

Activity # 1- Assessing Horticultural Crop Suitability for the Queensland Murray Darling Basin Study Area

Specific Biophysical Crop Information – Native flower & foliage crops

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Activity 1 — Project Team

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Native Flower & Foliage Crops

Based on the biophysical requirements and limiting factors, some Native Flower & Foliage crops are potential crops for the Balonne-Border Rivers Region of the QMDB. The most critical limiting factor is good domestic and export market knowledge and supply agreements.

Crop Matrix:-

	Annual or Perennial Crop	Native Flower & Foliage
Currently Grown (Y/N)	Qld	Y
	QMDB	(Production has occurred in past)
	NSW	Y
	Vic	Y
Frost Sensitivity (Y/N or Deg C)	Seedling	Y/N (varies with species)
	Growth	N
	Reproductive	N
Low Temp Sensitivity (Y/N or Deg C)	Seedling	N
	Growth	N
	Reproductive	N
High Temp Sensitivity	Seedling	N
	Growth	N
	Reproductive	N
Rainfall Sensitivity	Y/N	Y
	Growth Phase	Flowering & Harvest
Special Soil Requirements	Y/N	Y
	Requirement	Well drained
Chilling Req.	Y/N	N
	(Hours)	N
Water Quality	Sensitivity (dS/m)	<1.2 but varies with species
First Planting dfate	(Month)	Sept establishment best
Last Planting Date	(Month)	Not applicable to perennials
Length of harvest	(Weeks)	Varies with species
First Harvest	(Month)	Oct / Nov varies with species
Last Harvest	(Month)	Mid - summer
Full Production	(Years)	Varies with species
QMDB	Y/N	Y

Native Flowers and Foliage Crops in the QMDB Study Area

The flower industry is complex; though high value, flowers and foliage are very perishable and quality product is the cornerstone of repeat orders and profitability. All aspiring producers should thoroughly investigate potential crops, potential markets and buyer expectations of quality, price and supply consistency. Consult widely with existing suppliers (both local and in other production locations) as well as visiting the major Australian flower markets and floral export agents.

What makes a flower suitable for commercial growing?

Most traditional flower crops grown commercially today are the result of many years of intensive selection and breeding. For example, carnations have been grown for over 2000 years and have been improved by breeders since the 16th century, making the carnations that a florist uses today very different from the original wild parents. This means that a wide range of flower colours and forms is available to cater for the fashion trend of the moment. Also, a great deal is known about the cultivation of these crops—growers can adapt this information to suit their situation and market.

In sharp contrast, relatively few native Australian and South African plants have been the focus of rigorous improvement programs. There are an estimated 30 000 Australian native species, and any selection programs have begun only relatively recently (in the UK in the 1850s and during the last hundred years in Australia and elsewhere). **Many commercially grown wildflowers** are basically still **'wild' plants**. While some improved selections are vegetatively propagated (grown from cuttings or in tissue culture), many others are grown from seed. Some species, for example kangaroo paw and wax flower, have already become **'world crops'** and offer the market a great diversity of form and colour. For many other wildflowers, there is **limited knowledge** about how to **grow them successfully and in different parts of Australia**.

Wildflowers and traditional cut flower crops differ in the length of the flowering season. Under outdoor conditions in much of Australia, many crops, such as roses and carnations, produce flowers throughout most of the year. Other crops, such as chrysanthemums, have a short flowering season, but commercial growers can produce flowers for most of the year by choosing early- and late-flowering varieties and by artificially controlling the day length under which they are grown.

Native Australian species have a relatively **short flowering season**, and **most flower in spring**. Little is known about what triggers flowering in these plants, so the ability to get most species to flower on demand is a long way off. Undoubtedly there are benefits of applying production technology developed for traditional flower crops to wildflower growing. Many of the South African proteas also flower for a relatively short season, but some, such as king proteas, flower for much of the year. Flowering season, both time of year and duration will vary with geographical location. (Gollnow 2013).

The wildflower industry in Australia

The total Australian cut flower industry is modest by world standards, representing less than 1% of world flower trade. It is comprised of two sectors: traditional and exotic flowers, such as roses, carnations, chrysanthemums and tropical cut flowers; and wildflower species from Australia and South Africa. Most flower exports from Australia are wildflower species. These are mostly sold fresh, however, a significant-market also exists for dried and preserved products (Carson et al 2000, pp. 3).

The commercial cultivation of Australian native and South African plants for cut flowers and foliage is an established industry producing product for sale on both domestic and export markets. This industry is often referred to as the 'wildflower industry' to distinguish it from the traditional flower industry (also called the exotic or soft flower industry).

Traditional flowers include annuals, roses, chrysanthemums, bulb crops, lilies and the like. The traditional flower industry forms the larger part of the Australian flower industry, with a longer history, significantly greater production and value, and a greater number of growers. Cultivated Australian native product is mostly of better quality and more environmentally sustainable. **Reliance on bush-picked** product is rapidly **diminishing** for all but foliage products, for which the economic viability of propagating plants from cuttings or seed is questionable or technically too difficult. The industry is becoming increasingly competitive.

Research and development of new products has concentrated on species with proven market appeal. Propagation systems are improving, and the focus is on new varieties or forms with improved cut flower features. Most native Australian and South African flower and foliage crops are currently produced as open-air crops in the ground. Some are produced under rain shelters. The latter system has the potential to greatly increase the supply of flowers and thus the profits, but only certain species (for example, flannel flowers and certain kangaroo paws) warrant the higher investment required.

The greatest profits are potentially made from growing and marketing new flower products. But these new lines also present a greater risk. Their market appeal needs to be assessed early, and efforts must be made to build market awareness of them as something novel and therefore deserving of a higher price. Once a flower line is grown by a larger number of growers and has become well known in the marketplace, the returns per bunch or stem tend to be lower. In times of high volume or oversupply, **only the best-quality** product will sell, and on the export market this price may not cover all growing and marketing costs. Most of Australia's flower exports are native Australian and South African flowers and foliage. **Worldwide production** of these species **is significant**, but **Australia's share** is currently about **10%** of the total.

Accurate statistics are difficult or impossible to obtain, because 'wildflowers' are a minor component of the world flower trade, where the 'top' flowers are dominated by traditional species such as roses and chrysanthemums, and flowering pot plants are often included in floriculture data.

Interest in growing wildflowers remains strong for several reasons, including:

- a greater local demand for high-quality, cultivated native flora
- compatibility of South African products with natives, as they require similar growing conditions and are used together in floristry
- stronger targeting of key crops
- greater availability of basic production information
- development of crop-based and locally based grower networks
- wholesalers and exporters fostering grower development through better feedback and crop recommendations
- stronger collaboration between the research and development institutions and industry
- increased pressure to reduce bush-picking
- restructuring or downturns in other agricultural industries.

While accurate industry statistics are not available, the Australian wildflower industry is believed to have a domestic market share of 10% to 15%. In 2006–07 the gross value of production of the Australian wildflower industry was valued at \$40 million, with exports worth \$29.88 million (Foster M 2009). There have been no reliable assessments since, but the values above will have fallen owing to the global economic downturn, adverse weather and of course exchange rate fluctuations. Unlike the traditional flower industry, which is a mature industry, the wildflower industry still has the characteristics of a developing industry, with a high percentage of new, inexperienced growers. However, it is a more export-focused industry.

To date, growers have tended to work cooperatively, and a number of active grower networks and associations have been formed. Unfortunately, the industry is still very fragmented, with a large number of small businesses involved and a multiplicity of marketing channels; it also lacks accurate industry statistics and forecasts. Many growers are part-time flower growers who have other business or farming interests. (Gollnow B. 2013, pp.83)

Production Site

The site should have soil that is internally well drained. A site capable of dispersing water down a slope does not constitute good soil drainage in its own right. Deep sands, loams and some highly structured red clay soils derived from volcanic activity will drain water easily through their profiles. Wildflowers generally prefer sandy soils with a pH of 5 to 7.

Water Supply

A plentiful supply of good quality water with low salinity: that is, a chloride content of not more than 220 parts per million (ppm.) or 0.65 milliSiemens per centimetre (mS/cm) is desirable. Flower growers with 3 to 4 ha of crop can go through 1.5 to 2 million L each summer, and that is using water-efficient drippers. Typical horticultural overhead spray irrigation could require more than twice this amount for the same area. (Gollnow B 2013, pp.84)

Biophysical Requirements and Limiting Factors (climate)

Flower crops will need protection from damaging winds. Avoid sites with extreme temperatures (hot or cold) and high wind speeds. Many species are sensitive to frost during flower development and, of those that aren't they may still be vulnerable as young plants. For most wildflower species, the effects of climate and location on growth and flowering are poorly defined. There are differences in flowering time between locations, presumably because of variations in temperature and day length between them. Some crops come into flower earlier, while others flower later. Research local temperature records to assess maximum and minimum temperatures through the year, as well as the frequency, severity and duration of frosts.

Labour

Flower growing is a labour-intensive business, especially at harvest time. Poor day-to-day management will lead to major crop disasters and severe financial problems.

Marketing a Perishable Product

Wildflowers can be easily damaged if there are delays in transport or if the refrigerated 'cool chain' is not maintained. (Carson et al. 2000, pp. 9) Good postharvest cooling and handling systems are essential – flowers and foliage are highly perishable products. Aim to minimise delays, both in the packing shed and during transport to market. This is particularly important for export product. (Carson et al. 2000, pp. 9). There are major flower agents located in and around the Brisbane, Sydney and Melbourne markets including exporters who target key customers in Japan, South-East Asia, Europe and North America

The beauty and novelty of many of Australia's native plants and foliage make them a valued component of floral arrangements in many parts of the world. A wide range of Australian native plants are now being grown commercially in countries other than Australia, particularly Israel, Colombia, Kenya, South Africa and Zimbabwe. The most popular plants grown in these countries are waxflower, kangaroo paw, banksia and eucalypt (for foliage). (Foster, M 2014, pp.155)

Wax Flowers in the QMDB Study Area

Geraldton Wax flower (*Chamelaucium uncinatum*) will grow and has been grown commercially in the QMDB Study Area at St George in the mid to late 1980's. There were waxflower plantations around Toowoomba and in the lighter soils of the Lockyer Valley, and further west on the sands around Chinchilla. Several of the Lockyer Valley plantations were grown under cover, in structures – to maximise bloom quality and quantity. The majority of these blooms were exported as they were a unique Australian product in limited supply.

The real value of Australia's exports of cut flowers, foliage and live plants and bulbs (exotic and native, here called 'flower' exports) grew strongly to nearly \$62 million in 2001–02, but has since declined to \$11 million in 2011–12. (Foster 2013, pp.155) The most important export markets for Australian wildflowers, foliage and native plants are Japan (36 per cent of the total value of exports in the three years to 2011–12), the Netherlands (30 per cent), the United States (16 per cent), Germany (6 per cent) and Canada (4 per cent). Western Australia accounted for 34 per cent of the total value of exports in this period, Queensland 28 per cent, Victoria 24 per cent, and New South Wales 13 per cent. (Foster 2013, pp.156)

This change in export value and demand is documented for Kangaroo paw and Waxflowers in a report by Max Foster, "Emerging animal and plant industries – their value to Australia", 2014, pp. 155) which documents native flower export volume and value from 2005-12.

Australian wildflower supply and value (2005-12)

	Year	2005-6	2006-7	2007-8	2008-9	2009-10	2010-11	2011-12
Kangaroo paws	Unit							
Volume stems	000	1203	707	725	781	405	462	432 b
Value	\$000	502	268	404	500	224	192	202 b
Unit value	\$ per stem	0.42	0.38	0.56	0.64	0.55	0.42	0.47
Waxflowers								
Volume stems	000	14995	12151	7333	9292	7829	7315	7678
Value	\$000	4291	3851	2805	3936	2630	2223	2193
Unit value	\$ per stem	0.29	0.31	0.38	0.42	0.34	0.30	0.29

b = six month data only (refer original document)

Above table adapted from Foster 2013, pp.155. Original data from ABARES, ABS (2013)

The above information highlights the ever changing supply and demand drivers associated with native wildflower production and marketing. Though many wildflowers are biophysically suited to the QMDB study area, price at market and alternate supply regions, both in Australia and overseas determine crop viability.

For more information on native wildflower species please refer to the Native Flower and Foliage Crop tab of the Crop Suitability Matrix

Australian Native Flowers - Industry “overview” May 2016.

A review of recent literature and reliable internet articles relating to Australian native flower production sales and trade seem to portray a mixed outlook. Many locations in Queensland where Geraldton Wax was once a thriving industry no longer produce this crop or any other native flowering crop for either the domestic or export market. Little documented information exists to map the decline of this industry and many former growers have “retired or moved on”

It appears that waxflower and other native foliage and flower production and exports have declined in volume and value since the peak of activity in the 1980’s. It seems (after reading the literature) that there are a number of reasons for this, fluctuations in the value of the Australian dollar, a reduction in wild harvest activities, increased production, export compliance costs, and increased labour costs have affected supply costs. Once “unique” and “unknown” Australian flora exported to the world as new and curious is now “known” and in some instances commonplace in overseas markets. Plant genetic material previously exported throughout the world has meant that many Australian plant species are now produced offshore (often in lower labour cost markets) so reducing the demand for local material.

New hybridised unique Australian native flower colour and flower forms are being developed and this along with selections that extend the traditional flower production window may well lead to an upturn in exports in future years. It must be remembered though that this material if licenced and supplied to overseas growers with lower labour cost inputs may well displace potential “future exports”.

Substitution (meeting demand for foliage and flowers) is also a major issue – with buyers often happy to accept alternate flower and foliage species in order to complete an order in a timely fashion for a known price.

Those interested in further updated information about the Australian native flower and foliage industry should **investigate the current literature further**.

Some suggested reading;

1. Flower Power – ABC landline 2015.
[ABC Landline](#)
2. Wildflowers Australia Web site
[Wildflowers Australia](#)
3. Australian Flower Industry Import and Export
[Australian Flower Industry Import and Export](#)

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Disclaimer: The candidate crop information presented in this QMDB study area report (Activity 1) are based on the analysis of the published biophysical needs of the crops (e.g. temperature, frost sensitivity, chill requirement, water quality, etc.) and current climate records for the QMDB study area. The candidate crops are deemed suited to the study area where the biophysical needs are met either year round or for portion of the year and will allow crop production.
