



Bulb flower (*Agapanthus*)

PRODUCTION GUIDELINE



agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA



.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Bird Of Paradise (Strelitzia) Flower

PRODUCTION GUIDELINE

January 2014

Directorate: Plant Production
Department of Agriculture, Forestry and Fisheries

5.3

Harvesting methods

The flowers are harvested by hand, using sharp secateurs/scissors. After flowering, the stalks should be cut before the plants produce seeds as these will drain necessary nutrients for flowering for next season. When the flowers are harvested, they remain fresh for up to a week in a vase.

6.

Uses

The flower draws its primary uses as a beautiful garden plant. The flower is used to add value to homes as it creates a lovely curb appeal.

7.

Acknowledgements

Appreciation is hereby extended to Directorate: AIS (Library) under the Department of Agriculture, Forestry and Fisheries for providing us with relevant sources of information

8.

Reference

- DUNCAN, G. 2002. *Grow Agapanthus*. Kirstenbosch Gardening, National Botanical Institute, Cape Town.
- DU PLESSIS, N. & DUNCAN, G. 1989. *Bulbous plants of southern Africa. A guide to their cultivation and propagation*. Tafelberg, Cape Town.
- JACKSON, W.P.U. 1990. *Origins and meanings of names of South African plant genera*. University of Cape Town Printing Dept., Cape Town.
- LEIGHTON, F.M. 1965. *The genus Agapanthus L'Heritier. Journal of South African Botany, suppl. vol. no. 4*. National Botanic Gardens, Cape Town.

9.

Contact details

Directorate Plant Production
Private Bag X250
Pretoria
0001
Tel.: +27 12 319 6072
Fax.: +27 12 319 6079
E-mail: Thabo.Ramashala@daff.gov.za
Website: www.daff.gov.za

Contents

1. Classification	1
2. Background	1
3. Climatic and soil requirements	1
4. Cultural practices	2
5. Pest and disease control	4
6. Uses	6
7. Acknowledgements	6
8. Reference	6
9. Contact details	6

Control measures

It is not fatal to the plant and there is no cure. *Botrytis* resistant varieties are available.

(b) Powdery mildew

Powdery mildew is a fungal disease that appears as dusty-grey or white circles on plant surfaces. The coating expands and grows together, producing a mat of mildew.

Control measures

Powdery mildew can be prevented by spraying sulphur fungicide or neem oil on the plants before the infection is too widespread. All infected leaves or branches should be collected and destroyed. The plants should receive enough air circulation to reduce humidity.



(c) Tomato spotted wilt virus

The tomato spotted wilt virus infects the plants occasionally. Symptoms of tomato spotted wilt virus include irregular blotches, concentric rings, line patterns, and streaks on the leaves. The virus causes the plants to become severely stunted and fail to flower. Young plants may turn brown and collapse. The virus is transmitted by thrips, tiny insects with fringed wings.

Control measures

The tomato spotted wilt virus can be prevented by spraying insecticidal soap and controlling weeds near the plants.

(d) Fungus *Macrophoma*

The fungus *Macrophoma* attacks the foliage, causing the leaves to die back. Symptoms of the fungus *Macrophoma* include dead leaf tips, and lighter green olive leaves in the middle of the plant.

Control measures

Fungus *Macrophoma* can be prevented by a fungicide containing mancozeb or captab

herbicides label instructions should be followed to avoid contamination. Preferably registered chemicals should be used for effective weed control.

5. Pest and disease control

5.1

The plants are generally pest and disease free. The foliage may be attacked by red spider mites, thrips and mealy bug, however spraying only becomes necessary if infestations are severe.

(a) Snail

The plants are infamous for harbouring snails, although the snails do not seem to cause any great damage to the plants.

Control measures

The best way to combat snails is to remove them by hand or to keep ducks.

(b) Spider mites

Spider mites are small spider-like creatures with eight legs, which thrive in hot and dry conditions. Spider mites use their piercing mouthparts when feeding. This causes a yellow appearance of the plants and stippling. Leaf drop and die-off of plants can occur in the case of heavy infestations. Spider mites can multiply quickly. They also produce a web which covers infested leaves and flowers.

Control measures

Weeds and infested plants should be kept down and removed respectively. The plants should be watered regularly and sprayed with insecticides. This will reduce the problem.

5.2

Diseases

The diseases that infect the plants include *Botrytis*, powdery mildew, tomato spotted wilt virus and the fungus *Macrophoma*.

(a) Botrytis

Botrytis cinerea is a fungal disease that appears during warm and damp weather. It appears as grey or brown lesions on the plant and may attack the flowers, preventing them from opening. Other symptoms include red stripes on the leaves and stems.

1. Classification

Kingdom:	Plantae
Family:	Agapanthaceae
Genus:	Agapanthus
Species:	<i>Praecox</i>
African names:	African lily; Lily of the Nile; African Blue; Bloulelie; Agapant (Afrikaans); Isicakathi (isiXhosa); Ubani (isiZulu)

2. Background

2.1 Origin and distribution

Agapanthus plants are perennials most prevalent in the Western United States, but can be found throughout most parts of the world. The name *Agapanthus* comes from the Greek words *agape* (meaning love) and *anthos* (meaning flower) hence the flower of love.

Agapanthus migrated from Africa to England as early as the 1670s where they still remain popular to this day. They are easy to take care of, needing only minimal attention.

2.2 Description

The *Agapanthus* flower is a beautiful blue flower that is indigenous to South Africa. This flower can come in either a blue shade or sometimes a more purplish hue, depending upon where it is located, whereas its shape varies depending upon its exact location, however most *Agapanthus* flowers tend to have a funnel shape.

2.3 Production areas in South Africa

There are two species of *Agapanthus* plants, namely, an evergreen species and a deciduous species. Most evergreen species are produced in Western Cape across the Eastern Cape Province in South Africa. The deciduous species come from the summer rainfall areas such as the Eastern Cape, KwaZulu-Natal, Free State, Gauteng, Mpumalanga and Limpopo provinces.

3. Climatic and soil requirements

3.1 Rainfall

Agapanthus plants occur only in areas where they receive rainfall of more than 500 mm per annum, from sea level to 2 000 m with a distribution range that extends from the Cape Peninsula in the southwest along the southern and eastern coast of southern Africa then inland and northwards into the mountainous region south of the Limpopo River.

3.2

Temperature

The plants are related to the lily and can be made to grow almost anywhere, but perform best in arid conditions. They occur in summer rainfall areas e.g. Limpopo, Mpumalanga, KwaZulu-Natal and other provinces where the temperature sometimes drops below 0 °C in winter and snow may occur. In the winter rainfall region of South Africa the plants go dormant and are unaffected by the winter rains if they have a well-drained site.



The plants can survive certain winter conditions. However they will not be able to survive a snow-storm or an extreme freeze, many of these plants are well suited for some cold weather.

The plants grow in the shade from trees to get protection from the hot sun. They can also be grown in a warm, sheltered position which receives full sun for most of the day. In a hot climate area, the plants do better in partial shade.

3.3

Soil requirements

The plants need a well-drained soil with decayed organic matter. They grow best in a moderately fertile soil. A soil that is too rich promotes soft, lush growth that is prone to winter damage. It prefers neutral to slightly acidic soil, with pH of between 6,5 and 7,5.

4.

Cultural practices

4.1

Soil preparation

Firstly, the existing vegetation should be killed off by pre-emergence herbicides, removed or smothered before beginning to work on the soil or loosen it and to prepare the flower bed area for planting. This can be done with a tiller or by hand, using a spade and garden fork. If the soil is very compacted or has never been tilled, a tractor can be hired to do the initial passes. Thereafter, a lightweight tiller or a spade should be sufficient.

4.2

Propagation

The plants can be propagated by two methods, such as division (root clumps) and seeds. Root clumps should be divided every 2 to 3 years in early spring. Propagation of the plant is generally done by division of the root clumps immediately after flowering. The plants produce attractive clumps of long,

curved, shiny, green, strap-like leaves, which grow from fleshy, tuberous roots. Growing from seed is a slow process.

The seed can be sown in late summer to early autumn, but during cold climates it can be kept refrigerated (not frozen) and sown in spring. It must be kept in the refrigerator in order to prevent it from perishing. Seed should be sown in deep (10 cm) trays with a mixture of equal volumes of river sand and fine compost. This mixture must be kept in the semi-shade and moist. Fresh seed germinates easily at 20 to 25 0 °C and the plants are usually ready within six to eight weeks. The seed should be sown thinly as the seedlings will stay in the tray for their first year. Seedlings should be potted up into individual containers during their second year and can be planted into the garden or permanent pots in the third year. Flowering can be expected from their third or fourth year.

4.3

Planting

Rhizomes can be planted at a depth of 2,5 cm with in-row spacing of 60 cm apart and between-row spacing of 90 cm. The old foliage should be removed as the new leaves will give the plants neat appearance.

4.4

Fertilisation

The plants should be fertilised in early spring and this should continue until they bloom. The soil should be wet prior to the application of fertiliser. A selected fertiliser made for flowering bulb plants should be used. Follow the directions on the label according to the size of a planting site. Seedling and adult plants responded well to composted soil and application of a slow release fertilizer.



4.5

Irrigation

The plants should be kept well watered during the growing season to ensure success. A regular watering schedule should be followed during the first growing season to establish a deep, extensive root system. The plants should be watered when the top 8 cm of soil is dry. Water weekly in summer but in winter allow the soil; to dry off more between waterings.

4.6

Weed control

The suitable time to control weeds is when doing soil preparation. Pre-emergence herbicides can be applied for weeds that appear before planting but