



OUTSTANDING QUALITIES

- ◆ EARLY TO MEDIUM MATURITY
- ◆ ADAPTED TO WARM SEASON PRODUCTION
- ◆ GLOBE SHAPED ROOTS WITH DARK RED EXTERNAL AND INTERNAL COLOUR
- ◆ HIGH SUGAR CONTENT – PREFERRED BY PROCESSORS

Merlin is an early to medium maturing hybrid red beetroot, adapted for summer production. **Merlin** has smooth, uniform, deep red, globe-shaped roots with a small crown and refined taproot. **Merlin** offers higher sugar content (12 - 15%) in comparison to standard beet varieties. Due to its high sugar content, **Merlin** is a perfect choice for processors, fresh market growers and home gardeners. In addition, **Merlin** is also suitable for baby leaf and baby beet production. **Merlin** is less prone to zoning during warm conditions/heat stress. **Merlin** has intermediate resistance to Cercospora leaf spot (*Cercospora beticola*) and Downy mildew (*Peronospora farinosa f.sp. betae*). The latter ensures that the tops remain erect and healthy for optimum production and visual appeal in bunching.

SPECIAL VARIETAL REQUIREMENTS

- Sakata does not recommend sowing during April, May and June in areas prone to heavy frost
- Contact area representative for a sowing guide

CHARACTERISTIC*	MERLIN
KIND	F1 hybrid, round red beetroot (<i>Beta vulgaris</i> L.)
SOWING SEASON	Summer
MATURITY	Early to medium <u>Warm season</u> : 70 – 85 days from sowing Note : maturity depends on sowing date, production location and seasonal variations.
ROOT DIMENSIONS	Small to large (25 – 95 mm). Root size is influenced by the plant population
ROOT SHAPE	Round
ROOT UNIFORMITY (SHAPE AND SIZE)	Excellent
EXTERNAL ROOT/SKIN COLOUR	Dark red
INTERNAL ROOT/FLESH COLOUR	Dark red
INTERNAL ZONING	Little to none
ROOT SKIN SMOOTHNESS	Very smooth
ROOT TASTE/BRUX (SUGAR CONTENT)	Very sweet, high BRUX (12 – 15%)
TAPROOT APPEARANCE	Short, fine and neat
TOP/FOLIAGE HEIGHT	Tall, 35 – 40 cm
LEAF/FOLIAGE HEALTH AND HABIT	Upright/erect
LEAF/FOLIAGE COLOUR AND GLOSS	Dark green and glossy
PERCENTAGE LEAF PURPLING	Average
CROWN SIZE	Small
LEAF ATTACHMENT (SIZE AND STRENGTH)	Medium to large and average
BOLTING REACTION	Average tolerance
DISEASE RESISTANCE (SCIENTIFIC)	Intermediate resistance : <i>Cercospora beticola</i> (Cb) and <i>Peronospora farinosa</i> f.sp. <i>betae</i> (Pfb)
SUGGESTED SOWING DENSITY	Density depends on the season, sprout count, size requirement of the roots and the target market/uses of the final product, however we suggest: <u>Pre-pack beetroot</u> : 350 000 - 550 000 plants per hectare <u>Processing/larger beetroot</u> : 250 000 – 350 000 plants per hectare <u>Baby beetroot</u> : 900 000 – 1 200 000 plants per hectare
MARKET USES	Bunched, baby leaf, fresh market, pre-pack and processing

* Characteristics given are affected by production methods such as soil type, nutrition, planting population, planting date and climatic conditions. Please read disclaimer.
P.B.R. 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 BEET PRODUCTION

Climatic requirements

Beetroot is cultivated globally over a range of climatic zones – from tropical regions to cool temperate regions. Beetroot grows best at temperatures of between 15.5°C and 18.5°C. Germination can occur at temperatures between 4.5°C and 30°C, however, the optimum temperature range is between 18°C to 24.5°C. Beetroot is generally not adversely affected by cool winters and light frost, however, the sensitivity/susceptibility to cool temperatures differ between different cultivars. That being said, severe frost just after emergence or early in the growth cycle will damage the young leaves and retard growth. As a result, cool temperatures can significantly delay maturity and also lead to short foliage/top that turns purple in colour over time.

During hot days, young plants might be adversely affected or killed by the high temperatures that develop at or just below the soil surface. Prolonged high temperatures later in the development cycle of the plant might retard growth, lead to yield losses, cause undesirable flavour and zoning (white concentric rings) within the root. Sakata beetroot varieties have been bred to have a high tolerance against internal zoning during warm temperatures/ heat stress.

Soil requirements and tillage

The optimum pH for beetroot is in the range of 5.8 – 6.8, but slightly acidic and alkaline soils are tolerated. Beetroot is renowned for its ability to grow in soil with an above-average salt (salinity) content and its tolerance to manganese toxicity.

Beetroot grows well in a variety (sandy, sandy loam, silt loam or clayey) of soils, however deep, friable well-draining soil abundant with organic matter is preferred. These soils are among the easiest to prepare and permit good root development. Cloddy, stony or very shallow soils are undesirable – as this will restrict root development and damage (blemish) the roots. Uniform soil moisture is essential for best performance.

Rotate beetroot with any non-beet family crop in order to restrict the diseases, *Rhizoctonia* and *Rhizomania*. Beetroot is commonly affected by the disease, Damping-off, particularly on soils with poor aeration and drainage. Raised beds can restrict waterlogging, increase aeration and also increase the effective depth of loose soil around the roots (root zone), consequently resulting in high yields and healthy, high quality root.

Harvesting is also easier on raised beds as the blade system may be used to lift the roots from the soil.

Irrigation

Irrigation should be carefully managed based on the soil type and structure. Irrigation management is especially important early in the season to avoid over watering and waterlogging – this will favour disease spread and infection. Soil type does not determine the quantity of water needed by the plant but does affect/determine the frequency at which water should be applied. Moisture management is especially important during the early growth stage and tuberisation (root expansion) phase. Proper moisture/irrigation management can restrict surface crusting by following a “frequent application–low volume” schedule. Restricting surface crusting will eliminate seedling death prior to emergence (seedlings are unable to emerge when surface crusting occurs).

Yield expectations

Yield per hectare varies significantly from season to season and between different varieties. Open pollinated varieties may yield in the range of 30 - 35 tons per hectare. The average yield of hybrid varieties ranges from 35 to 45 tons per hectare, however hybrid varieties might yield in excess of 55 tons per hectare given that the plant population and fertiliser program is mastered.

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.

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