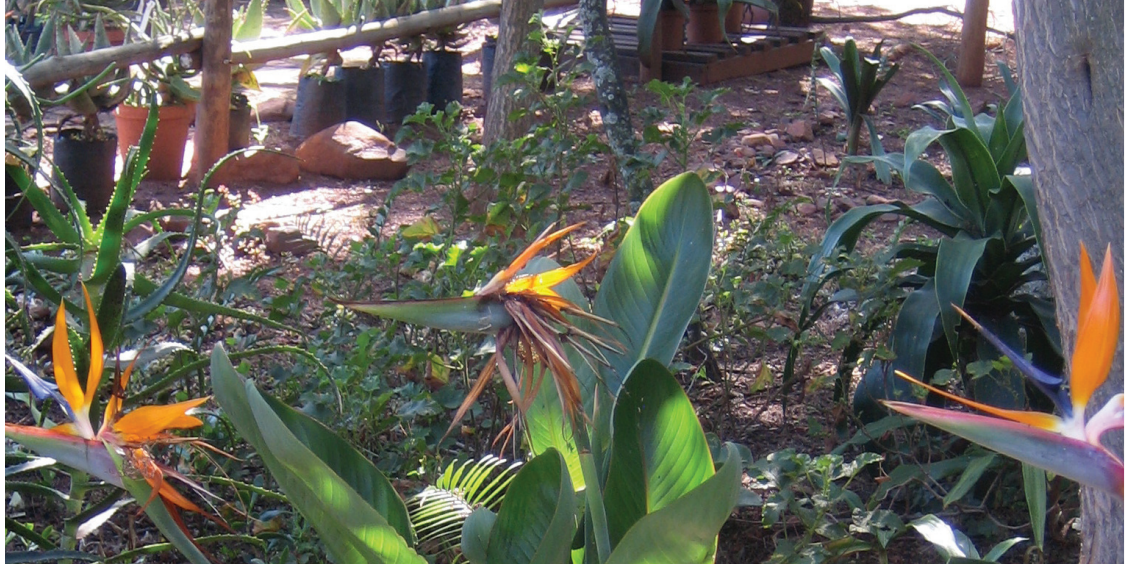

Bird Of Paradise (Strelitzia) Flower

PRODUCTION GUIDELINE

agriculture,
forestry & fisheries

Department:
Agriculture, Forestry and Fisheries
REPUBLIC OF SOUTH AFRICA

Notes

PART V: UTILISATION

Crane-flowers are used for landscaping, creating an impact not only in home gardens, but also in office complex gardens, schools and large parks. The flowers are for cutting and make an exotic addition to floral displays.

The AbakwaMthethwa clan in KwaZulu-Natal uses the strained decoctions from the inflorence to treat inflamed glands and venereal diseases. The seeds are also used in the Cape to produce sour milk.

PART VI: REFERENCES

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PRODUCTION GUIDELINE

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Directorate: Plant Production

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Disclaimer

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3. Storage

The flowers cut at a very tight stage (4 to 5 days before commercial cutting stage) could be opened successfully. Prolonged storage of cut flowers is not recommended and they are normally stored for up to 4 days. The vase life is 7 to 10 days.

4. Transport

The flowers should be transported to the market within 10 days of cutting as their vase life is 7 to 10 days. The flowers can be conveyed by a truck with a refrigerator, in order to maintain their vase life and freshness.

5. Marketing

Bunches of flowers can be sold in bulk-packed crates. Some flower growers prefer to work through plant brokers and agents or supply directly to florists on order. The Multiflora flower auction is the biggest marketing channel for the local marketing of the flowers. The auction is market directed and prices for products are determined by supply and demand. There is also a flower market in Tshwane, the Pretoria Flower Auction, which is situated in the west of Pretoria and works on the clock system like Multiflora.

PART IV: PRODUCTION SCHEDULES

Activities	January	February	March	April	May	June	July	August	September	October	November	December
Soil sampling					W							
Soil preparation					W	W	W					
Planting								S	S	S		
Fertilisation									S	S		
Irrigation	Sr										Sr	Sr
Pest control		A	A	A								
Disease control		A	A	A								
Weed control		A	A	A								
Harvesting	Sr											Sr

W-Winter; S-Spring; Sr-Summer; A-Autumn

8. Disease control

(a) *Bud damage/flower damage*

Bud damage is attributed mainly to *Fusarium* and flower damage to *Botrytis cinerea, Fusarium culmorum* ad *F.avenaceum.*

Control measures

This disease can be controlled by any appropriate bactericides.

(b) *Root-rot*

Root rot is caused by *Fusarium monoliforme* (a seed-borne disease).

Control measures

Pre-soaking of seeds in water at a warm temperature followed by a hot-water (30 ºC) treatment for 30 minutes.

(c) *Infection*

The plant is infected by an organism called Armillaria melle. Soil temperature, pH and microbial flora have been found to be important in the development of the disease.

Control measures

The use of disease free soil was recommended as the best method of preventing further attacks. It can also be controlled by the stress effect, i.e. fumigating with methyl bromide, heat sterilisation and drying out the soil.

9. Harvesting maturity and method

Flowers are usually cut when the first floret opens although cutting the flowers in the tight bud stage can increase the storage period up to 1 month. The flowers are harvested by hand, using sharp secateurs/scissors.

PART III: POST-HARVEST HANDLING

1. Grading

The flowers are graded depending on the market requirement e.g. the price of the flower per stem is normally determined by the Multiflora market, therefore the flowers are graded as per request from Multiflora market.

2. Packing

The flowers are usually packed into standard horizontal fibreboard boxes.

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5. Irrigation

During summer, the plants require abundant supplies of water. Day or two after each irrigation session, the soil should be loosened (do not disturb the roots) to conserve the soil moisture and control weeds.

The first watering should be done immediately after planting and afterwards, it depends on the plant's demands and surrounding conditions. The plants should be irrigated thoroughly to maintain adequate and uniform soil moisture.

The soil should be allowed to dry out between waterings. Soil moisture should be monitored with a sensor such as a tensiometer to find out when to irrigate.

In the garden the plants require frequent and regular irrigations during the early growth stage. The soil should be kept damp by applying 2 to 3 bucketfuls (10 l) of water in the first week of planting. From then on, the plants should be irrigated abundantly with 1 to 2 buckets (10 l) of water at intervals of approximately 1 to 2 weeks.

6. Weed control

Controlling weeds is particularly difficult because of the relatively few herbicides labelled to control weeds on this crop and the problem of access to those herbicides.

7. Pest control

Mealy-bugs *(Planococcus citrii)* and scales *(Aspidiotis camolliae)* are important pests of strelitzia. They cause leaf roll and other malformations of the plants.

Control measures

Recommended insecticide sprays or application of registered chemicals that can be found on DAFF website under Act No. 36 of 1947 that deals with Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies may be used to control the young crawlers of mealybugs.

the ideal stage to separate rooted shoots. They naturally develop underground branches (known as fans) and the multiplication occurs at a rate of 0,5 to 1,5 divisions per branch per year. Branching originates in the division of the apical dome with an absolute absence of branching from axillary buds. The main clump can be divided, however take care not to use too much force, the roots really cling to one another. The same applies to plants in full soil in the garden, but is difficult not to damage the root system when digging them up.

2. Soil preparation

Other vegetation and weeds should be killed off by using pre-emergence herbicides, removed or smothered (buried) before beginning to work on the soil of planting area. The soil should be loosened, using a spade/garden fork, to a depth of between 41 and 46 cm. It should be sifted, using a metal rake to pick out any sticks, stones, roots or weeds and to prepare the flower-bed area.

3. Planting

The pots should be properly cleaned before use and filled with the required quantity of compost. The crane plants are positioned in the centre of the pots and the soil should be firmed watered to settle the medium. The roots are wide spreading and, therefore, care should be taken so that these are not cramped when planting. Removal of the plants from their pots and planting should be done in late spring or early summer. Repotting of young plants should take place every spring, increasing the size of the container every time. For planting in the soil or the garden, a hole of 90 x 90 cm size is prepared and filled with soil and organic matter. A planting density of about 2 plants/1 m2 gives the highest yield during the early years of crop life. The plants take a long time to establish properly and therefore, the roots should not be disturbed unnecessarily.

4. Fertilisation

The plants should be fertilised at weekly intervals with a general purpose, water soluble fertiliser during spring and summer. The fertiliser should be mixed according to directions on the label. The plants respond well to regular feeding with a controlled-release fertiliser and compost. The plants should be watered immediately after fertilising to distribute the fertiliser around the roots.

The plants respond well to generous applications of manure and compost during summer. A fertiliser with proportions 3:1:5 (NPK) encourages flowering.

PART I: GENERAL ASPECTS

1. Classification

Kingdom: Plantae
Family: Strelitziaceae
Scientific name: Strelitzia reginae
Common names: Crane flower, bird of paradise flower, orange strelitzia (English), isigude (Nguni), kraanvoëlblom (Afrikaans)

2. Origin and distribution

Strelitzia reginae arrived in England in 1733 and was named after Queen Sophia Charlotte, the wife of George the third King of England. She was a princess of Mecklenburg-Strelitz, hence the genus *Strelitzia.*

Millions of the fascinating blooms of Strelitzia reginae are sold as cut flowers. In Los Angeles strelitzias are so extensively planted that they are regarded as the emblem of the city. Strelitzia reginae is, however, indigenous to South Africa where it grows wild in the Eastern Cape. The strelizia flowers grow in rocky grassland and between other shrubs along the riverbanks and in clearings in the coastal bush. Worldwide, Strelitzia reginae is one of the most popular horticultural perennials.

3. Production levels

3.1 South Africa

The production of crane-flowers in South Africa has not been documented yet.

3.2 Internationally

Most flowers and plants in Europe are grown close to the market. For that reason, countries with large domestic markets, like Japan, the US and Germany are also major flower producers. The Netherlands is by far the largest producer in the EU, accounting for 40% of total production value. Other leading producers are Italy, Germany and France.

4. Major production areas in South Africa

Strelitzia reginae occurs naturally in South Africa: Along the eastern coast, from Humansdorp to northern KwaZulu-Natal (KZN) in coastal bush and thicket. It grows along river banks in full sun. However, sometimes it occurs and flowers in forest margins in the shade.

5. Cultivars

There are five species of crane-flower, all from the Eastern Cape and KZN provinces of South Africa. The five species of crane-flower include Strelitzia alba (white bird of paradise), Strelitzia caudate (mountain strelitzia), Strelitzia nicolai (wild banana in former Transkei), Strelitzia juncea (African desert banana) and Strelitzia reginae (crane-flower). The most famous of the five is Strelitzia reginae, commonly known as the bird of paradise flower or the crane-flower. It produces huge flowers that look like the head of crane, mostly orange in colour, with some yellow variants.

Plants are bred for certain characteristics or traits. If yellow progeny is needed then two yellow plants must be crossed. At Kirstenbosch there were seven yellow plants in the nursery in the 1970's. John Winter, who was a curator during that period, began a project to increase the stock. It took nearly 20 years of careful selection and hand-pollination. By 1994, the original stock had been increased sufficiently to enable the introduction of the yellow strelitzia to horticulture. It was released and traded under the name Kirstenbosch Gold until 1996 when the National Botanical Institute was granted permission to rename it in honour of Nelson Mandela.

6. Description

6.1 Mature plant

It is a monocotyledon (single-seeded plant indigenous to South Africa. It flowers for an extended period with its vivid orange and bright purple/blue inflorences and is an ideal pot plant and cut flower subject.

6.2 Essential part (Flowers)

The crane-flower is a tufted, evergreen, acaulescent (stemless) perennial herb up to 1,5 m tall and 2 m in diameter. The inflorescence stalk is 700 mm tall with 4 to 6 flowers that emerge in succession in a boat-shaped spathe of about 200 mm long, producing a mucilaginous (sticky) substance when in bloom. The flowers have orange sepals and blue/purple petals and are borne from May to December.

7. Climatic requirements

7.1 Temperature

When Strelitzia reginae needs full sun to light shade (during the hottest part of the day) with warm temperatures, and should be kept crowded for highest number of blooms. In very cold climates it is better to grow them in pots that could be moved indoors or protected, roofed area when freezing temperatures are expected. The plants are wind resistant and grow well in coastal areas. They are susceptible to frost and do best in air temperatures between 17 and 27 ºC. Although they can tolerate air temperatures as low as 10 ºC, cooler air temperatures can slow leaf and flower development. Outdoor temperatures of 10 to 13 °C at night and 20 to 22 °C during the day are suitable. The plant is sensitive to cold so it needs sheltered position and no frost as the flowers and leaves could often be damaged. In nature (coastal areas) the plants grow in a mild climate with rain occurring throughout the year.

7.2 Soil requirements

Strelitzia reginae grows in rich, loamy soil, especially when they receive more water throughout the year. The soil pH required for growth is between 5,6 and 8,5. The soil must have a good water-holding capacity (WHC). A high-quality, general-purpose potting soil, sand or perlite and peat should be used when planting them in pots.

7.3 Rainfall requirements

Strelitzia reginae requires an annual rainfall of about 1 000 to 1 250 mm, which is experienced mainly from spring to autumn with occasional winter rain. The plant should be kept drier in winter.

PART II: CULTIVATION PRACTICES

1. Propagation

Crane-flowers are propagated by means of two methods, namely, seeds and divisions. Seeds should be sown in spring. These require a minimum temperature of 25 ºC for reliable germination. A well-drained mix of equal parts of perlite/peat/sifted bark should be used in a 10 cm pot. Plant them as deep as they are large. The fresher the seed, the higher the yield; germination occurs between 4 and 10 weeks after sowing. The young plants should be kept in a shaded place and be repoted each time they become root bound in the pot.

With optimum care it takes 3 years from seed to flower and the plants normally have a mature appearance after 5 years.

Divisions: Container-bound plants have to be repoted every 4 years, (this is