

## Gypsophila Growing in Central Australia

*(Gypsophila paniculata)*

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### INTRODUCTION

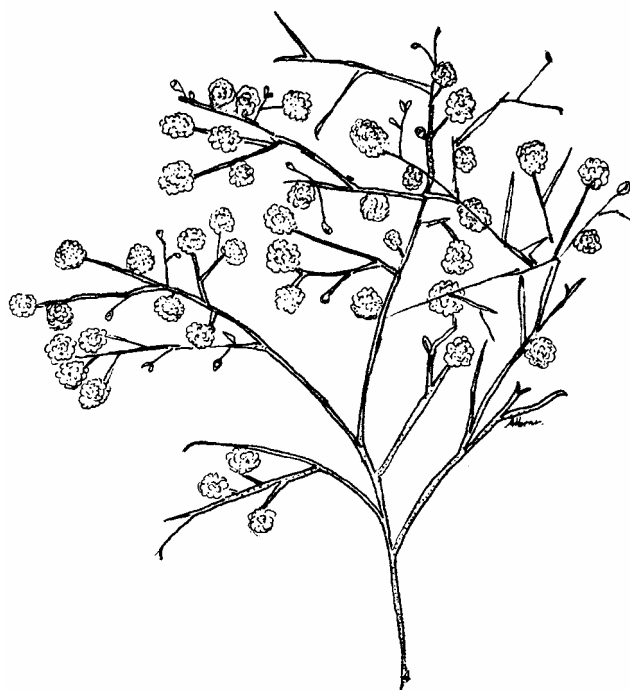
*Gypsophila paniculata* (baby's breath or perennial gypsophila) is a member of the Caryophyllaceae family. The flower is commonly used in wedding bouquets and as a filler behind roses. Several varieties trialled in Tennant Creek, Ti Tree and Alice Springs performed well but Bristol fairy, the main variety interstate, performed best.

### CLIMATE

Gypsophila is termed a long day plant, requiring a day length between 12 to 18 hours to initiate flowering, depending on the clone.

Long days with warm temperatures promote good flowering. Low night temperatures will cause the plant to remain in its vegetative stage. If minimum temperatures average 10°C, it will take 120 days to flower.

Gypsophila is tolerant of frosts, however the severe hot weather experienced in Central Australia during January to March affects the flower quality significantly. High temperatures cause the plant to bloom quickly, flowers to dry out, and stem lengths to be short. Shade cloth (50%) over the plants can improve quality, however prices are usually low during summer, so it is not worthwhile producing under shade.



## VARIETIES

There are several varieties of gypsophila available. The main differences between varieties are flower size and day length for flowering. Growers should seek market information about which variety is demanded.

## VARIETIES TRIALLED IN CENTRAL AUSTRALIA

Several clones (R14, R11 etc.) of three varieties were trialled in Central Australia.

### Bristol fairy - small flowers

R14 ~ 2.5 bunches/plant

801 ~ 2.7 bunches/plant

Original ~ 3.0 bunches/plant

### Perfecta - large flower

R11 ~ 1.5 bunches/plant

R217 ~ 1.8 bunches/plant

### Flamingo - pink, small flower

R33 ~ 1.1 bunches/plant

Bristol fairy is the preferred variety and performs better than the others in the Ti Tree area, which is 200 km north of Alice Springs.

## SOIL AND FERTILISER

The plant's roots are easily damaged by high soil temperatures, water-logging, high levels of soluble salts and herbicide residues.

Optimum soil pH is 6.5 to 8.0.

Gypsophila has low nutritional requirements. Too much fertiliser will result in thin, weak and poor quality stems.

A recommended fertiliser regime for Central Australia consists of 500 kg/ha superphosphate applied before planting, and weekly application of ammonium nitrate (0.88 g/plant) and potassium nitrate (0.52 g/plant). When stems are longer than 25 cm fertiliser applications should cease.

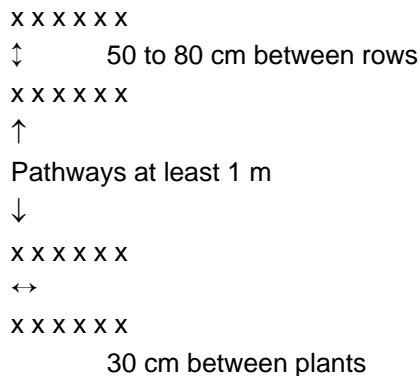
General micronutrients need only be applied once a year, depending on leaf analysis. These can be applied either through the irrigation system or as a foliar spray.

## PLANTING

Gypsophila should be bought as seedlings from reputable propagators and should be ordered three months before planting. Planting should take place in February and March if flowering is to occur during winter and early spring months.

Recommended plant spacing is 30 cm. Each bed consists of two plant rows 50 to 80 cm apart. The beds need to be at least 1 m apart to allow access to the crop. Larger path spacings can be used for machinery. Wire supports 60 cm above the ground are needed on each side of the bed

to hold the flowers up out of the soil. Netting may be used instead of wire supports, however this may be difficult to manage when harvesting.



## **IRRIGATION**

Frequent watering is required following planting to avoid moisture stress. Once established, gypsophila is relatively drought resistant due to its deep root system. As the plants start to flower the amount of irrigation can be reduced substantially.

Drip irrigation with emitter spacing of 30 cm is recommended. Each row of plants will require an irrigation line.

The amount of water required depends on the soil and climatic conditions. Tensiometers are useful instruments to monitor and assess water requirements.

## **WEED CONTROL**

Gypsophila can be planted through a plastic mulch if weeds are a severe problem.

Pre-emergent herbicides can be used before planting to stop many weeds from germinating. Grass weeds in the crop can be controlled using a selective herbicide.

## **PEST AND DISEASE**

Disease is not a major problem in Central Australia due to the dry conditions. If overwatering occurs, diseases such as collar rot (rhizoctonia) may appear. This can be controlled using a registered fungicide.

Botrytis, which causes flower browning, occurs in damp conditions and can be controlled with a preventative fungicide.

Insects are a major problem for gypsophila both locally and interstate. The major pests include grubs and caterpillars, aphids, grasshoppers, thrips and mites. All may be controlled by spraying with a suitable insecticide.

## **HARVESTING AND MARKETING**

Flowers must be free of pests (e.g. heliothis) and disease. Harvest flowers when 70% are open. This should be done in the cool of the day.

Poor flowering can be due to either water stress (too much or not enough irrigation), or selecting the wrong variety for planting (clonal selections with a high critical photoperiod requiring about 12-18 hours daylight each day to flower). Delayed flowering can be caused by over fertilising during the growing period.

Flowers are sensitive to ethylene which will cause them to become over mature. They are also susceptible to drying after harvest. Place flowers into a high humidity (98% RH) coolroom at 2°C as soon as possible. Forced air cooling is best for rapid cooling of the flowers.

Strip the basal leaves and grade and bunch to market specifications (250 g in Australia). Store flowers with stems in water containing 5 mL/L bleach (household bleach - sodium hypochlorite) and 20 g/L sugar. Place in a cool room. This solution should be replaced after 3 days, or earlier if it becomes cloudy. Try not to store flowers for more than 2 weeks.

Always scrub and clean buckets in bleach. Flowers are best transported in acid free tissue paper as plastic sleeves may cause flower browning due to heat buildup.

When markets are flooded and prices are low gypsophila can be dried. Bunches should be sleeved before stems are put into the drying solution.

The drying solution consists of 1 part glycerine to 2 parts water and 1 cap of bleach. Fill a bucket to a depth of 50 mm with this solution. Leave stems to soak for 48 hours at room temperature. After drying, pack 70-80 bunches to a box (900 mm x 300 mm x 300 mm). Dried flowers will last 12 months.

The estimated market potential for gypsophila is 20,000 bunches per week. The major markets are Sydney, Melbourne and Adelaide, as well as the local markets of Alice Springs and Darwin.

Prices for gypsophila vary considerably from state to state and season to season. Prices are generally higher during the winter months. Growers should continually monitor and compare prices in the various markets during the harvesting season.

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