TEXAS GRANO 502 PRR

Short Day Brown Onion

OUTSTANDING QUALITIES

- **INTERMEDIATE PINK ROOT RESISTANCE**
- **WIDELY ADAPTED**
- **MEDIUM TO LATE MATURING**

Texas Grano 502 PRR is a medium to late maturing short day brown onion with an intermediate Pink root (Pt) resistance. The bulbs are uniform and have a granex shape. The scales are yellow, delicate and smooth. **Texas Grano 502 PRR** is well suited for early sowings in areas with a mild incidence of Pink root. Bulbs produced from transplants are much rounder than direct seeded bulbs. **Texas Grano 502 PRR** is a very high yielder and the bulbs have a refined neck. **Texas Grano 502 PRR** is suitable to most soil types.

SPECIAL VARIETAL REQUIREMENTS

- **Texas Grano 502 PRR** is well suited for production from direct sowing and transplants
- Grows longer than normal short day varieties, therefore need to apply follow-up fertiliser later than normal to ensure size and curing
- Contact area representative for a sowing guide

CHARACTERISTIC*	TEXAS GRANO 502 PRR
KIND	Onion (*Allium cepa* L.)
TYPE	Short day brown onion
MATURITY	Medium to Late
BULB SHAPE	Granex
BULB SIZE	Medium to large (influenced by plant population)
BULB UNIFORMITY	Good
NECK SIZE	Thin
FIRMNESS	Medium to firm
BULB COLOUR	Yellow
FLESH COLOUR	White
SCALE RETENTION	Delicate
FLAVOUR	Mild
LEAF GROWTH HABIT	Upright
LEAF COLOUR	Dark green
BOLTING REACTION	Slow (with due regard to planting date)
DISEASE REACTION (SCIENTIFIC)	***Intermediate resistance:*** *Pyrenochaeta terrestris (Pt)*
AVERAGE SEED COUNT	250 - 350 seeds per gram
POPULATION GUIDE	Final stand of 750 000 – 950 000 plants per ha
SEED REQUIREMENT	Direct sowing: 3.5 – 4.0 kg seed per ha Transplants: 5.0 – 5.5 kg seed per ha
STORAGE	Good
MARKETS / END USE	Fresh market and processing
SPECIAL FEATURES	Intermediate Pink root resistance, widely adapted, high yield

* 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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GENERAL TIPS FOR SHORT DAY ONION PRODUCTION

Day length
All intermediate day onion varieties require an optimal day length of 12 - 14 h for bulb initiation. If a variety is exposed to less than the required day length, there will be a high percentage non-bulbing plants with thick necks. If a variety is exposed to a longer photo period than is required, even a few days, the young plants will prematurely bulb, leading to reduced bulb size and yield.

Temperature
Day length is the primary factor in bulb initiation, but is influenced by temperature. Onions need soil temperatures between 15 – 25°C to germinate properly. Vegetative growth is acceptable at 18 – 22°C, but bulbing will be slower. Faster and proper bulbing requires temperatures between 25 – 28°C. Temperatures below 10°C are detrimental and cold damage will occur, especially if the nitrogen availability in the soil is low. When temperatures are below 8 – 13°C near the bulbing stage, the growth is retarded and the plants will bolt.

Plant population
Plant population influences the 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 cost of the planting material, labour, climate, soil and planting date. The optimum plant population should be between 750 000 – 950 000 plants per hectare.
Direct sowing: The suggestion is to sow approximately 3.5 - 4.0 kg seed per hectare, depending on the seed size and germination.
Transplanting and sets: The suggestion is to sow approximately 5.0 kg seed for 1 hectare seedlings, depending of the seed quality.

Nutrition
Onions need well drained soils of 20 cm deep. Onions are sensitive to water-logging. Onions need a pH of 5.5 - 6.5. It lowers the risk of aluminium toxicity and/or boron deficiency is high. Low soil pH also increases the occurrence of certain disease such as *Sclerotium cepivorum* (White rot).

The ratio between nitrogen (N) and potash (K) is very important. Potassium and sulphur play an important role in the keeping ability (storage and shelf life) and health of onions. It is important to keep the ratio between the nitrogen and the potassium at 1 : 1.5. Thick necks in onions is not only an indication of excess nitrogen, it is more likely an imbalance between the nitrogen and the potassium. All the phosphorus (P) and most of the potassium should be broadcasted before planting. The nitrogen component of the fertiliser program should contain a 45 – 50 % ammonium nitrate ($N\text{-}NH_4$), which should be applied in the beginning of the growth phase. Only nitrate-nitrogen ($N\text{-}NO_3$) should be applied in the final growth stage to prevent "green shouldering" on onions and maintain continued growth in the cooler season. On alkaline soils ammonium sulphate nitrate (ASN) should be used. Onions have a very limited root system, therefore it is important to apply nitrogen on a regular basis **before** the bulbing starts.

Sulphur, boron, zinc, magnesium and potassium should always be available in sufficient quantities. Onions are sensitive to high levels of chloride.

As soon as onions tops start to "fall over", all fertiliser applications should be stopped.

Onion curing
Adequate curing may require 2 - 4 weeks, depending on the weather. The best skin develops at 24 - 32°C. Curing can also be done by forced ventilation in the storage by blowing heated air through the bottom of the onion pile to the top, at 9 - 15 cubic metres per minute per ton. Initial heating (1 day) can be as high as 40°C to heal wounds and then reduce to approximately 32°C.

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 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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