

## FREESIA BULB FLOWER



Source: Anniesannuals.com

### CLASSIFICATION

Kingdom: Plantae

Family: Iridaceae

Botanical name: *Freesia leichtlinii* subsp. *alba*

Common names: white freesia, wild freesia (Eng.), ruikpypie (Afri.)

#### 1. Background.

##### 1.1 Origin and distribution

Freesia belongs to the large and very diverse *Iridaceae*, a family of about 65 genera and 1 800 species distributed all over the world. *Freesia alba* first appeared in England nursery in 1878 and quickly spread to Europe, Africa and North America. It appears to have caused quite a sensation, and appeared in almost horticultural publication of note in Europe and America in the years following its introduction. It was first described as a genus in 1866 by Chr. Fr. Echlon and named after German botanist and doctor Freese (1794-1878).

Breeding began immediately after *F. alba* appeared on the market and continues. The species name *alba* means white in Latin.

## 1.2 Production areas in South Africa

With its rich colour, flower fragrance and elegant form, freesia production is becoming increasingly popular in the country. *Freesia alba* is found growing in sandy or stony soils amongst dune scrub or at forest edges, usually in light shade, also in damp places near water in the Western Cape Province mainly along the coast, from Hermanus to Plettenberg Bay.

## 1.3 Description

Freesia bulbs flowers are herbaceous perennial that grow from a conical corm with 1 - 2.5 cm diameter. The leaves are narrow with length of 10 to 30 cm and a sparsely branched stem with height of 10 to 40 cm bearing few leaves and loose one-sided spike of flowers with six tepals. Flowers are white with purple flush on the outside. It sometimes has a yellow mark on the lowest tepal and with purple colour on the throat. The flowers have strongest and sweetest fragrance. The flowers are also broadly funnel-shaped with length of 20 to 30 mm. Freesias are said to symbolise sweetness, friendship and trust.

## 2. Climatic and soil requirements

### 2.1 Rainfall

Amount of rainfall needed during active growth periods for freesia bulb flower is 25.4 mm per week for adequate moisture in soil.

### 2.2 Temperature

Freesia sprouts in autumn and flowers in winter (July to August) at the relatively low temperature of 8 to 10°C. Freesia seeds must have heat to germinate and that the best temperature is around 20° to 22°C. Freesia seedlings should be kept in a constant temperature of about 20 to 22 °C until the plants are 5 to 6 cm high. Thereafter the temperature can be lowered to 12 to 14°C.

Freesia bulb flowers are hardy to moderate frost and severe frost can damage leaves. Freesia bulbs can be planted in a garden site whereby they receive sun to light shade. The plants need some protection from the hot midday and afternoon sun in warmer winter regions. They should also be protected from very cold conditions.

Pots of planted freesia bulbs can be placed in a well-ventilated, sunny spot, preferably on the side that receives morning sun and afternoon shade.

## **2.3 Soil requirements**

Freesia bulb flowers require well-drained soils, but thrive on light fertile and slightly acid soils. Compost or acid compost can be added to soil before planting if the soil is alkaline. Add plenty of organic matter to improve thin-layered soils. A good mulching material with adequate supply of nutrients is essential for plants to attain maximum production. It was observed that black mulch resulted in minimum time to germination and maximum germination percentage of freesia bulbs.

## **3. Cultural Practices**

### **3.1 Soil preparation**

It is important to take soil samples for soil analysis before planting freesia bulbs in order to find if there is any deficiency of nutrients before the soil can be supplemented with deficient nutrients. Weeds should be cleared thoroughly before planting. The available 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 planting site. This can be done with a tiller or by hand, a spade and garden fork.

The bulb beds or containers should be prepared at least a week before planting to allow fertilisers time to dissolve otherwise they may burn the bulbs.

### **3.2 Propagation**

Freesia bulb flower can be propagated through seeds and bulbs.

Freesia seeds are sown during autumn. Fresh seeds germinate readily in 4 to 5 weeks. It takes longer to produce flowers. Freesia seeds need to be pre-germinated. Studies showed that pre-germinated seed produced a better stand and more flowers than seed that was not pre-germinated. Seeds should be pre-treated by soaking them in 20 °C water for about 24 hours before planting.

Freesia bulbs multiply rapidly forming dense clumps after few years. It is advisable to dig up the bulbs and separate them every 2 to 3 years to avoid overcrowding.

### **3.3 Planting**

Freesia bulbs are best planted from mid-April to May (autumn) for a stunning display of flowers from August to September (late winter to early spring). Freesias lay dormant during the hot, dry summers, are nurtured by the cooler weather and ample rains of autumn and winter, and then brought to life to show their beauty in spring.

Freesia bulbs are planted in a hole with depth of 5 cm and the interrow spacing should be 5 to 8 cm. Large freesia bulbs should be spaced with 10 to 15 cm between rows while small freesia bulbs should be spaced with 3 to 5 cm between rows. Freesia bulbs look like small, slim onions so they should be planted in a hole with pointy-end facing upwards. The garden should receive little water in summer.

Container of planted freesia corms should be stored in a cool dry place during summer. The planted freesia corms in container can be grown in a permanent spot in the garden by choosing a mole-proof rockery or sink a wire basket whereby freesia bulbs/corms is planted in that basket.

### **3.4 Fertilisation**

The soil should be dug over to depth of a spade and add generous amount of compost before planting. High phosphorus fertilizer should be applied during spring. A general-purpose fertilizer should be added after the flowers have died in order to help the plant to regenerate and restore nutrients it needs for the following growth cycle.

### **3.5 Irrigation**

Freesias do not require excessive watering; a good rule of thumb is to leave the soil dry for a few days between each watering. It is important to start watering as soon as freesia bulbs are planted, because if the bulbs lack water they may fail to flower. Freesia bulbs roots require moisture to establish itself. It is best to irrigate bulbs with sprinkler irrigation method for 40 minutes every 4 to 5 days. A layer of mulch should be added to the soil to help in conserving moisture.

Freesia bulbs planted in pots can be irrigated thoroughly every 7 to 10 days. Overwatering, particularly for container-grown species should be avoided as it can lead to rotting. As the temperatures rise towards the end of spring and freesia plants resume dormant, watering of freesia bulb plants should be stopped and dry out of growth medium should be allowed.

### **3.6 Weed control**

Weeds can be controlled during soil preparation. Pre-emergence registered herbicides can be applied for weeds that appear before planting but herbicides label instructions should be followed to avoid contamination. It is recommended that only registered and recognized chemicals can be used. A layer of mulch should be added on freesia bulb garden in order to suppress weeds down.

### **3.7 Pest and disease control**

#### **3.7.1 Pests**

a. Aphids

Aphids are soft-bodied sap sucking insects that causes extensive damage to leaves and flowers.

Control:

They can be prevented through registered pesticide spray or wipe them away daily until their population is gone.

b. Slugs and snails

Slugs and snails damage leaves and flowers during the night. This lead to fungal dry rot attacks the corms.

Control:

They can be prevented by handpicking them during the night and dunk them into a bucket of soapy water.

### **3.7.2 Diseases**

a. Bacterial soft rot

The disease is caused by a bacterial infection. Symptoms of freesia bulb flowers infected by bacterial soft rot include water-soaked spots on leaves, stems or blooms which enlarge and dry out leaving a grey, black or brownish spot behind.

Control:

Bacterial soft rot disease can be prevented by reducing watering of plants. It can also be controlled through destroying infected plants to avoid the bacteria from spreading.

b. Fusarium wilt

This fungal disease lies dormant in the soil waiting for its chance to infect freesia bulb plants. Symptom of freesia bulb plants infected by this disease include the beginning of freesia to wilt despite adequate care. The leaves are yellow and start to fall.

Control:

The disease is prevented through improving garden drainage and solarizing the soil.

c. Iris leaf spot

The signs of disease on freesia leaves include tiny, yellow to green water-soaked lesions. Spots on freesia leaves appear more aggressively once the plants have bloomed.

Control:

Freesia bulb plants can be moved to a better draining site, removing all infected leaves at the end of season and when clumps are divided. Infected tissues can also be removed when it appears to reduce active spores.

### **3.8 Harvesting methods**

The freesia flowers are harvested during late winter to early spring season (August to September). Freesia flowers should be harvested in early morning after the dew has dried for quality purpose. Freesia stem should be cut at an angle with pruning shears or sharp scissor and are graded according to stem length.

The freesia flowers should be placed in bucket of water after harvested for cooling. Freesia flowers vase life can last up to three weeks.

The strong points of the Freesia are; the flowers are elegant, fragrant and present a wide variety of colours; they live long in a vase and do not soil the water; the branches are easily transported, because they are light and not bulky; year around production is possible.

### **4. Uses**

Freesias are loved for their impressive looks and beautifully sweet fragrance and they are mainly used for decorations in gardens, create colourful display in containers. They are also used to make wedding bouquets due to their reasonable long vase-life.

Freesia flowers are also used in hand creams, shampoos, candles, etc. due to their pleasing scent. Their sweet fragrances also attract insects such as bees in garden which lead to healthy ecosystem.

## 5. References

Belous, O., Klemeshova, K., and O., Pashchenko. 2017. Comparative analysis of photosynthetic indicators in freesia hybrids on the Black sea coast of Krasnodar region. *Hort. Sci. (Prague) Vol. 44, 2017 (2): 99–104*

Duncan, G. 2000. Grow bulbs. A guide to the species, cultivation and propagation of the South African Bulbs. 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.

<https://en.wikipedia.org/wiki/Freesia> accessed on 13 November 2018

<https://www.easytogrowbulbs.com/pages/freesia-planting-guide> accessed on 14 November 2018

<https://www.gardeninginsouthafrica.co.za/1245-january/freesias-are-one-of-the-most-fragrant-spring-flowers-and-are-said-to-symbolise-sweetness-friendship-and-trust> accessed on 08 November 2018

<http://www.gardenersnet.com/bulbs/freesiaplants.htm> accessed on 12 November 2018

<https://www.hadeco.co.za/our-products/freesias-4-separate-colours-25-ranunculus/> accessed on 06 February 2019

<https://www.lifeisagarden.co.za/the-magic-of-bulbs/> accessed on 13 November 2018

Jeppe, B. & Duncan, G.D. 1989. Spring and winter flowering bulbs bulbs of the Cape. Oxford University Press, Cape Town.

Mansouri, B. B. EFFECTS OF TEMPERATURE AND LIGHT ON GROWTH, FLOWERING AND CORM FORMATION IN FREESIA  
*Publication 304, Laboratory of Horticulture,  
Agricultural University, Wageningen, The Netherlands*

Manning, J., Goldblatt, P. & Snijman, D. 2002. The colour encyclopedia of Cape bulbs. Timber Press, USA.

Manning, J.C. and Goldblatt, P. 2010. *Botany and horticulture of the genus Freesia (Iridaceae)*. Strelitzia vol. 27. Pretoria: South African National Biodiversity Institute, SANBI. ISBN 978-1-919976-58-7

Notten, A. 2004. *Freesia leichtlinii* subsp. *alba*. Kirstenbosch National Botanical Garden

Younis, A., Bhatti, M.Z.M., Riaz, A., Tariq, U., Arfan, M., Nadeem M., and M., Ahsan. Effect of different types of mulching on growth and flowering of *Freesia alba* cv. Aurora. Pakistan Journal of Agricultural Sciences 49(4):429-433

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