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Year round production of Australian daisies as flowering potplants

Australian native daisies currently produced as garden plants are generally available only in spring and summer. Techniques commonly used in the nursery industry could enable out-of-season sales of numerous species as flowering potted plants. Growers could target peak demand periods such as Mothers Day, Easter and Christmas.

Expanding demand for new flowering plants on both the domestic and international markets has focused attention on the development and commercialisation of Australian daisies. Plant collecting, selection of superior species and forms, and recent breeding efforts have bought a number of daisies into commercial prominence.

Many daisies are sensitive to day length and the manipulation of photoperiod (the length of natural or artifically applied light or darkness in each daily cycle) and temperature to produce blooms outside the normal spring flowering season may hold the key to further development of native daisies as flowering potted plants.

Daisy review

Research by Dr Kerry Sharman [1] in 1992-93 evaluated the horticultural potential of 44 species and cultivars from 13 genera of Asteraceae. The study identified those with potential as flowering pot plants and showed how they might be manipulated for year-round production of plants in flower.

The suitability of each variety as flowering pot plant, hanging basket, tub specimen, rockery or bedding plant and cut flower was assessed. A panel of 17 nurserymen chose nine species (see box) as having potential as flowering potted plants based in their compact upright growth and floriferousness.

Dr Sharman studied the germination, photoperiod, temperature and cultural requirements which control the growth habit and flowering time of a number of species. Species evaluated depended on the availability of plants but trials included the nine chosen species whenever possible. Plants were grown in growth cabinets, glasshouse and field environments.

Species with potential as flowering pot plants

(In order of decreasing preference by the selection panel)

***Rhodanthe manglesii* (upright form)**
Rhodanthe floribunda
Schoenia filifolia* subsp. *filifolia
Brachycome halophila
Lawrencella davenportii
Schoenia cassiniana
Hyalosperma cotula
Lawrencella rosea
Hyalosperma glutinosum* subsp. *venustum

Details of all species examined are contained in the final HRDC report and in an article by Dr Sharman, 'Australian daisies deserve wider recognition' in *Australian Horticulture*, September 1993. Copies of the report - 'Year Round Production of Flowering Daisies' (Final Report NY230) are available from HRDC (Price $20.00). Here we concentrate on findings related to increasing the commercial potential of flowering potted plants.

Daylength manipulation

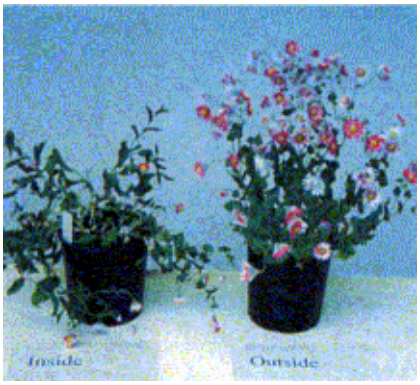
Research showed the effect of extending daylength by artificial light. The provision of long day (16 hours) or night break (8 hours of light plus 4 hours of low intensity light in the middle of the night) treatments can promote the flowering of many species outside their normal flowering time, enabling, for example, the production of flowering plants in winter.

The *Rhodanthe* and *Schoenia* species flowered approximately 30 days sooner under these treatments. The two *Lawrencella* species flowered sooner in short days (eight hours of light) and the use of blackout curtains to create an artificial short day could provide flowering product of these species during summer.

Rhodanthe manglesii (syn. *Helipterum roseum*) flowering in response to (ABOVE) long day lengths and (BELOW) cool outdoor growing conditions

Temperature control

Temperature also influences flowering in native daisies. The study indicates that successful production during hotter months may require temperature control. Plant growth trials in late winter and spring showed many species flower sooner and produce more flower buds when grown in the open outdoors rather than in a heated glasshouse. Mean maximum and minimum temperatures throughout the growing period were 25/15°C (day/night) in the glasshouse and 23/10°C in the outdoor area.



Sequential planting

The study looked at year-round sequential (seasonal) planting in a glasshouse and outdoors as a method for extending the availability of flowering plants. Times from planting to appearance of flower buds and to opening of first flower are listed for each species tested. The results could be used to form the basis of planting guides to extend flowering seasons without daylength control.

Germination techniques

Poor seed germination currently restricts the commercialisation of native daisies. Dr Sharman investigated the effect of scarification (puncturing of the seed coats), gibberellic acid (plant hormone treatment) and light on germination and dormancy of 27 species. Recommendations for improved propagation of each of the 17 species that germinated are documented in the research report. They will be of particular interest to seed stockists.

No single treatment resulted in optimum germination for all species. Results in general show that gibberellic acid promotes germination, breaks embryo dormancies also broken by light, and overcomes inhibitions imposed by the testa and pericarp, in a variety of daisies. Achenes (fruits) were soaked in a solution of 500 mg/L GA_3. The results suggest that when little information is available on a species a pregermination treatment of gibberellic acid would be beneficial.

Acknowledgments

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[1] Former research officer, Queensland DPI.

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