SAKATA®
PASSION in Seed

Akamaru

F1 Hybrid – Short Day - Brown Onion

TB REF : AKAMARU : 01/04/2024

OUTSTANDING QUALITIES

- **MEDIUM MATURING SHORT DAY HYBRID**
- **QUALITY, FIRM AND UNIFORM BULBS WITH A GOLDEN BROWN OUTER SCALE LEAF**
- **GOOD STORAGE POTENTIAL FOR A SHORT DAY ONION**
- **VIGOROUS ROOT SYSTEM WITH HIGH DISEASE RESISTANCE AGAINST PINK ROOT AND BASAL PLATE ROT**

Akamaru is a medium maturing, short day brown onion hybrid. **Akamaru** produces firm, uniform, slightly flattened globe-shaped bulbs with a golden brown skin/scale leaf. **Akamaru's** bulbs have medium-sized necks and small root plates. **Akamaru** is slow to bolt (high bolting tolerance) and is suitable for production in the Free State, Northern Cape and certain areas of the Western Cape. **Akamaru** has a strong root system that contributes to high resistance against Pink root (*Phoma terrestris* syn. *Pyrenochaeta terrestris*) and Fusarium basal plate rot (*Fusarium oxysporum* f. sp. *cepae*). **Akamaru** is suitable for direct seeding as well as seedling transplants.

SPECIAL VARIETAL REQUIREMENTS

- Contact area representative for a local sowing guide

CHARACTERISTIC*	AKAMARU
KIND AND TYPE	F1 hybrid, midseason, short day brown onion (*Allium cepa* L.)
MATURITY	Medium, 21 to 24 weeks after direct seeding. Maturity depends on sowing date, production location and seasonal variations (photoperiod and temperature).
BULB SHAPE	Slightly flattened globe
BULB SIZE	Medium to large (50 - 90 mm) – bulb size is influenced by the plant population
BULB UNIFORMITY (SHAPE AND SIZE)	Good
BULB NECK SIZE AND QUALITIES	Medium, neat and tight
BULB FIRMNESS	Average
BULB TUNIC (SKIN/SCALE LEAF) COLOUR	Good colour: golden brown
TUNIC RETENTION AND QUALITY	Good and strong
STORABILITY/SHELF LIFE	Short to moderate (2 to 3 months). Storage potential depends on the storage conditions (temperature and relative humidity).
FLESH COLOUR	White
TASTE	Mildly pungent
LEAF/FOLIAGE HEALTH AND GROWTH HABIT	Good and flagging
LEAF/FOLIAGE COLOUR	Green
BOLTING REACTION	Slow – High tolerance (depends on/related to the sowing date)
DISEASE RESISTANCE (SCIENTIFIC)	**High resistance:** *Phoma terrestris* (Pt) and *Fusarium oxysporum* f.sp *cepae* (Foc)
GROWING AREA	Grown between 26 - 33° latitude. Suitable for the Free State, Northern Cape and certain areas of the Western Cape. Refer to the sowing guide for the recommended sowing period in different production areas.
AVERAGE SEED COUNT	220 - 320 seeds per gram or 220 000 - 320 000 seeds per kilogram
SUGGESTED SOWING DENSITY	Density depends on the size requirement of the bulbs and the target market/uses of the final product, however, we suggest: Final population of 750 000 – 950 000 plants per hectare
SEED REQUIREMENT PER HECTARE	Direct sowing: 900 000 to 1 200 000 seeds per hectare / 3.5 - 4.0 kg seed per hectare Transplant: 5.0 - 5.5 kg seed per hectare
MARKET USES	Bunched, fresh market, pre-pack and processing
SPECIAL FEATURES, BENEFITS AND REMARKS	Mid maturing, slow to bolt, good storage potential for a short day onion. Well developed root system with an excellent disease package.

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

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.
Recent version: Kindly contact Sakata or Area Representative for the most recent version of this Technical Bulletin.

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GENERAL TIPS FOR ONION PRODUCTION

Day length
All short day onion varieties require a photoperiod (day length) of between 10 - 12 h for bulb initiation; for instance, if a variety is exposed to a shorter than required photoperiod, there will be a high percentage of non-bulbing plants with thick necks. If a variety is exposed to a longer than required photoperiod, even only for a few days, the young plants will bulb prematurely, leading to reduced bulb size and yield.

Temperature
Even though day length is the primary factor responsible for bulb initiation (to which degree an onion variety will bulb), temperature plays a crucial role in the rate of bulbing. Onions need soil temperatures of between 15 - 25°C to germinate successfully. Temperatures of between 18 - 22°C is adequate for vegetative growth, however, bulbing will be slower at lower temperatures. Fast and proper bulbing requires temperatures of between 25 - 28°C. Temperatures below 10°C are detrimental and cold damage may occur, especially if the nitrogen available in the soil is low. When temperatures are below 10°C during the bulbing stage of the growth cycle, growth will be retarded and the plants might bolt (extreme fluctuations in day-night temperatures induce bolting).

Plant population
Plant population influences bulb size and therefore the final yield. The consumer generally prefers a medium-sized bulb (50 - 70 mm). The optimum plant population depends on the sought after/preferred marketable size, climate, soil type and planting date. The optimum plant population is between 750 000 – 950 000 plants per hectare (final stand).
Direct sowing: It is suggested to sow approximately 900 000 to 1 000 000 seed per hectare / 3.5 - 4.0kg seed per hectare, depending on the seed size and seed quality/germination factor (germination percentage of seed).
Transplanting and sets: Depending on the seed quality it is suggested to sow approximately 5.0 to 5.5kg seed for 1 hectare seedlings.

Nutrition
Onions are sensitive to waterlogging and require well-drained soil of at least 20 cm deep. The optimal soil pH for growing onions is between 5.5 and 6.8. A low soil pH increases the occurrence of certain soil-borne pathogens such as *Sclerotium cepivorum* (White rot) and *Fusarium oxysporum* f. sp. *cepea* (Basal rot).

The ratio of nitrogen (N) to potassium (K) is very important. In onion cultivation, potassium and sulphur play an important role in the keeping ability (storage and shelf life), firmness and health of onions. It is important to keep the ratio of nitrogen to potassium at 1:1.5. Thick necks in onions are not only an indication of incorrect sowing time, excessive nitrogen (applications), but might be due to an imbalance between nitrogen and potassium. All the phosphorus (P) and most of the potassium should be broadcasted before planting. The nitrogen component of the fertiliser programme should contain 45 - 50% ammonium nitrate ($N\text{-}NH_4$), which should be applied in the beginning of the growth phase.

Only nitrate-nitrogen ($N\text{-}N0_3$) should be applied in the final growth phase to prevent “green shouldering” on onions and to maintain continued growth in the cooler season. On alkaline soils, ammonium sulphate nitrate (ASN) should rather be used. Onions have a relatively shallow root system; therefore, it is important to apply nitrogen on a regular basis before bulbing (swelling of bulb/scale leaves) starts.

Sulphur, boron, zinc, molybdenum, magnesium, and potassium should always be available in adequate quantities; however, onions are sensitive to high levels of chloride.

As soon as onions tops start to collapse or “fall over”, all fertiliser applications should be stopped.

Onion curing
Adequate curing (windrowing or pyramid heaps) may require 2 - 4 weeks, depending on the weather (wind, temperature, humidity etc.) conditions. The best skin develops at 24 - 32°C. Curing can also be done by controlled ventilation in a storage room/warehouse by blowing heated air through the bottom of the onion pile to the top, at 9 - 15 cubic metres per minute per ton.

Onions are considered cured when the neck is tight and the outer scales are dry and make a rustling sound when handled. This condition is reached when onions have lost 3 - 5 % of their weight. If not adequately/properly cured, onions are likely to decay in storage.

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.

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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