



**STARKE
AYRES®**



GEM SQUASH

PRODUCTION GUIDELINE

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SEEDS OF SUCCESS

GEM SQUASH

1. HISTORY AND BACKGROUND

Gem squash belongs to the cucurbit family and are produced mainly in Africa. They are frost-sensitive and grow best under warm conditions. The majority of varieties are round and dark green in colour though some variants are known. Internally the fruit shows a relatively large seed cavity and flesh develops a yellow colour when mature. Plants have a vine-type habit and extensive root systems. Male and female flowers are separate, males being borne on long stalks, females being borne on shorter stalks much closer to the stem. Pollination, usually by bees is important for normal fruit development.

2. ADAPTABILITY

2.1 CLIMATIC REQUIREMENTS

Ideal soil temperature for germination : 20 - 25 C (minimum 16 C)

Ideal temperature for growth : 18 – 24 C

2.2 SOIL REQUIREMENTS

pH 6.0 – 7.0

Best results are obtained with well-drained soils. Low salt level and high organic matter content are preferred.

2.3 PRODUCT TYPES

The form of gem squash does not vary greatly, most are round to slightly oval with a dark green colour. A certain amount of yellow speckling may be seen. The size depends on picking stage with market requirements varying from a baby (2-3cm diameter) up to the larger, mature fruit of 10cm diameter or more.

3. CULTIVATION PRACTICES

3.1 SOIL PREPERATION

Soil should be thoroughly prepared and deeply loosened before planting. Any residue from previous crops should be well-rotted. The use of raised beds should be considered if high rainfall that could lead to waterlogging is expected.

3.2 PLANTING PERIODS

Gem squash is sensitive to cold temperatures and frost will kill young plants and damage older ones. The crop can be planted anywhere there is no danger of frost during the growing period.

3.3 PLANTING

Most gem squash is direct-sown, that is the seed is planted directly into the soil. Early in the season, some growers use seedlings in order to establish an early crop. Seedlings must be transplanted before they become root-bound in seed trays.

3.4 SPACING

A variety of spatial arrangements may be used, but a final population of 12 - 15,000 plants per hectare is normally targeted. Some of the newer hybrids show a more restricted growth habit and these can be planted at populations of 18-20,000 plants per Hectare.

3.5 FERTILIZATION

For accurate and most effective use of fertilizers a soil analysis is needed. Gems and other squashes respond well to organic fertilization but will most often also need supplementary inorganic applications to obtain best results. After a few years of building up the soil with organics, the inorganic component will become less important.

3.5.1 FERTILIZATION GUIDELINE

N – 120 Kg. 50% pre-plant, remainder applied equally as 3 top dressings at 3-weekly intervals..

P – 60Kg. All applied pre-plant.

K – 170 Kg. 30% pre-plant, 30% at 4 weeks, 30% at first flower, 10% after fruit set.

Precise requirements should be determined by means of a soil analysis. Exact programmes will have to be tailored according to this and incidence and severity of diseases which may shorten the crop cycle.

3.6 IRRIGATION

Gem squash can be produced under dryland conditions but will produce much better results where irrigated. Water requirement will vary with soil type, season and growth stage. Avoid over-irrigation and waterlogging. The amount of water needed is generally 30 – 40 mm per week. Drip irrigation is preferred as the leaves remain dry.

3.7 OTHER CULTURAL PRACTICES

- 1) Plastic mulching is often used in winter production. This increases soil temperature and speeds growth. Weed control is also facilitated.
- 2) A 4 year rotation is recommended.
- 3) Weed control is by hand and is particularly important in early growth stages.
- 4) Natural bee populations may be supplemented if low.
- 5) Windbreaks can reduce damage in some areas.

4. HARVESTING AND MARKETING

A sharp knife is used to cut the fruit from the plants. The stem should not be broken off as this can provide an entry point for post-harvest pathogens. Most fruit is sold through fresh produce markets in bags. Grading of fruit by size enhances the appearance of the final product. Some growers will also wax fruit in a similar way to citrus fruit in order to create a shiny effect. It is possible to store gem squash for short periods of time but they tend to start becoming lighter in colour quite quickly, especially under warm conditions..

INDEMNITY

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