of the seed.

### Seed size and quality

Like all seed, carrot seed quality is important to ensure a good stand and ultimately final yield. Under varying climatic conditions as experienced in South Africa, experience has shown that smaller seed is more vulnerable and easily lost under conditions of temperature extremes than larger seed. Optimally, seed should be 1.8 - 2.2 mm in size. Seed counts should be between 400 000 and 600 000 seeds per kg.

Although seed germination may be good, the carrot seed is vulnerable to environmental conditions. Sakata conducts Range Tests on all hybrid carrot seed. The range test predicts the response of seed to different temperatures and will help the management of the crop through germination and young seedling development.

### Carrot physiology

Being a root crop, carrot growth is often monitored purely by the appearance of the top growth of the plants. Good healthy tops however may not provide the best quality carrots.

Although a carrot will grow and expand, its quality is determined to a large extent by the amount of excess sugars available in the plant. The carrot is described as a storage organ, that is, it stores excess sugars in the root as the plant develops. These sugars are used by the plant at a later stage in flowering and seed production.

To optimise growth and harvest a carrot for fresh market consumption, it is desirable to allow for high sugar storage in the root. Low levels of sugar result in a poor flavoured product, often with a turpentine taste. The object then for good marketable carrot production is to ensure good sugar development.

Since leaves are the tool by which carrots produce sugars, sugar production is achieved by ensuring a good leaf top. Disease or management that reduces the amount of functional leaf cover will limit sugar production. However since the root acts as a storage organ, loss of leaf cover will stimulate the production of new leaves which will reduce the amount of excess sugars being produced as they are being utilised by the plant for leaf development.

Management therefore should concentrate on the prevention of leaf loss by planting resistant varieties to leaf diseases or using suitable spray programmes. Growing less resistant varieties should be left to non-susceptible times of the year such as winter production.

### Disease reaction definitions:

**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.

**Susceptibility (S):** is the inability of a plant variety to restrict the growth and development of a specified pest or pathogen.

**Tolerance (T):** is the ability of a plant variety to endure **abiotic stress** without serious consequences for growth, appearance and yield. Vegetable companies will continue to use tolerance for abiotic stress.

**Immunity (I):** Not subject to attack or infection by a specified pest or pathogen.

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