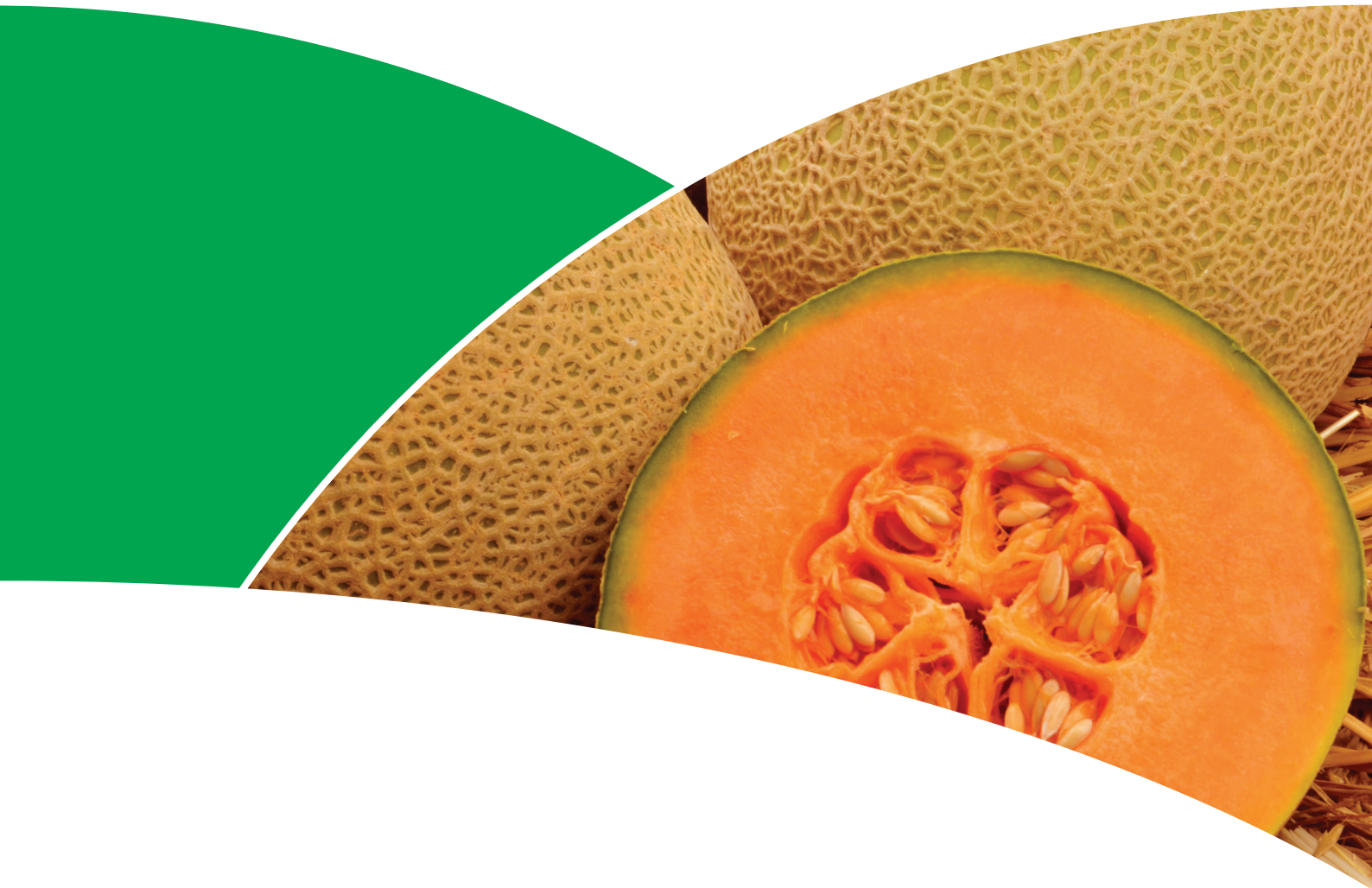




**STARKE
AYRES®**



MELON

PRODUCTION GUIDELINE

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SEEDS OF SUCCESS

MELON

1.1 HISTORY AND BACKGROUND

Melons, *Cucumis melo*, are part of the Cucurbitaceae family and are thought to have originated in Southern Asia and Persia. Today many different types of melons are cultivated all over the world. Melons are frost sensitive and are monoecious (both male and female flowers are produced on the same plant). The flowers remain open for approximately a day and are insect pollinated. Melons are usually eaten as fruit, in fruit salads, or as deserts.

2. ADAPTABILITY

2.1 CLIMATIC REQUIREMENTS

- Optimum germination temperature: 25-28°C, night temperature not lower than 18°C.
- Optimum growth temperatures at night are 18-20°C, and day 24-30°C, and for ripening 15-25°C.

2.2 SOIL REQUIREMENTS

Melons can be grown on a wide range of soil types although lighter soils are preferred. The highest yields will generally be produced on well-drained, deep, clay-loam soils. Soils with high clay contents where drainage is hampered and where soil oxygen is likely to be low after rain or irrigation should be avoided.

Melons should be well supplied with organic matter and are intolerant of wide variations in soil pH, which should be around 7.0 (H₂O). The crop is also sensitive to low availability of Mg and the micronutrients Fe, Mo and B.

2.3 PRODUCT TYPES

ORANGE FLESH MELONS

Eastern Shipper Cantaloupe types produce large oval fruits that are netted with a grey-green skin colour, which turns cream-yellow on ripening. Generally these orange-fleshed varieties ripen quickly and do not have a very long shelf-life, but have an excellent musky taste and aroma.

Eastern shipper X Western Shipper Cantaloupe types ("Extended Shelf Life") varieties have the external shape of the eastern shipper types, but with firmer flesh and longer shelf-life. Some varieties are netted with sutures, while others are without sutures. The rind of these long shelf-life orange-fleshed varieties does not turn yellow on ripening, but their harvest indicators are cracking around the peduncle, maturation of the net, and a rind colour change from medium-green to lime-green.

Charentais X Cantaloupe types have the long shelf-life properties of cantaloupes crossed with the exquisite taste and attractive appearance of the Charentais types. As true Charentais are rarely used in South Africa, because of the short shelf life and distance to the markets, often the long shelf life Charentais X Cantaloupes are commonly referred to as Charentais. These fruit are in a superior class of their own, prized for their appearance, eating quality and taste, as well as shelf life. These improved varieties have salmon-orange coloured flesh.

GREEN FLESH MELONS

Honeydew types have a smooth white/cream coloured skin without net, and traditionally have green flesh colour that range from pale to medium green. Although most Honeydews typically have green flesh, there are also some orange-fleshed cultivars.

Galia types have a dark green, netted skin, which turns bright/deep yellow when ripe. The flesh colour is pale to medium green with a strong, sweet taste.

SPECIALITY MELONS

Piel de Sapo types have a dark green skin, which turns mottled green/yellow in appearance when ripe. The flesh colour is white, and may be slightly pink-orange around the seed cavity. The flesh is firm to crisp with a strong, sweet taste.

3. CULTIVATION PRACTICES

3.1 SOIL PREPARATION

Soil must be thoroughly and deeply cultivated to obtain a good root system. This allows optimal use of moisture and helps to prevent soil-borne diseases. The roots develop at a depth of 30-40cm and the soil structure at that level must be optimal. Soils must be free draining to below 1.2 m.

It is advisable that plants are grown on raised beds of at least 10cm high. Beds should be 1.8m apart (from bed centre to bed centre) and as wide as possible on top. Paths should be at least 60 cm wide.

3.2 PLANTING PERIODS

Melons are mostly planted in the spring and through the summer months, with limited planting during the winter in the warmer Northern part of South Africa.

3.3 PLANT POPULATION AND SPACING

A general spacing of between 8,000 to 16,000 plants per hectare is recommended.

3.4 SEEDLING PRODUCTION

Seedlings are used to produce early plants where outdoor soil temperatures are too cool for germination. Use peat block or module seedlings from a reputable nursery.

3.4.1 TRANSPLANTING SEEDLINGS

Seedlings must be transplanted and watered as soon as possible after they have been obtained from the nursery. Planting trays should be kept cool and moist in the shade until used. When transplanting, roots should not be damaged by application of unnecessary pressure around the root module. Soil should be watered into contact with the roots rather than pressed in.

3.5 FERTILIZATION

A pre-plant soil analysis should be done at least six months prior to planting, as this forms the basis for planning the fertilizer program. The soils should be analysed for EC (Electrical conductivity), pH, Na, P, K, Ca, Mg, Zn, S, B and Mo. Melons are reasonably sensitive to salt, displaying a 50% yield reduction in the range of EC 4-6 (mMhos/cm at 25 C). Consult a fertilizer or soil specialist on other remedies needed in terms of a soil sample result.

Approximate nutrient requirements depending on soil type, soil analyses, and crop load;

N: 125-225 kg/ha: 30% pre-plant and the balance as two side dressings.

P: 15-200 kg/ha: Apply pre-plant and work down to root depth.

K: 50-350 kg/ha: 30% pre-plant and the balance as two side dressings, simultaneously with the N-application (eg. KNO₃).

In addition to soil analyses, the water quality should be analysed as it can affect the growth of the plant.

3.6 IRRIGATION

Stage 1: Sowing to emergence: Irrigate with plain water to field capacity, to a depth of at least 1m before sowing/transplanting. Keep the soil profile at field capacity until seedlings have emerged or roots are growing strongly from the seedling module.

Stage 2: Emergence to first fruit set: Plants should be watered more heavily at a lower frequency prior to fruit set. Use plant colour as a guide. Allow plants to get a little stressed in order to induce deep root growth. When areas of stressed plants develop in the field at midday, apply water.

Stage 3: First fruit set to harvest: During fruit enlargement, irrigation should be frequent and light. Irrigation should be reduced or stopped 7 to 10 days prior to harvest.

3.7 BEES AND POLLINATION

Melon plants have separate male and female flowers on the same plant and bees are needed for pollination. When flowers appear, one bee hive should be placed per 4 ha.

4. HARVESTING

Generally harvesting occurs 11-17 weeks after planting. One field can be harvested several times, 2-3 days apart.

Melons should be harvested in the early morning, as hot fruit respire much more rapidly and lead to over-ripe fruit on delivery.

Cut the stem about 2-4 cm long; do not pull fruit from vines. The longer stems make it more difficult for rots to enter the melon. Regular sanitation of knives and pruning scissors is essential.

Harvested fruit should be kept under shade and transported to the pack house within the shortest possible time to prevent the fruit temperature from rising and minimise moisture loss.

Cantaloupe melon is picked when physiologically mature and the flesh colour has reached a mid to deep orange. The flesh must be firm, not crunchy and not glassy. The membrane in the seed cavity should be moist and starting to detach from the ovary wall. The raised, well-rounded/corky appearance of the net on the fruit rind is also an indicator of maturity. The skin colour of the fruit rind changes from green to straw-yellow with Eastern Shipper Cantaloupes. With extended shelf life Cantaloupes and Charentais hybrids, the rind colour changes from medium green to lime green during ripening.

Honeydew melon is picked when physiologically mature and ripe. The rind should be white or cream coloured, and not green. The flesh colour should be pale to mid green and slightly translucent. Textures vary from firm to slightly soft, but must never be crunchy. The membrane in the seed cavity should be moist and starting to detach from the ovary wall.

Piel de Sapo melon is picked when physiologically mature and ripe. The rind should be mottled green/yellow with a bright yellow ground spot. The flesh colour should be white, and slightly pink-orange around the seed cavity, with the membrane in the seed cavity starting to detach from the ovary wall. The flesh should be firm to crisp, but never soft.

INDEMNITY

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