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**Rural Industries Research and  
Development Corporation**

# Improving profit for the flower grower

**A study using benchmarking**

**A report for the Rural Industries Research  
and Development Corporation**

by Gerry Parlevliet

August 2004

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*Improving profit for the flower grower- A study using benchmarking*

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# Foreword

The flower industry in Australia is considered very profitable by some and loss making by others. There is no clear understanding of the cost structure and profitability, nor are the tools available to growers to help them identify not only their own viability but also the comparative profitability between plant types and varieties grown.

This project aimed to identify improved practices in both production and financial management and to help enterprises become more profitable.

Benchmarking as a tool has been used in many industries to identify production and financial parameters.

This project worked with growers in Western Australia and some other states to identify their costs and production structures. It reviewed knowledge on benchmarking in other industries and developed a self help manual template for future use. It carried out an extensive program of feeding back to industry the concepts, benefits and results.

This project was funded from RIRDC Core Funds which are provided by the Australian Government.

This report, an addition to RIRDC's diverse range of over 1000 research publications, forms part of our Wildflowers and Native Plants R&D program, which aims "to improve the profitability, productivity and sustainability of the Australian wildflower and native plant industry".

Most of our publications are available for viewing, downloading or purchasing online through our website:

- downloads at [www.rirc.gov.au/fullreports/index.html](http://www.rirc.gov.au/fullreports/index.html)
- purchases at [www.rirc.gov.au/eshop](http://www.rirc.gov.au/eshop)

**Simon Hearn**

Managing Director

Rural Industries Research and Development Corporation

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The support from the Council of Flowerswest was fundamental to this project being initiated. The need for benchmarking was identified in their Research and Development Plans and they provided financial and physical support.

The growers who provided the information and became involved in working through their production and financial information, without them this project could not be completed. To retain confidentiality it is inappropriate to identify them here. But they know who they are – thank you.

The Department of Agriculture and its staff provided funding for salary and provided valuable support.

The staff of RIRDC and the members of the advisory committee for supporting this project and showing some necessary patience.

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# Executive Summary

The project was undertaken by the Department of Agriculture after the industry peak body in Western Australia had identified it as an important need for the industry. There has been very little work with growers of flowers to determine their profitability and efficiency.

A literature review of benchmarking showed there were no applicable previous examples. There were many examples in other horticultural crops that could be utilised as examples and provide the basis for the project methodology.

The risk management analysis in the planning stage of the project identified lack of availability of growers to participate in the study/learning process as the most likely risk to fully complete the project. In the final analysis this turned out to be the case despite many direct and indirect approaches.

The project worked with waxflower, protea and exotic growers in Western Australia and Queensland and achieved a useful indication of the factors that impact on profitability.

Each of the flower commodity areas had very profitable and loss making examples. There were indications for significant improvements that most growers can adopt to increase profitability. No one product or area stood out. However, good managers showed the highest probability of being profitable.

There are many outside factors that impact on prices growers receive. The ability to be well informed on the cost structure of the enterprise allowed timely management decisions.

The project has created the opportunity to present the benefits of benchmarking and associated tools to many growers and has followed up by reporting findings to conferences and workshops. Five hundred growers have attended presentations, another 600 have had regular updates prior to the end of this project. Growers will benefit from the publication of a manual in late 2003/2004.

The project makes a number of recommendations:

1. R and D to identify intensive labour activities in flower production
2. R and D work to reduce labour needs of the industry
3. Encourage R and D projects funded by RIRDC to embed importance of financial management as a message
4. Encourage conferences and workshops to include financial management as a core issue
5. In projects of this nature ensure growers have signed on and are committed to take part.

# 1. Introduction

## 1.1 Outcomes and Deliverables

To enable growers of native Australian plants to identify improved practices and processes both in production and financial management; become more profitable; and at the same time increase exports. Do this through development of a suitable manual, analysis procedure, pilot studies and communication program. An important output is development of the process to continue delivery of this concept after the project ends.

## 1.2 Background to Project

The Western Australian wildflower industry started as a bushpick industry. The need for better quality and the reduced access to crown reserves lead to commercial production of many species. This trend is increasing as more bush is locked into reserves and access is denied. The trend improves the survival of the biodiversity in the wild but increases the need to ensure growers can adapt to these changes by growing plant species which require a higher level of management.

The Western Australian wildflower industry has about 120-140 growers many of these are small (50 growing less than 1 hectare). There has been no work on identifying the viability, demographics or profitability of the industry. However, the WA industry has been responsible for the development of a significant export industry based on waxflowers, boronia, kangaroo paws, banksia and many foliage plants.

The growers are generally older and are effectively family enterprises. About 60% of growers are part-time. The returns are limited and the scope for adoption of new technology is also limited by financial constraints. For many this has been a lifestyle enterprise rather than a business. Subsequently records kept are limited and often not analysed. However, anecdotal comments indicate that labour costs are very high. Lack of clear guidelines for comparing production and performance means individuals do not know where to start to improve their returns

Many initial enterprises did not irrigate or fertilise, however, quality and yield requires irrigation and fertiliser – this has the potential to increase environmental degradation in waterways. A better understanding of and an improved efficient use of these will **reduce environmental impact**.

The Department of Agriculture has recognised the limited economic and production information is holding back the industry and individual growers. The industry Group, Flowerswest, commissioned a report in 2001 that clearly identified the need for benchmarking to be applied to the industry and to use it to improve profitability – as a result they have strongly endorsed this project and provided significant cash and in-kind support.

Benchmarking has been recognised as a useful tool to compare production, profitability and efficiency in many industries. The flower industry in WA raised benchmarking as a high priority. RIRDC has also identified benchmarking as a priority for the flower industry.

The project objective is for the Western Australian Native flower industry to become 25% more profitable and to be able to identify the need for and utilise best practice. The project will also aim to increase numbers of growers entering the industry or increasing the size of their enterprise. The target is for the WA native flower industry to double exports within 10 years.

The industry is provided with an opportunity to compare themselves to others in the industry via a benchmarking project and then identify new best practice to improve management.

The project will support industry priorities in first benchmarking the industry to improve profitability and second to identify sustainable production through improved best practice. Cost and profitability data is produced to enable comparisons to be drawn with other industries (i.e. Wine).

### **1.3 Benefits**

The industry has the potential to increase exports from its current \$20,000,000. The limiting factors are lack of new larger investors and the apparent lack of profitability in the industry. Industry has indicated that significant improvements can be made to improve profitability by better adoption of best practice – however, few growers are in a position to identify where they are going wrong relative to others. Poor adoption of efficient systems increases environmental risks. Employment is the major cost of the flower production enterprise. It provides employment for a large number of people. Lack of growth reduces the employment opportunities.

The Western Australian industry has identified the need for improved profitability and has identified the need to use benchmarking to identify areas of improvement (The Flowerwest R and D report released August 2001). Discussions with industry members have indicated a need for analysis of production and profitability to help improve the industry and attract new players.

A program of introducing best practice through this project will enable introduction of environmental improvement features such as irrigation efficiency, introduction of softer chemicals and integrated pest management (IPM). The improved profitability and expanded industry will create significant employment in rural areas.



## 2. Project design and methodology

### 2.1 Outline

The project was managed by the Principle Investigator based at the Department of Agriculture at South Perth and operated in all growing areas. A management group was established with industry to review and monitor progress, members came from the Flowerswest Committee and were also members of the departmental Research and Development Committee..

The main facets of the project included:

- Review benchmarking techniques used in other industries
- Develop format for recording and comparison
- Establish opportunities for participants to compare results, identify weakness/opportunities
- Establish mechanism for participants to identify best practice
- 2-3 meeting of groups of participants to review results and to explore best practice improvements.
- Evaluate effectiveness of project with industry partners
- Produce information packages (Manual for Benchmarking, Farmnotes and Bulletins, information to new investors).

### 2.2 Managing risk

When the project was first proposed several areas of high risk were identified:

- the primary risk is the reluctance of growers to take part in the project for fear their personal production and financial data is misused. The involvement of Flowerswest was seen to help overcome this as was the assurances that information would not be reproduced to identify individuals
- the Department and Flowerswest both see this project as a high priority and will ensure it meets its objectives. However, lack of time and interest on the part of growers may limit the quality of the final outputs. Staff changes in the Department may happen from time to time due to changes in Department needs but the project will be managed by the Department to achieve the agreed outcomes
- the project develops the tools for growers to benchmark their own enterprise against others. Lack of ready adoption by growers of these tools will slow the increase profitability of enterprises. Ongoing promotion and clear case studies will help encourage growers to adopt the new technique. The involvement of Flowerswest in the project will ensure grower relevance and adoption
- there are no negative environmental impacts of this project. However, the use of benchmarking could suggest the growers increase yield which could increase use of water, fertiliser or chemicals. These may increase risk of spills or leaching. The best practices to be used as examples will ensure growers are aware of these issues.

The main risk to the success of the project is the unwillingness of individual growers to compare their production information and the numbers of participants falling below acceptable levels. The involvement of Flowerswest and the tacit interest by Exporters to encourage their suppliers to participate were seen as ways to improve participation and potentially overcome this risk.

The Department had all the skills to undertake the work and the principal investigator is an experienced Senior Development officer who has worked in many areas in the Department, he has a broad range of experience particularly useful for this project. Additional staff were brought in to ensure adequate time was available to complete the project.

## **2.3 Literature review**

A literature review was designed to identify existing techniques used in these types of projects. Available library, GrowSearch and internet searches were made. The full results are documented in the Appendix.8.3

The literature review and associated investigations and discussions identified other people and agencies working in related fields. Planning included making links to existing researchers undertaking similar activity in other industries, to ensure direction is compatible and benefits are gained from their experience. Several groups were contacted to determine what they were planning. Most were only in very early planning projects and were also looking for guidance. The groups include the Flower Association of Queensland, Agriculture Victoria and a group in the Queensland Department of Primary Industry.

## **2.4 Recording data and carrying out analysis**

Benchmarking of individual growers, and benchmarking of performance of crops or varieties grown by individual growers were the primary levels of interest.

It was decided early that the level of information to be collected and recorded would have to be easy to extract from grower records. It was also clear that the major cost for growers would be labour and that eventually this area would require attention.

The information was collected by the principal investigator directly from growers; usually at their farm office. It was entered into a Microsoft ® Excel spreadsheet. The spreadsheet was based on a similar one developed by the Woolpro project in Western Australia. The data entry enable yield to be entered in many ways. The spreadsheet automatically calculated the parameters that would be used for comparison. The details are included in Appendix 8.2 which contains the Benchmarking Manual.

The results were provided back to the grower for their verification and information.

## **2.5 Participant recruitment**

Recruiting participants was always seen as the highest risk area. Past experience of the principal investigator suggested the possibility of lack of interest by growers. The involvement of Flowerswest and the support of exporters was seen as going some way to break down resistance.

Initial activity by exporters and individual members of the Flowerswest council created opportunities for promotion of the project and its benefits. However, the outcomes were not great. Changes in the Flowerswest Council and a major flower industry debate on a Fee-for-Service reduced the interest in the project and the benefits of having Flowerswest involved directly.

Presentations at agency generated workshops, conferences and seminars were used to promote the benefits of benchmarking and providing the opportunity to participate.

One specific group of growers initially very supportive withdrew their involvement primarily based on concerns about what would happen to their information and the concern that it would be used to bring in competition. The offer of delayed publication did not change this attitude.

Many growers directly approached did not have information readily available and did not choose to work with the project to extract it. A number of growers indicated a lack of interest as they were planning on leaving the industry.

Other growers approached indicated some interest but for various reasons including fire, lack of time and the need to consult with company owners no data were collected.

The low numbers of participants resulted in the project requiring some reshaping.

## **2.6 Discussion group development**

Originally growers associated with different commodity production were to operate as the participants and discussion groups. Exotic, protea, waxflower and Verticordia were identified and Flowerwest councillors created the opportunity for project promotion. However, the lack of response resulted in the discussion groups being unworkable.

The project was building on the lessons from Topcrop and the groups were to be encouraged to appoint a data manager to collect all data on behalf of the project. A group convenor was to be encouraged to provide contact with the project officer and to plan activities. The group was to be encouraged to nominate a specialist to provide information and help the group work through its issues. The groups were to meet as needed to work through needs, data, draft forms and learn about new innovations and best practice. This did not eventuate.

As a result, a greater emphasis on the delivery of information on project outcomes and the benefits of recording and analysing was developed. Several conference papers have been presented in Albany, Perth and Melbourne – additional ones are arranged in South Australia (Tailem Bend) and Queensland (Gatton). The latter two are being delivered at the same time as another RIRDC project delivers extension activity on nutrition.

The one to one data collection sessions in most cases resulted in long discussions about options and possibilities. Although the outcomes of discussions were not evaluated the indication was that new ideas were being followed up.

## **2.7 Information flow**

The project had a strong extension component. The aim was to make growers aware of the benefits of keeping good records and analysing these to determine their performance, then to gain experience from other industries and growers to continually improve in a self learning cycle.

Available channels that directly reached growers were used. These included the Floriculture Newsletter, Flowerswest Magazine, seminars, workshops and conferences. The details are in chapter 5 on Communication.

A benchmarking self help manual is being prepared and awaits the final analysis of data before publication. This will be available from the Department of Agriculture and will also be published on its website at [www.agric.wa.gov.au](http://www.agric.wa.gov.au).

The experience from the project and the data have been used to develop sections on economics in a new “Managing Wax for improved quality and profit” manual.

## 3. Results and discussion

Ten growers were interviewed about 50 crops or varieties. This was a disappointing number of growers and a low number of crops/varieties. The quality of the information in some cases was also questionable as some data were guesstimated. The growers were involved in Australian native plants, South African protea species and exotics.

However, there is sufficient information that can be derived to provide a very useful outcome.

Growers ranged in size of operation, type of crop and level of sophistication. Data were derived from two years 2002/2003 and 2003/2004 with some resulting limited impact on prices.

Information was provided on planting density, yields, prices, cost of production, labour costs and overheads. No information was sought for capital development costs, interest payments or tax payments.

The results were designed to allow the generation of comparable benchmark parameters. It is these parameters that are used to compare crops and varieties. Large currency numbers are rounded off to the nearest dollar low numbers to 2 decimal places.

To maintain the confidentiality promised to the growers, they are not identified, where the number of growers of anyone crop is small then those crops are not specifically identified. Some other crops are grouped into large numbers.

The data collected were originally designed to develop the parameters which in turn would allow growers to discuss and analyse their performance with the aim of improving their performance.

### 3.1 Literature review

The literature review includes the information that will enable readers to understand what benchmarking is about. Many of the horticulture industry benchmarking reports compared the whole industry on the world market rather than individual growers. However, useful information and direction and content was obtained.

A short report has been produced by RIRDC SR N0.74 that looks at the benchmarking and related studies carried out or being undertaken in Rural Australia. This lists many programs that have used benchmarking or are using benchmarking. There are no flower related benchmarking studies in Australia listed. Subsequent literature searches by GrowSearch and the Library of the Department of Agriculture also found no direct reference to benchmarking in floriculture.

Some work has been carried out in the nursery industry suitable for wholesale and retail operations. Paul Watkins at the 2002 6<sup>th</sup> Australian Wildflower conference discussed the benchmarking of Florists.

There have, in recent years, been a number of benchmarking projects carried out in horticulture and other agricultural enterprises which will provide useful information for developing this project. They will be discussed later in this document.

## What is benchmarking

Benchmarking has been used by many industries and companies to compare themselves against others and their competitors. Benchmarking has been defined and redefined but is suggested by the authors of the RIRDC review (Worsley and Gardener, 1996 RIRDC SR NO. 74) as “a process of effective decision-making that results in continuous improvement of management ‘practice’ and operating ‘process’ within the business”.

Standards Australia in its handbook “Benchmarking Explained – A guide for undertaking and implementing benchmarking” draws on many other references to suggest benchmarking is:

“The continuous process of measuring our products, services and practices against either our toughest competitor or those companies renowned as leaders”

and

“Benchmarking is the search for industry best practices that lead to superior performance”

and

“Benchmarking is comparing your organisation against another organisation on some aspect of performance-process, product or service, in which the other organisation excels- with the objective of finding ways you can improve your performance”.

Standards Australia 1996 refer to the work of Spendolini who emphasises that benchmarking is a continuous learning process and is not a one off event nor is it just copying others.

They go on to suggest that benchmarking “ is a process of investigation and learning to enable your organisation to compare and perhaps, improve activities.”

These examples of definitions for benchmarking are generally all high order and refer to larger companies. The flower grower may feel a little intimidated but this tool/process is equally applicable to any sized flower grower.

*Benchmarking is comparing the profitability/efficiency of your flower production against the performance of other growers and thereby learning how to improve your performance. This can be on a farm, crop, greenhouse or variety basis.*

## What type of benchmarking?

Standard Australia 1996 refer to a number of different types of benchmarking these include “internal”, “external -competitor, functional, industry, customer, supplier”, “best practice” and “generic”

Their discussion revolves mainly about companies but the differentiation has some benefit.

Internal benchmarking would be the comparison between two farms in the same farming company, or between varieties of flowers on the same farm, it will be useful but will only make large differences when there are significant performance differences between the activities. The advantages are that business retains the data and it is what you want to collect. The disadvantage is that the business does not gain from other business innovation.

External benchmarking is the usual preferred way to benchmark.

This may be comparing with **competitive** groups i.e. between growers but on issues where they are comfortable to provide data. For example, where they can compare irrigation, fertiliser efficiency and production but not marketing

Benchmarking can also be done on a **functional** basis where businesses may be in different industries but they want to compare areas that are common, for example, they may compare the efficiency of labour use in the flower industry with labour use in the fishing industry.

**Industry** benchmarking is regularly done to determine the state of the industry, either on cost of production, production, yield etc., these are often used for strategic rather than individual use.

**Customer benchmarking** was highlighted- “It is surprising how many organisations do not know what their customers really want. There is frequently a tendency to rely on the opinion that ‘we know what the customer wants, so we don’t really have to carry out any surveys.’”

Similarly it is possible to **benchmark suppliers** of inputs into the industry or enterprise on performance.

**Best practice benchmarking** is considered more difficult but is often referred to in agricultural industries as a way to improve production. Best practice is a “moving target” and continual improvement is important.

**Generic benchmarking** relates to comparing with related industry. In the flower industry this could be watching the European retailers and their interest in improved environmental management of their suppliers as this trend will impact on our exports and will also filter to our retailers.

## How to benchmark

Again Standards Australia 1996 suggests, and quote King, Moran and Niall, that the steps are:

- Analyse process or operation and decide what is to benchmarked
- Define and measure selected process and formulate the benchmarking plan
- Select benchmark partners and agree on parameters
- Carry out benchmarking
- Analyse results and apply to your process
- Recalibrate operations and measure results and effects.

They also suggest that anyone thinking about doing benchmarking needs to:

- Know what is to be benchmarked
- What is to be measured?
- How are results to be analysed and used?

That suggests that the operation (in this case the flower enterprise) needs to be very well understood in all its components. With some understanding of which areas are likely to benefit from improvement.

In the case of flowers it may not be useful to benchmark the number of cultivations prior to planting waxflower when it only differs by one or two operations and only occurs every 10 years. However, the yield and labour used in the enterprise is a major determinant of profitability and impacts on the enterprise each day.

The partners are clearly the growers and the data analysis organisation.

The results are analysed to provide a useful and confidential comparison and growers are likely to apply the results to their operation.

## **Reviewing some horticultural benchmarking reports**

### ***BankWest benchmarks***

The Western Australian based BankWest has carried out benchmarking of broad acre farms for a number of years. In 2001 they compared 480 farm businesses; this is considered the largest of its kind in Australia. They use their network of bank managers in regional locations to access growers. They use the cash flow actuals for the year, the statement of assets and liabilities, and farm details and farm production details. Inputs include area of farm, area of production, rainfall, labour, fertiliser use, yield and quality.

The results are calculated in the Bankwest central office using Microsoft® Access and Microsoft® Excel. Participants receive an individual summary of their benchmarked data and compared to the district. Publication of the information is done on a regional basis both on a whole farm and crop analysis. Enterprises are clustered into top 25%, other 75%, lower 25% and average. The data compared include average farm size, area cropped, assets (\$ per hectare), debt (\$ per hectare), equity %, return to capital, income (\$ per hectare), costs (\$ per hectare), profits (\$ per hectare), yield per hectare.

This scheme relies on the minimal input by the grower over and above information normally prepared for the bank.

This document indicates useful ways to protect privacy and confidentiality of the participants.

### ***Australia Horticultural Corporation benchmark reports***

In 1995 Australia Horticultural Corporation produced a series of reports which benchmarked five industries. Industries studied were oranges, table grapes, macadamia, broccoli and carrots.

All five reports are similar in their structure and content. They are industry-based comparisons between industries in different countries relative to the Australian industry. They do competitive analysis in the market, they look at competitive positioning of different components of the industry such as production costs, as well as industry structure and relationships. The reports have a heavy emphasis on the market requirement and market perceptions. They identify which areas have best practice for the different components of the industry.

The report concludes with a series of benchmarks for each section they studied, for example marketing “the measure is a percentage of non USA consumed macadamias marketed by industry participants”. The benchmarking is Australia with 64 per cent.

For processing “the measure is the direct processing costs which is influenced by the actual recovery compared to the laboratory results”. The benchmark is the best in each country at AUD\$0.54 per kg kernel.

The reports are useful for those industries studied to identify some of their weakness and provides suggestions as to where to look for the better practices.

For example, the Broccoli study looks closely at the labour costs and cool chain management and refers to the Californian model as being a benchmark.

The reports are not directly beneficial to this project as we are targeting farm production and profitability. It goes without saying that it would be useful to do a study of all the major flower growing regions in the world on the same basis as the reports by the AHC.

***Macman: recording and comparative analysis software for macadamia. Report to HRDC, MC97002***

Mulo, Shane, 2000 reports on the discussions and development of the products produced by this project on macadamia to allow growers to receive information and produce graphics and tables of outputs. It is based on a database system which can be linked with spreadsheets. It allows recording of farm - block - planting descriptions, employees and contacts, detailed pest information, chemical product inventories, jobs, post-harvest handling, factory results, variable costs, leaf and soil analysis, pest monitoring, water quality, weather records, and cropped phenology. The project also produced wall charts and farm diaries.

Time constraints resulted in small proportions of growers using the database, however, many use the diary. The project provided extensive training support.

The software is obviously very comprehensive and exceeds the needs of the flower benchmarking project. However, the value of having hard copy templates or diaries is obvious. The report reinforces the need for any recording mechanism to be simple.

***Financial performance benchmarking for the retail and wholesale nurseries throughout Australia***

This report by Ian Brown for HRDC showed the project carried out a number of activities within the nursery industry including: distinct benchmarking comparisons of financial returns and costs for 1997, 1998 and 1999; a series of training activities designed to show nursery operators how to apply the figures within the business and training of the nursery industry development officers. It produced several papers, and spreadsheets to perform the calculations and make comparisons for individual operators.

Software provided to retail and wholesale nurseries allows the individual operators to enter their own data and compared that to in-built averages for the industry.

This report is only a summary and outline of the process and contains very little detail.

Examination of the software available on the Web indicated useful, easy-to-use products. The content of the software indicated this was produced after the event and after the field benchmarking.

The software could be a model for one that can be used in the flower industry, however, this will need to be developed in another project.

***Citrus - Practices for profit – Kit, Citrus industry benchmarking 2000 grower kit***

This is an excellent set of products. The Citrus - Practices for profit- kit has a strong component of adult learning, introduces the reader to the principles behind best practice and then goes on to outline what could be considered best practice. It uses results from previous benchmarking to illustrate the financial results of introducing best practice.

The package compared numbers for low, medium and high income systems. They use cluster analysis to compare older and younger properties and also larger and smaller properties. The best practice component includes checklists of most of the practices carried out on the citrus property with suggestions on how they can be filled out. Completing the checklists will allow the grower to analyse their property management.

Many of these principles are already included in the Draft Environmental Best Management Guidelines that the WA Flower Industry is considering.



They introduce the concept of linking practices to profit and also introduce the business planning cycle. They show where benchmarking and analysis of the data fit in. Checklists of the typically best practices are included. These have sufficient internal documentation to allow easy completion.

The “Citrus industry benchmarking 2000 grower kit” contains sections on “BizCheck for citrus” and “Cost of Production” and gives descriptions of the terminology used. It covers many different components of the farm enterprise decision tree including the family goals and lifestyle. BizCheck indicators provided things like number of households on the property, tonnes citrus sold, number of days of holiday the family takes and farm operating surplus,

The kit also talks about the concept behind cost of production and provides a flowchart of the cost structure. There is a section on the cost of production calculations and how they need to apportion operating costs and how they handle labour. They compare normalised tree (tree equivalents) yields where they talk about mature trees and young trees are only considered at 50% of a mature tree. They also indicate they use standard interest rates to enable comparisons to be made on financial results.

There are series of Cost of Production input sheets which detail factors such as areas of irrigation, area of trees planted, number of trees, how much sold and proportions to juicing and the age structure of trees. They have separate inputs sheets for different varieties (Valencia and Navel reflecting the marketing differences). The sheets have categories for the normal operating costs but labour costs are broken down to picking, casual and permanent. It also deals with overheads and apportions percentages to different crops.

“Citrus Practices for profit Kit” and the “BizCheck cost of production Kit” provided good guides on dealing with the flower industry. Unfortunately the flower industry is more complicated because of the number of varieties and crops grown.

### ***WoolPro – Benchmarking the sheep and wool enterprise.***

This is a published document and is a hard copy version of a spreadsheet. It concentrates on benchmarking the production and financial profitability of the livestock operation but is linked to the whole of farm overhead costs.

The spreadsheet provides an insight into the construction of such a template.

### ***Benchmarking florist shops***

Paul Watkins at the sixth Australian wildflower conference in 2002 spoke about a project he had been involved in where they benchmarked florist shops between 1997 and 1999.

He provided a checklist for higher profits that showed the steps involved in this particular benchmarking activity. In comparison tables the florist are grouped on business income, for example group one was less than \$120,000, group three was over \$200,000 and also had a category where little employed external labour was used..

The table used income, gross costs of flowers, costs such as advertising, showrooms, telephone and labour for comparison purposes. It related income, profit and overheads on amount per dollar of wages. Comparisons between these tables and the florist own figures illustrate where his costs are disproportionate to that of its competitors. Overcoming the differences leads to extra profits.

As labour is also a major cost in the production and harvesting of flowers using this type of comparison could lead to useful improvements.

### ***Other Reports with useful information for flower benchmarking***

There are a number of good publications produced in various states around Australia that cover cost of production and gross margins for flowers. These range from development budgets to simple gross margin tables. A number of these also contain large volumes of information useful for best practice production. Some examples are “Growing wildflowers for profit – Cass, A *et al.*”, “Wildflowers the beginning- Slater and Faragher”, “Rice flower -production guidelines for growers – Beal, P *et al.*” and “Should I grow wildflowers - Beal, P. *et al.*”

A number of other articles have specific crop gross margins and these are included in the references.

### **Summary**

There have been no projects identified carrying out benchmarking on flowers. Extensive literature searches have failed to identify any.

There are some good examples of horticultural industry benchmarking on an industry basis. These are useful for inter industry comparison and provide an incentive for the flower industry to follow suit.

Several very useful benchmarking and best practice projects for the citrus industry and the Wool Industry as well as the format used by the Bankwest benchmarking survey are helpful. They help to design the process for this project, the input formats, the data to be compared, the spreadsheet construction, the analysis and presentation formats as well as the adult learning required to adopt best practice in the Flower Industry to improve profits and production.

## **3.2 Benchmarking Australian flower producers**

The information in this study was gathered as a way of enabling growers to compare their performance against others with the aim to mutually improve on an on-going basis. Inherently that means these results should not be used as absolute indications of the profitability or otherwise of the industry.

The results are best used to enable growers to compare their own data to these tables and analyse the relative performance. If performance is not up to the level of the highest performers that they have a lot of improvement ahead of them. If they match or better the results tabulated here than they should not be too comfortable as the participants all would agree that they can improve beyond the level they are operating.

### **Crop income and costs comparisons**

#### ***Comparisons on a hectare basis***

Traditionally crop profitability has been calculated on a hectare basis with gross margins calculated to enable comparison between enterprises and crops. Sufficient information was collected to enable hectare calculations to be made. The input spreadsheet allowed the data for planting to be entered as plant spacing, metres of bed, hectares with all being recalculated to hectares. In most cases the area of any one crop or variety was a fraction of a hectare. This would have increased the margin of error in any derived gross margins.

Table 1 – Per hectare comparison (range of income and costs)

<b>Crop</b>	<b>Income per hectare (\$)</b>	<b>Cost per Hectare (\$)</b>	<b>Labour Cost per hectare (\$)</b>	<b>Gross margin per hectare (\$)</b>
Exotics	N/A	N/A	N/A	N/A
Leucadendron	\$10,900-\$66,895	\$7,930-\$68,198	\$6,449-\$36,651	(\$16,548)-\$23,312
Foliage	\$1,260-\$27,778	\$1,564-\$25,838	\$1,158-\$19,047	(\$3,404)-\$9,843
Waxflower	\$8,974-\$106,671	\$6,625-\$44,995	\$4,792-\$32,500	(\$13,866)-\$78,355
Other natives	\$1,636-\$213,647	\$3,427-\$190,171	\$2,083-\$84,902	(\$21,850)-\$39,510
Overall	\$1,260-\$213,647	\$1,564-\$190,171	\$1,158-\$84,902	(\$21,850)-\$78,355

Note: Exotic cost data on hectare basis limited to one grower therefore not provided. (\$) is minus value

Table 1 indicates that there is a vast range of incomes, costs and gross margins across commodity groups. Even allowing for some inaccuracies due to inadequate data, it does illustrate clearly that some growers get it right some of the time with high yields, prices and managed costs. But equally there are some who may have discovered that their effort could be redirected to more profitable lines or to look for ways to reduce costs.

The fact that there were negative gross margins in all commodities suggests that inadequate records and record analysis is reducing grower profitability. But at the same time seasonal conditions, lack of markets, immaturity of the crop may all have played a part in generating the negative returns. This reinforces the need to analyse closely the data on an individual basis.

Table 2 shows the comparative average figures. Clearly the current dominant crops of Leucadendron and waxflower are providing a return with waxflower being indicatively better. Some foliages are providing good returns for low labour inputs

Table 2 – Per hectare comparison (average of income and costs)

<b>Crop</b>	<b>Income per hectare (\$)</b>	<b>Cost per Hectare (\$)</b>	<b>Labour Cost per hectare (\$)</b>	<b>Gross margin per hectare (\$)</b>
Exotics	N/A	N/A	N/A	N/A
Leucadendron	\$30,751	\$27,709	\$16,031	\$3,042
Foliage	\$13,084	\$8,684	\$6,117	\$4,400
Waxflower	\$43,351	\$25,835	\$19,305	\$17,516
Other natives	\$19,952	\$19,270	\$12,922	\$1,059

Note: Exotic cost data on hectare basis limited to one grower therefore not provided. The averages are individually calculated and may not necessarily equate across the columns

On the surface and probably as a consequence of the larger number of specialists producing waxflower and particularly as a consequence of some very good reported returns waxflower comes out in front. Some crops such as some exotics, better quality Banksia and protea were not worked with and may preform equally well or better.

Focusing in on waxflower to look more critically at the variations we need to refer to Table 3. This shows the gross figures on a hectare basis for individual varieties as reported by growers. Be mindful

that the numbers reflect more often than not the management not the capacity of the variety. The exception may be some labour advantages and some premiums paid for specific varieties. There will also be a variation in age of crop with some new plantings and some very old ones.

Table 3 Returns for waxflower varieties (\$ per hectare)

Waxflower variety	Income per hectare (\$)	Total cost per hectare (\$)	Labour cost per hectare (\$)	Gross margin per hectare (\$)	Percent labour of total cost %	Percent gross margin of income	
Wax1	\$30,868	\$29,619	\$18,730	\$1,249	63.2	4.1	
Wax1	\$8,975	\$6,625	\$4,792	\$2,350	72.3	26.2	
CWA	\$11,171	\$10,437	\$7,407	\$733	71.0	6.6	
Dancing Queen	\$88,867	\$23,064	\$17,333	\$65,802	75.2	74.1	
Denmark Pearl	\$45,595	\$34,805	\$26,965	\$10,790	77.5	23.7	
Double Pink	\$25,157	\$29,030	\$22,496	(\$3,873)	77.5	(15.4)	
Wax 2	\$30,616	\$16,747	\$11,262	\$13,869	67.2	45.3	
Ivory Pearl	\$106,671	\$28,316	\$23,770	\$78,355	84.0	73.5	
Jasper	\$12,896	\$26,762	\$14,997	(\$13,866)	56.0	(107.5)	New planting
Jurien Brook	\$17,025	\$26,105	\$20,225	(\$9,079)	77.5	(53.3)	
Painted Lady	\$23,382	\$36,878	\$29,994	(\$13,496)	81.3	(57.7)	
Wax3	\$80,427	\$40,346	\$32,500	\$40,081	80.5	49.8	
Sweet Georgia	\$26,822	\$29,891	\$22,470	(\$3,069)	75.2	(11.4)	
White Mullering	\$98,447	\$23,064	\$17,333	\$75,382	75.2	76.6	
<b>Average</b>	<b>\$43,351</b>	<b>\$25,835</b>	<b>\$19,305</b>	<b>\$17,516</b>	<b>73.8</b>	<b>9.6</b>	

Several varieties have been listed anonymously to avoid identifying grower. ( ) is minus i.e. loss.

Very high returns are possible from waxflower and yield is a major contributor. Many growers use low or inappropriate levels of nutrients; better nutrient management could increase production. Prices do vary between buyers and between varieties and time of availability. Labour costs are a very serious cost in flower production with an average of 74% of total cost although there is variation (56-84%). This would indicate that there are some differences in efficiency between growers and varieties. There is scope for most growers to gain cost savings in this area. Non labour operating costs are not as high and may reflect the way growers sell product, amount of overheads included (some growers have large bills, for consultants, communication and fuel, than others.)

Although the data for other commodities is not included the same trend is apparent, high labour costs and hugely variable returns. Some exotic crops have higher income with equally higher costs.

### **Comparisons on a stem or plant basis**

Prices for flowers are most often obtained as \$ per stem or bunch of a fixed stem number, Although export crops such as waxflower are becoming more commonly sold as a bunch of a specific weight. Stem count and associated data has a number of opportunities for making production and economic comparisons across crop and variety.

Table 4.1-4.5 compare a range of crops and varieties on a stem or plant basis. There are a great number of ways to interpret these tables. Reading too much into any set of data, especially one that is already qualified with regard to accuracy, can be very misleading. Cost of production of a capital nature is not looked at but can make a very big difference to expected returns, for example waxflowers are planted extensively in the field with no cover but liliums are most often grown under cover or in tunnels. Look at the messages in the data and then only make financial decisions on detailed analysis of the industry and advice from your accountant.

Flower crops can be planted in beds, dense rows or as individual trees or shrubs depending on their eventual size and whether they are perennial or annual. Plant density will vary between types significantly but within types, less so. For example liliums may be at 200,000 per hectare but waxflower at 2,000. However, waxflower may produce 100 stems per plant whereas liliums produce one. The result may be the same number of stems per hectare.

Comparisons of exotics such as roses is often done based on the number of stems per square metre but for waxflower it is more commonly bunches or stems per plant. The table has production calculated on stems per square metre basis for all crops with a corresponding gross margin. It is clear both from Table 5 which compares the categories and Table 4 that the exotics, particularly those such as roses, get production levels of about 200 per square metre, it is interesting to see that waxflower can also reach these levels under good conditions even though this is less often obtained. The corresponding gross margin figures follow similar trends. The common feature between high intensity production of exotics and the better waxflower results is the level of management and business decisions. The difference is the rose producer may harvest over 12 months whereas the waxflower grower takes of the crop in a matter of weeks for any one variety.

Looking a little more closely at the production levels of individual crops it becomes apparent that although 200 rose stems is high compared to waxflower it is not at optimum levels suggested by rose specialists who look for 270 per square metre. This suggests that there is significant room for improvements.

### *Labour*

Differences of 700% in labour usage per stem must mean room to improve for all growers. Only bulk labour usage data were collated during activities with growers. The very high proportion of labour as total cost reported earlier and the wide variation between growers and crops suggest the ability to focus on that component of cost and reduce it. Information on labour efficiency is presented in Tables 4 and 5 as income earned per \$ spent on labour and as the cost of labour per stem collected. Some crops are inherently easier to harvest and process, others take more time to maintain quality. But it is interesting to see that cost of labour per stem for the extensively grown crops ranges from \$0.04 – \$0.48 and the exotics from \$0.21 - \$1.49. Work-a-like crops such as roses and carnations were not far away from the cost of picking some leucadendrons and waxflower. But more relevant is the difference in any one commodity – here the wide variation in efficiency of working with and picking the crop ranges by a staggering 700%. Even if we are conservative and only use the average of \$0.16 compared to the highly efficient \$0.05 this still represents a 300% difference. Similar differences apply to the other flower commodity areas.

Another way to look at labour is to determine how many dollars of income is produced for every dollar spent on labour. Again we get that 700% difference within the wax crop. But it becomes more obvious when for every dollar growers spend or charge to labour they only receive less than a dollar. Constant monitoring should pick this up early, growers then need to decide if picking is worthwhile.

It is interesting that the returns on labour are similar for exotics and waxflower as well as other native plants. But again it is those speciality crops and crops managed in more efficient ways (including right scale) that have returns over \$4.00 for every dollar spent on labour.

### *Income*

Income per stem equates to price. There is some variation based on location, variety, crop type, time of availability, quality and what is paid by the buyer (i.e. freight, cartons etc).

Prices for waxflower range from \$0.13-\$0.40 per stem, other natives \$0.13-\$0.61, leucadendrons 0.15-0.50 and exotics \$0.45-\$3.95. The high priced exotic stems are liliiums. It is possible to get good returns from flowers with low prices if the saleable production is high and costs are kept to a minimum.

The target is to have high yields of saleable quality stems with curtailed costs of harvesting.

### *Non labour costs*

Overheads are the general costs of running the business, phone, maintenance, repairs, insurance, consultancies and other items of that nature. The level of overheads is very much dependant on the scale of operation, the management style and the lifestyle of the operator. Highly efficient operations may have overheads of \$0.01 per stem. But others may be as high as \$0.11 for specific crops. The exotic growers generally have much higher overhead levels per unit production - \$0.10-\$0.85.

When overheads are spread over a large production base the rates are low, conversely if the fixed overheads are only leading to very low levels of production (small areas, low yield) then the overhead per unit is very high.

In many cases it is the difference between making a profit or losing money.

The bottom line is the ability to constrain the total costs of production, harvest and overheads. The high priced liliium has high cost associated with it reducing the gross margin per stem to the same order of magnitude as the extensively grown flowers. Again in waxflower there is no way a profit can be made if the cost of producing a stem is \$0.46 and prices never get above \$0.40. But there is good profit if you can achieve a price of \$0.40 and can keep your costs to less than \$0.10. And it is achievable to get cost down to that level; some growers are achieving this.

Similarly the same situations exist in other flower crops.

Controlling costs is a major way of improving profit.

**Table 4.1 Exotics**

Variety	Plants per ha	Plants per metre	Income per plant	Income per Stem	Income per \$ labour	Total Cost per stem	Labour \$ per stem	Overhead per stem	Gross margin per stem	Stems per metre <sup>2</sup>	Gross margin per metre <sup>2</sup>
Calla	133,333	13	\$1.93	\$1.10	\$2.61	\$1.03	\$0.42	\$0.19	\$0.07	23.3	\$1.74
Lillium	200,000	20	\$3.90	\$3.95	\$2.66	\$3.59	\$1.49	\$0.85	\$0.36	19.8	\$7.19
Carnations Sims		36	\$2.75	\$0.46	\$2.23	\$0.44	\$0.21	\$0.11	\$0.02	213.1	\$4.38
Carnations Sprays		36	\$1.79	\$0.45	\$2.03	\$0.49	\$0.22	\$0.10	-\$0.04	146.3	-\$6.22
Rose large colour		10	\$14.59	\$0.73	\$2.05	\$0.61	\$0.36	\$0.18	\$0.12	199.9	\$24.88
Rose large Red		10	\$16.45	\$0.83	\$2.31	\$0.61	\$0.36	\$0.18	\$0.22	198.2	\$43.40
Roses small colour		10	\$10.61	\$0.53	\$1.49	\$0.61	\$0.36	\$0.18	-\$0.08	200.1	-\$15.06
Roses small Red		10	\$12.62	\$0.63	\$1.77	\$0.60	\$0.36	\$0.18	\$0.03	200.3	\$6.03
<b>Average</b>	<b>166,667</b>	<b>7</b>	<b>8.08</b>	<b>1.09</b>	<b>2.14</b>	<b>1.00</b>	<b>0.47</b>	<b>0.25</b>	<b>0.09</b>	<b>150.12</b>	<b>8.29</b>
<b>Min</b>	<b>133,333</b>	<b>3</b>	<b>1.79</b>	<b>0.45</b>	<b>1.49</b>	<b>0.44</b>	<b>0.21</b>	<b>0.10</b>	<b>-0.08</b>	<b>19.75</b>	<b>-15.06</b>
<b>Max</b>	<b>200,000</b>	<b>0</b>	<b>16.45</b>	<b>3.95</b>	<b>2.66</b>	<b>3.59</b>	<b>1.49</b>	<b>0.85</b>	<b>0.36</b>	<b>213.08</b>	<b>43.40</b>

**Table 4.2 Protea**

Variety	Plants per ha	Plants per metre	Income per plant	Income per Stem	Income per \$ labour	Total Cost per stem	Labour \$ per stem	Overhead per stem	Gross margin per stem	Stems per metre <sup>2</sup>	Gross margin per metre <sup>2</sup>
Leucadendron galpinii	1,667	0.50	\$6.54	\$0.50	\$1.69	\$0.36	\$0.30	\$0.05	\$0.14	6.5	\$0.89
Leucadendron	5,455	1.22	\$12.26	\$0.29	\$4.61	\$0.24	\$0.06	\$0.03	\$0.05	51.0	\$2.43
Leucadendron galpinii	1,667	0.50	\$30.99	\$0.24	\$1.41	\$0.32	\$0.17		-\$0.08	64.6	-\$4.96
Leucadendron Jubilee Crown	1,667	0.50	\$25.55	\$0.15	\$4.00	\$0.07	\$0.04	\$0.00	\$0.08	85.2	\$6.99
Leucadendron Silvan	1,667	0.50	\$10.73	\$0.33	\$1.72	\$0.28	\$0.19		\$0.04	16.3	\$0.73
<b>Average</b>	<b>2,424</b>	<b>0.64</b>	<b>17.21</b>	<b>0.30</b>	<b>2.69</b>	<b>0.25</b>	<b>0.15</b>	<b>0.03</b>	<b>0.05</b>	<b>44.72</b>	<b>1.22</b>
<b>Min</b>	<b>1,667</b>	<b>0.50</b>	<b>6.54</b>	<b>0.15</b>	<b>1.41</b>	<b>0.07</b>	<b>0.04</b>	<b>0.00</b>	<b>-0.08</b>	<b>6.54</b>	<b>-4.96</b>

<b>Max</b>	<b>5,455</b>	<b>1.22</b>	<b>30.99</b>	<b>0.50</b>	<b>4.61</b>	<b>0.36</b>	<b>0.30</b>	<b>0.05</b>	<b>0.14</b>	<b>85.15</b>	<b>6.99</b>
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**Table 4.3 Foliage**

Variety	Plants per ha	Plants per metre	Income per plant	Income per Stem	Income per \$ labour	Total Cost per stem	Labour \$ per stem	Overhead per stem	Gross margin per stem	Stems per metre <sup>2</sup>	Gross margin per metre <sup>2</sup>
Foliage1	2,222	0.67	\$12.50	\$0.36	\$1.46	\$0.33	\$0.24		\$0.02	23.3	\$0.58
Eucalptus	488	0.05	\$2.58	\$0.20	\$0.48	\$0.74	\$0.41		-\$0.54	0.6	-\$0.34
Foliage2	1,667	1.00	\$3.75	\$0.47	\$7.52	\$0.10	\$0.06		\$0.37	8.0	\$2.95
Foliage2	1,667	0.50	\$6.47	\$0.42	\$9.31	\$0.06	\$0.05	\$0.01	\$0.36	7.7	\$2.77
<b>Average</b>	<b>1,511</b>	<b>0.55</b>	<b>6.33</b>	<b>0.36</b>	<b>4.69</b>	<b>0.31</b>	<b>0.19</b>	<b>0.01</b>	<b>0.05</b>	<b>9.91</b>	<b>1.49</b>
<b>Min</b>	<b>488</b>	<b>0.05</b>	<b>2.58</b>	<b>0.20</b>	<b>0.48</b>	<b>0.06</b>	<b>0.05</b>	<b>0.01</b>	<b>-0.54</b>	<b>0.63</b>	<b>-0.34</b>
<b>Max</b>	<b>2,222</b>	<b>1.00</b>	<b>12.50</b>	<b>0.47</b>	<b>9.31</b>	<b>0.74</b>	<b>0.41</b>	<b>0.01</b>	<b>0.37</b>	<b>23.33</b>	<b>2.95</b>

**Table 4.4 Other natives**

Variety	Plants per ha	Plants per metre	Income per plant	Income per Stem	Income per \$ labour	Total Cost per stem	Labour \$ per stem	Overhead per stem	Gross margin per stem	Stems per metre <sup>2</sup>	Gross margin per metre <sup>2</sup>
Banksia hookeriana	1,167	0.12	\$5.21	\$0.38	\$2.14	\$0.21	\$0.18	\$0.03	\$0.17	1.6	\$0.27
Banksia hookeriana	1,250	0.50	\$8.29	\$0.39	\$2.15	\$0.23	\$0.18	\$0.04	\$0.15	10.7	\$1.66
Banksia prionotes	1,286	0.13	\$4.40	\$0.33	\$1.45	\$0.28	\$0.23	\$0.05	\$0.05	1.7	\$0.09
Kangaroo Paw Big Red	6,667	1.00	\$0.76	\$0.20	\$2.42	\$0.21	\$0.08	\$0.11	-\$0.01	3.8	-\$0.05
Kangaroo Paws	64,706	9.82	\$3.30	\$0.25	\$2.52	\$0.22	\$0.10	\$0.03	\$0.03	130.0	\$3.59
Riceflower	4,231	0.42	\$7.30	\$0.24	\$1.76	\$0.18	\$0.14		\$0.06	12.7	\$0.76
Sholtzia Involucrata	5,000	0.50	\$4.16	\$0.13	\$2.44	\$0.07	\$0.05	\$0.01	\$0.06	16.0	\$1.02
Sholtzia Involucrata	2,000	0.20	\$5.69	\$0.18	\$1.10	\$0.56	\$0.17	\$0.09	-\$0.38	6.3	-\$1.30
Verticordia1	2,000	0.20	\$30.92	\$0.61	\$1.55	\$0.49	\$0.39	\$0.06	\$0.12	10.1	\$1.25
Verticordia2	2,000	0.20	\$12.94	\$0.32	\$0.67	\$0.60	\$0.48	\$0.08	-\$0.27	8.0	-\$2.19
Verticordia3	2,000	0.20	\$17.85	\$0.38	\$1.55	\$0.34	\$0.25	\$0.06	\$0.05	9.3	\$0.44
Verticordia4	2,000	0.20	\$17.02	\$0.22	\$1.18	\$0.24	\$0.18	\$0.03	-\$0.02	15.8	-\$0.32
<b>Average</b>	<b>7,859</b>	<b>1.12</b>	<b>9.82</b>	<b>0.30</b>	<b>1.74</b>	<b>0.30</b>	<b>0.20</b>	<b>0.05</b>	<b>0.00</b>	<b>18.83</b>	<b>0.43</b>
<b>Min</b>	<b>1,167</b>	<b>0.12</b>	<b>0.76</b>	<b>0.13</b>	<b>0.67</b>	<b>0.07</b>	<b>0.05</b>	<b>0.01</b>	<b>-0.38</b>	<b>1.60</b>	<b>-2.19</b>
<b>Max</b>	<b>64,706</b>	<b>9.82</b>	<b>30.92</b>	<b>0.61</b>	<b>2.52</b>	<b>0.60</b>	<b>0.48</b>	<b>0.11</b>	<b>0.17</b>	<b>130.00</b>	<b>3.59</b>

**Table 4.5 Waxflower**

Variety	Plants per ha	Plants per metre	Income per plant \$1,401.0	Income per Stem	Income per \$ labour	Total Cost per stem	Labour \$ per stem	Overhead per stem	Gross margin per stem	Stems per metre <sup>2</sup>	Gross margin per metre <sup>2</sup>
Wax0	3,636	1	0	\$0.23	\$3.04	\$0.20	\$0.08	\$0.02	\$0.03	61.0	\$1.63
Wax1	1,667	0.50	\$18.52	\$0.13	\$1.65	\$0.12	\$0.08		\$0.01	71.2	\$0.37
Wax1	1,667	0.50	\$5.38	\$0.18	\$1.87	\$0.13	\$0.10	\$0.02	\$0.05	15.0	\$0.70
CWA	1,604	0.50	\$6.97	\$0.33	\$1.51	\$0.31	\$0.22	\$0.06	\$0.02	10.4	\$0.23
DancingQueen	3,493	0.35	\$25.44	\$0.34	\$5.13	\$0.09	\$0.07		\$0.25	26.0	\$6.58
Denmark	2,500	1.00	\$18.24	\$0.26	\$1.69	\$0.20	\$0.15	\$0.04	\$0.06	71.0	\$4.32
Double Pink	2,500	1.00	\$10.06	\$0.39	\$1.12	\$0.45	\$0.35	\$0.08	-\$0.06	25.7	-\$1.55
Wax2	1,600	0.50	\$19.14	\$0.40	\$2.72	\$0.22	\$0.15	\$0.05	\$0.18	23.9	\$4.33
Ivory	3,333	1.00	\$32.00	\$0.33	\$4.49	\$0.09	\$0.07	\$0.01	\$0.24	96.6	\$23.51
Jasper	2,500	1.00	\$5.16	\$0.17	\$0.86	\$0.35	\$0.20	\$0.07	-\$0.18	30.3	-\$5.55
Jurien	2,500	1.00	\$6.81	\$0.30	\$0.84	\$0.46	\$0.36	\$0.09	-\$0.16	22.6	-\$3.63
Painted	2,500	1.00	\$9.35	\$0.21	\$0.78	\$0.33	\$0.27	\$0.05	-\$0.12	44.4	-\$5.40
Wax3	2,500	1.00	\$32.17	\$0.15	\$2.47	\$0.08	\$0.06	\$0.01	\$0.08	210.2	\$16.03
Sweet Georgia	1,600	0.50	\$16.76	\$0.22	\$1.19	\$0.24	\$0.18	\$0.04	-\$0.02	38.7	-\$0.96
White Mullering	4,733	0.47	\$20.80	\$0.31	\$5.68	\$0.07	\$0.05		\$0.24	31.9	\$7.54
<b>Average</b>	<b>2,478</b>	<b>0.74</b>	<b>16.20</b>	<b>0.27</b>	<b>2.29</b>	<b>0.23</b>	<b>0.16</b>	<b>0.05</b>	<b>0.04</b>	<b>51.29</b>	<b>3.32</b>
<b>Min</b>	<b>1,600</b>	<b>0.35</b>	<b>5.16</b>	<b>0.13</b>	<b>0.78</b>	<b>0.07</b>	<b>0.05</b>	<b>0.01</b>	<b>-0.18</b>	<b>10.45</b>	<b>-5.55</b>
<b>Max</b>	<b>4,733</b>	<b>1.00</b>	<b>32.17</b>	<b>0.40</b>	<b>5.68</b>	<b>0.46</b>	<b>0.36</b>	<b>0.09</b>	<b>0.25</b>	<b>210.20</b>	<b>23.51</b>

**Table 5: Comparative summary between flower types**

Type		Plants per ha	Plants per metre	Income per plant	Income per Stem	Income per \$ labour	total Cost/m2	Total Cost per stem	Labour \$ per stem	Overhea d per stem	Gross margin per stem	Stems per metre2	Gross margin per metre2
Exotic	Average	166,667	18	8.08	1.09	2.14	93.04	1.00	0.47	0.25	0.09	150.12	8.29
	Min	133,333	10	1.79	0.45	1.49	23.93	0.44	0.21	0.10	-0.08	19.75	-15.06
	Max	200,000	20	16.45	3.95	2.66	121.13	3.59	1.49	0.85	0.36	213.08	43.40
Leucadendron	Average	2,424	0.64	17.21	0.30	2.69	8.31	0.25	0.15	0.03	0.05	44.72	1.22
	Min	1,667	0.50	6.54	0.15	1.41	2.38	0.07	0.04	0.00	-0.08	6.54	-4.96
	Max	5,455	1.22	30.99	0.50	4.61	20.46	0.36	0.30	0.05	0.14	85.15	6.99
Foliage	Average	1,511	0.55	6.33	0.36	4.69	2.37	0.31	0.19	0.01	0.05	9.91	1.49
	Min	488	0.05	2.58	0.20	0.48	0.47	0.06	0.05	0.01	-0.54	0.63	-0.34
	Max	2,222	1.00	12.50	0.47	9.31	7.75	0.74	0.41	0.01	0.37	23.33	2.95
Other natives	Average	7,859	1.12	9.82	0.30	1.74	2.41	0.30	0.20	0.05	0.00	18.83	0.43
	Min	1,167	0.12	0.76	0.13	0.67	0.34	0.07	0.05	0.01	-0.38	1.60	-2.19
	Max	64,706	9.82	30.92	0.61	2.52	4.94	0.60	0.48	0.11	0.17	130.00	3.59
Waxflower	Average	2,478	0.74	16.20	0.27	2.29	8.53	0.23	0.16	0.05	0.04	51.29	3.32
	Min	1,600	0.35	5.16	0.13	0.78	1.99	0.07	0.05	0.01	-0.18	10.45	-5.55
	Max	4,733	1.00	32.17	0.40	5.68	16.14	0.46	0.36	0.09	0.25	210.20	23.51

## Some other comparisons

It was possible to extract some other data from the information supplied by growers. This relates to plant density fertiliser use.

**Table 6 Other comparisons**

<b>Parameter</b>	<b>Waxflower</b>	<b>Leucadendron</b>
Plants per hectare	1667 – 4733	1667
Stems per plant	21 – 143	13 - 170
Fertiliser cents per plant	0.25 – 16 (most 3.5)	0.8 - 161
Fertiliser cents per stem	0.05 – 0.19 (most 0.06)	0.005 – 1.25
Percent labour of total cost	63-93% (most 70-75%)	54 – 81%

Clearly this indicates that nutrients are not a significant cost in the production of these crops. However, another project has observed that most growers are providing inadequate nutrients and water to obtain optimum yields. Even at these improved levels the cost associated with nutrients applied is still a minor cost but one that can have very disproportionate benefits in both yield and quality as well as the reduction in overhead costs per unit production.

## 4. Interpretation and conclusions

The potential to use benchmarking as means of analysing the farm or crop performance is very great.

Always consider whether you are running the business as a hobby or a business. And always discuss your major changes with qualified accountants, planners or consultant

Some ways the information can be used include the following.

### 4.1 High Overhead cost

With a relatively or very high overhead cost, growers would need to consider if the components are realistic or whether capital type items have been included. If it is all true overheads then examine whether they are overpriced, beneficial or extravagant. It is perfectly legitimate to have high overheads (I assume on a stem basis) if the crop is a high value one, if it is contributing to reduced costs or production elsewhere in the analysis. For example a high consultancy cost is appropriate if the advice is reducing labour cost per stem or price per stem. But would not be appropriate if the increased overhead is carried over into the extra production.

Another example may be the high subscription to journals and magazines and organisations if they are feeding a hobby rather than the business. Telephone accounts can often blow out in the name of business but not necessarily be justified.

The biggest problem is often the burying of capital improvements under repairs and maintenance. Always compare “apples with apples”.

The data collected here has generally been restricted to non capital maintenance.

### 4.2 High Labour cost

The bane of any flower grower is the sheer cost of labour. All growers are aware of this. The data here supports that fact. But remarkably little progress is made to reduce this cost. The total wages bill (including growers own) is not the main concern. It is the cost per stem or bunch that is the real indicator. Currently the more product produced the higher the total cost of labour but not much if any reduction in labour cost per stem.

Several growers have adopted partial mechanisation and thereby saving some harvest costs; others pay pickers on a piece basis which provides incentives for high productivity and controlled costs. Layout of the packing shed, time management within that stage can be fundamental to reducing costs. That may mean rearranging sorting and trimming stands, relationship to coolroom and pulsing areas. It will involve monitoring time used in the various stages.

Quality of staff is also critical; growers reported very significant differences between various workers. Unless the grower has a “social welfare” responsibility it is necessary to be hard on those staff with low productivity by either paying more to those more efficient, retraining or terminating employment.

### **4.3 High variable cost**

Variable cost generally is not high but the exceptions are those growers who are also exporting direct and thereby incurring their own marketing and transport costs. Packaging (mainly cartons are also a significant cost. The difference should be reflected in the price received.)

Other costs such as fertiliser are uniformly low and may reflect the nutrient needs of the plants grown but may also reflect the inadequate nutrients being applied.

Where the costs are significant then working towards reducing these may be beneficial. Consider bulk purchases of cartons with other growers and exporters. Everyone would probably benefit but a long-term commitment is required.

Transport cost may be controlled by the airlines but larger volumes and more regular exports may help reduce the costs. Look closely at the cost of own export to determine if selling to an exporter is the preferred option.

### **4.4 High total cost**

We have discussed the labour and variable cost but the third part is the overheads of running the business. This is partly a fixed element such as rates, telephone, accountancy but also an variable component for maintenance and subscriptions, consultancies etc.

Some smaller properties have a high overhead level which is spread over a limited production. Growers need to be aware of some of these scale issues and control these costs.

### **4.5 Low costs**

Not often a problem but could indicate low levels of production which may lead to inefficiency. It may also indicate poor maintenance leading to long-term problems.

### **4.6 Low prices**

Low prices are always an issue but become particularly relevant when those received are lower than what others are getting for the same product. Prices offered by exporters differ for all sorts of reasons: distance from market, quality, volume available versus demand for product, old versus new varieties, or limited bargaining power. One exporter indicated he could pay Eastern States growers \$1 more for a bunch of wax for the American market than he could pay Western Australian growers because of freight costs.

Growing desirable varieties, growing some specialised lines that exporters want with the “stinger” of “buy my other flowers and you will get the high demand one”.

If prices are received that are lower than cost of harvest or cost of production, decide if it is worth harvesting and losing on that deal. Or just prune them down to avoid the processing costs.

## **4.7 High prices**

High relative prices are never a problem and rarely obtained. But if growers are comparing prices with other growers they should know what the real price is, does it include cartons, freight or is it a net on farm price for the crop.

## **4.8 Low production**

A problem for most growers is not being able to recognise when production is low. They often don't record production well enough on individual varieties or on specific blocks to know what the real production is. Yield is a function of plant health, environment, water and nutrition. The majority of growers can improve productivity. In most cases it is worth doing so. Low production generally leads to inefficiency of limited scale and the burden of high overhead costs.

The scope is significant for all growers to learn from others, growers, consultants and specialists to boost yield to optimum levels.

## **4.9 High Production**

High production is only an issue if there is no demand which occasionally happens to growers. Similarly if there is limited capacity to manage the harvest with available staff or facilities. Reduced areas may in those cases be appropriate.

## 5. Communication, extension and promotion

Project staff have addressed about 500 growers and industry people on the many benefits and results of the project. An additional 600 people receive regular updates through the Floriculture newsletter on this project.

Many opportunities and channels of communication were used to initially recruit growers into the project and subsequently to feed back information on progress and results. Initially a series of presentations were made about the project, the aims, likely outcomes, the benefits and what was involved to participate. These occurred at Flowerswest AGM, field days and other industry meetings as well as a series of meetings arranged with an international speaker on the program. These were held in Perth and country areas.

Originally the project had anticipated using special interest grower groups to discuss and develop value from the benchmarking activities. However, these discussion groups did not eventuate. Instead a greater reliance was placed on conference and workshop presentations of results.

The Western Australian Department's Floriculture Newsletter is distributed to 600 growers and industry members in many parts of Australia and all Western Australian flower growers. It is a primary vehicle for information flow to growers on this project. Five articles already printed and others planned ensured that all growers had the opportunity to be aware of the project and had the opportunity to take part. They will all have the results available.

Individual contact with growers was also used to recruit participants into the project. This was predictably the most effective way of recruiting participants.

In the final year of the project several conferences have been used to feed the results and the messages of the benchmarking project to growers of Waxflower and Protea. These papers have been reproduced in conference notes and/or published in other documents.

It is estimated that 470 people have attended meetings at which benchmarking was explained and discussed. We anticipate at least another 50 will be exposed in meetings arranged but not run at the date of writing this report.

The final part of the communication strategy involved including the insight obtained from the project in the new "Managing waxflower for improved quality and profit". This manual is in the final edit stage and will be suitable for any new and existing grower.

The self help manual included in this report will also be published in a Western Australian Department of Agriculture publication.

### 5.1 Newsletter articles

Gerry Parlevliet, 2001, Flowers – getting the money right, Floriculture News Vol 55, page 16

Gerry Parlevliet, 2002, The bush economist, Floriculture News Vol 56 pp20-21

Gerry Parlevliet, 2002, Benchmarking progress, Floriculture News Vol 58, page 21

Gerry Parlevliet, 2003, Benchmarking progress – A serious look at your business? Floriculture News Vol 60, page 22

Gerry Parlevliet, 2003, Banksia economics and the lessons of Benchmarking, Floriculture News Vol 61, page 14

Christine Storer, 2002, Improving Business Performance with Benchmarking, Flowerswest magazine, Winter Ed. Page 4

### 5.2 Presentations



Powerpoint presentations have been prepared and presented at a range of venues:

### **Project initiation and recruitment**

Flowerswest AGM 2001 (20)

WAFEX field day, Swan Valley 2002 (20)

Native wildflower commodity Group, Field day at Muchea 2002 (20)

Protea Field-day at Baldvis 2002 (20)

Exotic grower group, South Perth 2002 (10)

Verticordia Group field day, Meckering (20)

Workshop Perth September 2002 (part of International visitor program) (50)

Workshop Manjimup September 2002 (part of International visitor program) (30)

### **Project results**

Forum for RIRDC committee members in WA Sept 2002

WaxConference 2003, Perth (60)

Banksia Management workshop, Albany 2003 (50)

WaxConference 2004, Perth (Summary of Paper in report) (70)

IPA 2004, Melbourne (To be published in Acta Horticulturae) (100)

Seminar/Field day presentations in South Australia, Victoria planned for 5-9<sup>th</sup> July 2004 (20)

Seminar/Workshop presentation in Queensland planned 20<sup>th</sup> September 2004 in association with New Crops Conference (20)

## 6. Implication

The flower industry in Australia is at some risk on the international market. Labour costs are very high and off farm cost are also high (freight). Size of the enterprise in many cases is too small to enable the capital investment required to improve efficiency. Our competitiveness compared to other countries is deteriorating.

Growers need to improve their production and management to stay profitable. New varieties or specialty lines which have higher premium prices disguise the underlying profitability of commodity production. There is a limit to the number of new varieties and the length of time they stay exclusively available to local growers.

The results of this project clearly illustrate there is a wide range of production and economic viability. This suggests that there are many growers producing below capacity. Many of the solutions are readily available but require growers to search them out.

Growers are not recognising these improvements as improvements and then often when they do they do not allocate the time to investigating the improvements. This lack of business management approach to the enterprise will result in many dropping out of the industry.

The growers operating their business as an ongoing endeavour and striving for improvement, with careful attention to the bottom line for each variety or crop they grow are likely to expand, grow and become more efficient and profitable.

The optimistic prediction of 25% increase in profitability is achievable for most growers, however, the likely rate of adoption of production improvement is going to be significantly lower than first estimated. Therefore impacts on export earnings will not be noticed in a hurry.

## 7. Recommendation

Clearly the project has identified labour costs as the dominant feature of the cost of producing flowers:

1. Further work on determining labour intensive activities on the farm and the time they take.
2. Carry out R and D to determine or extend more efficient ways of carrying out labour intensive activity including mechanical harvesting and processing.

Growers are generally happier to concentrate on production issues such as nutrition, irrigation and pest management but less comfortable to come together on financial and planning issues:

3. Develop a program of information transfer on benefits of benchmarking.
4. Encourage all Research and Development projects to embed the importance of planning and financial management in their communication with growers.
5. Encourage all conferences/workshops supported by RIRDC to include presentations on these issues.
6. In projects of this nature ensure growers have been identified and have committed to take part as individuals and to provide the information specified, this will require much earlier planning.

# 8. Appendix

## 8.1 Appendix 1: Conference papers

### **WaxConference 2004, Perth WA - Are waxflowers making money?**

Presenter: Gerry Parlevliet, Department of Agriculture, South Perth

The WA flower industry recognised that it needed to benchmark the economic and production performance of growers to improve understanding of cost structures and production parameters and develop ways to improve production efficiency and profit.

The Rural Industries Research and Development Corporation (RIRDC) with the Department of Agriculture and Flowerswest funded the project “Improving profit in the Western Australian Native flower industry through benchmarking.”

With the potential to increase exports from its current \$20,000,000, the industry has indicated that large improvements can be made to improve profitability by better adoption of best practice – however, few growers are in a position to identify where they are going wrong relative to others. Poor adoption of efficient systems increases environmental risks and while labour is the major cost of the flower production enterprise it provides employment for a large number of people.

Benchmarking has been recognised as a useful tool to compare production, profitability and efficiency in many industries. The flower grower may feel a little intimidated but this tool/process is equally applicable to any sized flower growing enterprise.

Benchmarking is comparing the profitability/efficiency of your flower production against the performance of other growers and thereby learning how to improve your performance. This can be on a farm, crop, greenhouse or variety basis.

Cooperating growers, growing a range of native, protea and exotic flowers, collated their information, and it became clear very quickly that profitability is not high. The main cost is labour representing up to 75% of their total operation cost. Many smaller growers had very high overheads which spread over low production resulted in negative returns.

Generally plants, fertilisers, sprays were minor costs and did not negatively impact profits, however, some of the levels of use reported suggested additional nutrient management would increase production and profitability.

Yields, varietal selling price differences, and price differences received from different exporters impacted significantly.

The results are mainly from one year but early indication from the second years data suggests exchange rates and subsequent prices for export products will impact significantly on profit.

Cost savings in labour and overheads are essential for continued viability as is improving yield to spread the overhead costs over a larger volume.

Growers like most businesses are busy doing their day to day activity and do not stand back and review their operations. They generally do not keep adequate records and certainly do not analyse the information available. Failing to regularly review their operations may result in profitability slipping and money being lost on some varieties.

The weather and exchange rate are some issues that impact dramatically but cannot be controlled – modified maybe with shelterbelts or hedging of funds but not controlled.

On the other hand there are a host of management practices or management options that can be implemented including:

- replacing older varieties
- changing management i.e. mechanisation
- improving fertiliser/irrigation practices and increase production
- improving quality
- improving labour efficiency
- increasing area to spread risk and fixed costs

Having carried out a number of exercises with growers it is obvious that only the individual grower will ever be able to assess if they are profitable. There are many personal considerations, many decisions are subjective and not based on analyses of records, but records generally are not set up to enable easy cross variety comparisons.

An example of a gross margin budget for Waxflower. It provides an indication of the costs and incomes that have been achieved.

Table 1: Wax gross margin example

<b>Income</b>	<b>Grade 1 (60cm)</b>	<b>600,000</b>	<b>100,000 (400gm)</b>	<b>\$2.80</b>	<b>\$280,000</b>
	<b>Grade 2 (50cm)</b>	<b>400,000</b>	<b>30,000 (400gm)</b>	<b>\$2.00</b>	<b>\$60,000</b>
	Total				\$340,000
<b>Cost</b>			<b>Supplies</b>	<b>labour</b>	<b>Total</b>
	Replace plant		\$2,500	\$500	\$3,000
	Pruning			\$2,000	\$2,000
	Pest Control		\$3,000	\$2,000	\$5,000
	Fertiliser		\$3,000	\$1,000	\$4,000
	Irrigation/fuel		\$10,000	\$3,000	\$13,000
	Harvest pack		\$10,000	\$95,000	\$105,000
	Transport etc		\$10,000		\$10,000
	Total cost				\$142,000
	GM				\$200,000
	GM/ha				\$40,000

### Assumptions for gross margins

Five hectare block – new hybrid/selection, Yield 80 stem/pl \* 2500 pl/ha = 200,000 stems, total production 1,000,000 stems, Bunch: grade one 6 stem/bunch, grade two – 12 stem/bunch, bunches are 400 g for export, 1000 bunch per day for 5 people needed for 130 days at \$100 per day each plus one allowance for manager \$30,000 = \$95,000, profit has to cover investment, depreciation, rates, interest, tax etc

This is an example only: discuss your own situation with your accountant or consultant.

A series of interviews with growers also provided a set of real data, which can only be discussed as indices for confidentiality and comparison reasons. These indices can be developed to highlight the areas of importance. The tables below compare the example with results from the study of wax.

**Table 2: Benchmark indices comparison for waxflower from survey and example Gross margin**

Parameter	Waxflower survey indices	Example waxflower GM
Income per ha	\$11,000 - 52,000	\$68,000
Income per plant	\$6.54 - 30.99	\$27.20
Income per stem	\$0.15 – 0.50	\$0.34
Income per \$1 labour	\$1.41 – 4.00	\$3.30
Cost per ha	\$7,930 – 68,000	\$28,400
Cost per stem	\$0.07 - 0.36	\$0.142
Labour per ha	\$6,500 – 37,000	\$20,700
Labour per stem	\$0.04 – 0.30	\$0.104
GM per ha	\$(16,000) – 23,000	\$40,000
GM per stem	\$(0.08) – 0.14	\$0.20

### Some questions you may like to think about.

What are the financial and production issue holding back your profit? What is your optimum profit level? How will your enterprise develop over the next few years? How can you improve your enterprise to maximise the opportunity to sell the business to a new player? Are you in control of the enterprise or is the business in control?

Consider keeping better records on yield by quality and price for each block/variety. number plants/hectare, costs for block/variety, labour for stages of work i.e. maintenance, pruning, (mechanical versus hand), harvest, grading and packing, (time to walk from table to coolroom, time to trim bunch in shed. How can you get your staff more productive (incentives?)

The resulting advice to growers is:

Define the information you need on a regular basis to ensure increasing profitability, analyse the data and look for areas of significant impact and look for scope to increase labour efficiency and maximise mechanical aids and work with others in the industry to ensure prices are optimised.

## **IPA 2004, Melbourne - Improving Flower Production Profits with Good Records and Performance Analysis**

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**Keywords:** benchmarking, economics

### **Abstract**

The Western Australian flower industry recognised that it needed to benchmark the economic and production performance of growers. The benefits were identified as improved understanding of the cost structures and production parameters; the ability to analyse the results developing a clear indication of profitability; and the ability to bring growers together to develop ways to improve production efficiency and profit.

The Rural Industries Research and Development Corporation (RIRDC) with the Department of Agriculture and Flowerswest (Industry organisation) funded the project “Improving profit in the Western Australian Native flower industry through benchmarking, DAW-102A”. The results from this project are reported.

There are some good examples of horticultural industry benchmarking on an industry basis. These are useful for inter industry comparison and provide an incentive for the flower industry to follow suit.

Several very useful Benchmarking and Best practice projects for the citrus industry and the Wool Industry as well as the format used by the Bankwest benchmarking survey are helpful. They help to design the process for this project, the input formats, the data to be compared, the spreadsheet construction, the analysis and presentation formats as well as the adult learning required to adopt best practice in the Flower Industry to improve profits and production.

### **INTRODUCTION**

The industry has the potential to increase exports from its current \$20,000,000. The limiting factors are lack of new larger investors and the apparent lack of profitability in the industry. Industry has indicated that large improvements can be made to improve profitability by better adoption of best practice – however, few growers are in a position to identify where they are going wrong relative to others. Poor adoption of efficient systems increases environmental risks. Labour is the major cost of the flower production enterprise and provides employment for a large number of people. Lack of growth in the industry reduces the employment opportunities below what it could be.

The Western Australian flower industry recognised that it needed to benchmark the economic and production performance of growers (Flowerswest 2001). Discussions with industry members have indicated a need for analysis of production and profitability to help improve the industry competitiveness and attract new players. The benefits were identified as improved understanding of the cost structures and production parameters; the ability to analyse the results developing a clear indication of profitability; and the ability to bring growers together to develop ways to improve production efficiency and profit.

Benchmarking has been recognised as a useful tool to compare production, profitability and efficiency in many industries. Benchmarking has been used by many industries and companies to compare themselves against others and their competitors. Benchmarking has been defined and redefined but is suggested by Worsley and Gardener (1996) as “a process of effective decision-making that results in continuous improvement of management ‘practice’ and operating ‘process’

within the business”. Standards Australia draws on many other references to suggest benchmarking is: “The continuous process of measuring our products, services and practices against either our toughest competitor or those companies renowned as leaders” and “Benchmarking is the search for industry best practices that lead to superior performance” and “Benchmarking is comparing your organisation against another organisation on some aspect of performance-process, product or service, in which the other organisation excels- with the objective of finding ways you can improve your performance”.

These examples of definitions for benchmarking are generally all high order and refer to larger companies. The flower grower may feel a little intimidated but this tool/process is equally applicable to any sized flower growing enterprise.

Benchmarking is comparing the profitability/efficiency of your flower production against the performance of other growers and thereby learning how to improve your performance. This can be on a farm, crop, greenhouse or variety basis.

The literature review revealed no previous work on benchmarking of flower production. However, many other industries have carried out such studies. These provide valuable examples for conducting a similar activity in the Flower Industry. They include the Citrus Industry (Australian Horticulture Corporation 1999 and Braniff, John *et al.* (2001), Bennett (2000)), Wheatbelt growers in WA, (BankWest Benchmarks 2000-2001) and the nursery industry (Brown 2000).

## **METHODOLOGY**

Growers worked with the project staff to identify their production and financial information. This was entered into a spreadsheet developed for the purpose. Data was then calculated into a set of benchmark indices and the results provided back to growers.

### **How to benchmark**

Standards Australia 1996 suggests, and quote King, Moran and Niall, that the steps are:

- Analyse process or operation and decide what is to be benchmarked
- Define and measure selected process and formulate the benchmarking plan
- Select benchmark partners and agree on parameters
- Carry out benchmarking
- Analyse results and apply to your process
- Recalibrate operations and measure results and effects.

They also suggest that anyone thinking about doing benchmarking needs to; know what is to be benchmarked, what is to be measured? And how are results to be analysed and used?

That suggests that the operation (in this case the flower enterprise) needs to be very well understood in all its components. With some understanding of which areas are likely to benefit from improvement.

In the case of flowers it may not be useful to benchmark the number of cultivations prior to planting waxflower when it only differs by one or two operations and only occurs every 10 years. However, the yield and labour used in the enterprise is a major determinant of profitability and impacts the enterprise each day. The partners are clearly the growers and the data analysis organisation. The results are analysed to provide an useful and confidential comparison and growers are likely to apply the results to their operation.



## **RESULTS AND DISCUSSION**

Little benchmarking had been carried out in the flower industry with equally little performance analysis reported in the literature. The project has carried out a wide ranging literature review and is developing a self guide manual for growers to have the tools to carryout their own bench-marking in future. These will be incorporated in the final report available from the RIRDC website when the project is completed in 2004.

Cooperating growers, growing a range of native, protea and exotic flowers, generously collated their information (often from multiple locations) and these data are provided in the presentation. However, it quickly became very clear that profitability is not high. The main cost is labour representing up to 75% of their total operation cost. Many smaller growers had very high overheads which spread over low production thereby resulting in negative returns.

Generally plants, fertilisers, sprays were minor costs and did not negatively impact profits, however some of the levels of use reported suggested additional nutrient management would increase production and profitability. Yields, varietal selling price differences, price differences received from different exporters impacted significantly.

The results are mainly from one year but early indications from the second years data suggest exchange rates and subsequent prices for export products will impact significantly on profit. Cost savings in labour and overheads are essential for continued viability as is improving yield to spread the overhead costs over a larger volume.

Growers like most businesses are busy with their day to day activities and do not stand back and review their operations. They generally do not keep adequate records and certainly do not analyse the information available. Failing to regularly review their operations may result in profitability slipping and money being lost on some varieties.

If they do review, the results may not always be controllable by the grower. The weather and exchange rate are some issues that impact significantly but cannot be controlled – modified maybe with shelterbelts or hedging of funds but not controlled.

On the other hand there are a host of management practices or management options that can be implemented if these are identified. These include: replace older varieties, change management i.e. mechanisation, improve fertiliser/irrigation and increase production, improve quality, improve labour efficiency and increase area to spread risk and fixed costs.

Having carried out a number of exercises with growers it is obvious that only the individual grower will ever be able to assess if they are profitable, there are many personal considerations, many decisions are subjective and not based on analyses of records, but records generally are not set up to enable easy cross variety comparisons.

*An example of a simple data collection sheet provides an indication of the type of information used in comparing and benchmarking enterprises or crops.*

### **Figure 1: Data sheet example**

INCOME	No. stems	No. bunch	Price per stem	Price per bunch	<b>Total</b>
Quality 1					
Quality 2					
Quality 3					
<b>Total gross income</b>					
VARIABLE COSTS					<b>Total</b>
Soil testing					
	Amount	Price			
Fertiliser					
Crop monitoring					
Pest control					
Chemicals					
Labour					
Replacement plants					
Irrigation costs					
Pruning costs					
Fuel oil repairs etc					
Picking and packing costs					
	No. stems	Time	Hour rate		<b>Total</b>
Labour picking					
Boxes					
Labels and brochures					
Disinfectants					
Preservatives					
Transport					
<b>Total variable costs</b>					
FIXED COSTS - Overheads					
Advertising and promotion					
Accounting and legal					
Insurance					
Interest and bank charges					
Postage and stationary					
Telephone fax Internet					
Rent					
Depreciation, lease or HP					
other					
<b>Total fixed costs</b>					
Liabilities					
Capital invested					
Development costs					

It is possible to generate an example of a gross margin budget for any crop and in this case waxflower. It provides an indication of the costs and incomes that have been achieved.

**Table 1: Wax gross margin example**

<b>Income</b>	<b>Grade 1 (60cm)</b>	<b>600,000</b>	<b>100,000 (400gm)</b>	<b>\$2.80</b>	<b>\$280,000</b>
	<b>Grade 2 (50cm)</b>	<b>400,000</b>	<b>30,000 (400gm)</b>	<b>\$2.00</b>	<b>\$60,000</b>
	Total				\$340,000
<b>Cost</b>			<b>Supplies</b>	<b>labour</b>	<b>Total</b>
	Replace plant		\$2,500	\$500	\$3,000
	Pruning			\$2,000	\$2,000
	Pest Control		\$3,000	\$2,000	\$5,000
	Fertiliser		\$3,000	\$1,000	\$4,000
	Irrigation/fuel		\$10,000	\$3,000	\$13,000
	Harvest pack		\$10,000	<b>\$95,000</b>	\$105,000
	Transport etc		\$10,000		\$10,000
	Total cost				\$142,000
	GM				\$200,000
	GM/ha				\$40,000

Assumptions for gross margins:

Five hectare block – new hybrid/selection. Yield 80 stem/pl \* 2500 pl/ha = 200,000 stems

Total production 1,000,000 stems. Bunch: grade one 6 stem/bunch, grade two – 12 stem/bunch, bunches are 400 g for export. 1000 bunch per day for 5 people needed for 130 days at \$100 per day each plus one allowance for manager \$30,000 = \$95,000

Profit has to cover investment, depreciation, rates, interest, tax etc

This is an example only: discuss your own situation with your accountant or consultant.

A series of interviews with growers also provided a set of real data which can only be discussed as indices for confidentiality and comparison reasons. These indices can be developed to highlight the areas of importance. The tables below compare the example with results from the study of both wax and proteas.

**Table 2: Benchmark indices comparison for protea and waxflower from survey and example Gross margin**

Parameter	Protea survey indices	Waxflower survey indices	Example waxflower GM
Income per ha	\$9,000 – 99,000	\$11,000 - 52,000	\$68,000
Income per plant	\$5.50 - 29.00	\$6.54 - 30.99	\$27.20
Income per stem	\$0.14 – 0.40	\$0.15 – 0.50	\$0.34
Income per \$1 labour	\$0.90 – 5.70	\$1.41 – 4.00	\$3.30
Cost per ha	\$6,600 – 66,000	\$7,930 – 68,000	\$28,400
Cost per stem	\$0.05 – 0.31	\$0.07 - 0.36	\$0.142
Labour per ha	\$4,800 - 62,000	\$6,500 – 37,000	\$20,700
Labour per stem	\$0.05 – 0.24	\$0.04 – 0.30	\$0.104
GM per ha	\$(3,000) – 75,000	\$(16,000) – 23,000	\$40,000
GM per stem	\$(0.03) – 0.26	\$(0.08) – 0.14	\$0.20

**Table 4: Other parameters compare between Waxflower and protea**

<b>Parameter</b>	<b>Wax</b>	<b>Protea</b>
Plants/ha	1667-4733	1667
Stems /plant	21-143	13-170
Fertiliser cents/plant	0.25-17 (most 3.5)	0.8-161
Fertiliser cents/stem	0.05-0.19 (most 0.06)	0.005-1.25
Percent labour	63-93% (Most 70-75%)	54-81%

Some other interpretations from the work suggest that number of plants per hectare varies but most were planted at less than 2500 per hectare, harvested yield differences are large, fertiliser minor cost but large impact and labour is a large cost.

It also suggests some messages, higher plant density possible with new wax hybrids (i.e. 2500 plants per hectare), increase yield with good fertiliser and water management, produce more of the more marketable varieties and less of those that don't sell, record your yields and costs on a block or variety basis and analyse.

### ***Influencing the profit margin***

To influence the bottom line requires you to know what your actual situation is, you need to be objective in your analysis and you need the tools and expertise or "outside view". But some the options may be to increase volume which can be done by better management, fertiliser and irrigation and the area planted. This will result in increased efficiency of operations, improved bargaining power, increase total income (quantity x \$) and spread overheads and management costs over a larger volume.

Increase price with better varieties (price up 25%), better quality (maintain price, market), better presentation of product (market retention), negotiation with buyers (price up 10%), develop new markets (increase sales).

Reduce costs by increasing labour efficiency, for example pruning (20% saving by harvesting stems to pruning height), increase mechanisation at harvest (10-20% saving, a better layout in the shed (10-20% saving with better layout), improve pack out (reduced freight cost and reduced carton costs). The suggested per cent savings are estimates only.

Some questions you may like to think about. What are the financial and production issue holding back your profit? What is your optimum profit level? How will your enterprise develop over the next few years? How can you improve your enterprise to maximise the opportunity to sell the business to a new player? Are you in control of the enterprise or is the business in control?

Consider keeping better records on yield by quality and price for each block/variety: number plants/hectare, costs for block/variety, labour for stages of work i.e. maintenance, pruning, (mechanical versus hand), harvest, grading and packing, (time to walk from table to coolroom, time to trim bunch in shed. How can you get your staff more productive (incentives?)

The resulting advice to growers is: define the information you need on a regular basis to ensure increasing profitability, analyse the data and look for areas of significant impact and look for scope to increase labour efficiency and maximise mechanical aids and work with others in the industry to ensure prices are optimised.

## **8.2 Appendix 2: Benchmarking for cut-flower growers - a self guided manual - Draft**

Please note that the final published version will be expanded to include some features and discussions from this report.

### **Benchmarking for cut-flower growers - a self guided manual**

#### **Introduction**

Benchmarking has been recognised as a useful tool to compare production, profitability and efficiency in many industries. The flower industry in Western Australia raised benchmarking as a high priority. RIRDC has also identified benchmarking as a priority for the flower industry.

The objective is for the Australian Native flower industry to become more profitable, and to be able to identify the need for and utilise best practice.

The industry is provided with an opportunity to compare themselves to others in the industry via benchmarking and then identify new best practice to improve management.

This manual will enable growers of flowers in Australia to benchmark their own enterprise and work with others to compare across industries.

#### **BACKGROUND AND BENEFITS**

The WA industry has the potential to increase exports from its current level of \$20,000,000. The limiting factors are lack of new larger investors and the apparent lack of profitability in the industry. Industry has indicated that large improvements can be made to improve profitability by better adoption of best practice – however, few growers are in a position to identify where they are going wrong relative to others. Poor adoption of efficient systems increases environmental risks. Employment is the major cost of the flower production enterprise and the industry provides employment for a large number of people. Lack of growth reduces the employment opportunities below what it could be.

The Western Australian industry has identified the need for improved profitability and identified the need to use benchmarking to identify areas of improvement (The Flowerwest Research and Development report released August 2001). Discussions with industry members have indicated a need for analysis of production and profitability to help improve the industry and attract new players.

A program of introducing best practice will enable introduction of environmental improvement features such as irrigation efficiency, use of softer chemicals and Integrated Pest management (IPM). The improved profitability and expanded industry will create significant employment in rural areas.

The main risk to the success of the benchmarking is the unwillingness of individual growers to compare their production information. Growers always benefit from external information. They can adopt benchmarking of parts of their enterprise that they feel less threatened about sharing information on, such as fertiliser rates, irrigation, pest and disease control. Alternatively they can carry out internal benchmarking and track changes they make.

## **What is benchmarking?**

Benchmarking has been used by many industries and companies to compare themselves against others and their competitors. Benchmarking has been defined and redefined but is suggested by the authors of the RIRDC review (Worsley and Gardener, 1996 RIRDC SR NO. 74) as “a process of effective decision-making that results in continuous improvement of management ‘practice’ and operating ‘process’ within the business”.

Standards Australia in its handbook “Benchmarking Explained – A guide for undertaking and implementing benchmarking” draws on many other references to suggest benchmarking is:

“The continuous process of measuring our products, services and practices against either our toughest competitor or those companies renowned as leaders”

and

“Benchmarking is the search for industry best practices that lead to superior performance”

and

“Benchmarking is comparing your organisation against another organisation on some aspect of performance-process, product or service, in which the other organisation excels- with the objective of finding ways you can improve your performance”.

Standards Australia 1996 refer to the work of Spendolini who emphasises that benchmarking is a continuous learning process and is not a one off event nor is it just copying others.

They go on to suggest that benchmarking “ is a process of investigation and learning to enable your organisation to compare and perhaps, improve activities.”

These examples of definitions for benchmarking are generally all high order and refer to larger companies. The flower grower may feel a little intimidated but this tool/process is equally applicable to any sized flower growing enterprise.

*Benchmarking is comparing the profitability/efficiency of your flower production against the performance of other growers and thereby learning how to improve your performance. This can be on a farm, crop, greenhouse or variety basis.*

## **What are benchmarks?**

Benchmarks are an indicator of the state of the enterprise. They are generally indicators of performance and efficiency and of adoption of best practice.

On the flower farm some examples may be yield per hectare (stems or kg), number of stems produced per unit of labour, gross margin per hectare or metre. In the exotic flower industry this may be reflected in number of stems per square metre for roses. In proteas it may be stems per plant and in the waxflower industry as kg per hectare. In post harvest it may refer to number or percentage of stems protected from ethylene.

The first time the enterprises goes through this process it sets its own benchmark to which any changes can be compared.

In the industry or strategic sense the industry may be benchmarked for production and yield or cost of production this may then be compared to other industries.

## **What type of benchmarking?**

Standard Australia 1996 refer to a number of different types of benchmarking these include “internal”, “external -competitor, functional, industry, customer, supplier”, “best practice” and “generic”

Their discussion revolves mainly about companies but the differentiation has some benefit.

Internal benchmarking would be the comparison between two farms in the same farming company, or between varieties of flowers on the same farm, it will be useful but will only make large differences when there are significant performance differences between the activities. The advantages are that business retains the data and it is what you want to collect. The disadvantage is that the business does not gain from other business innovation.

External benchmarking is the usual preferred way to benchmark.

This may be comparing with **competitive** groups i.e. between growers but on issues where they are comfortable to provide data. For example, where they can compare irrigation, fertiliser efficiency and production. They do not have to compare marketing issues if they choose not to.

Benchmarking can also be done on a **functional** basis where businesses may be in different industries but they want to compare areas that are common, for example they may compare the efficiency of labour use in the flower industry with labour use in the fishing industry.

**Industry** benchmarking is regularly done to determine the state of the industry, either on cost of production, production, yield etc., these are often used for strategic rather than individual use.

**Customer benchmarking** was highlighted- “It is surprising how many organisations do not know what their customers really want. There is frequently a tendency to rely on the opinion that ‘we know what the customer wants, so we don’t really have to carry out any surveys’ ”

Similarly it is possible to **benchmark suppliers** of inputs into the industry or enterprise on performance.

**Best practice benchmarking** is considered more difficult but is often referred to in agricultural industries as a way to improve production. Best practice is a “moving target” and continual improvement is important.

**Generic benchmarking** relates to comparing related industry. In the flower industry this could be watching the European retailers and their interest in improved environmental management of their suppliers as this trend will impact on our exports and will also filter to our retailers.

### **Why benchmarking - a summary**

Benchmarking is often used in business management, it is variously defined as an ongoing process looking for and bringing in best practice. If you like - a benchmark is a measure of performance at a point in time. New best practice is then introduced to improve performance that then sets a new benchmark. The technique can be used for any set of performance criteria ranging from production through to environmental impact. This technique is often used in agriculture industries to compare the performance of different growers producing the same product. This can be based on physical production inputs, yield and cost.

**The technique in itself does not improve performance but does highlight various aspects where improvements can be made.**

To retain confidentiality, when conducting a group exercise, a third party often carries out the calculations and tabulations. There are many ways of doing this calculation, some systems include the use of computer software but others are carried out manually.

The growers need to provide information on area planted, equipment running time, labour costs at each stage, fertiliser type, quantity and cost, pesticide type, quantity and cost, irrigation quantities, timing, amounts, cost of running the system, harvesting labour cost, harvesting supplies and their cost, post harvest labour and equipment cost, packaging cost, disinfectant quantity and cost, cooling room cost, transport cost, marketing cost, yield and grades, prices received.

The results are then presented in different ways - more often than not in tables they can also be presented in graphs and histograms.

### **Is benchmarking for you?**

Benchmarking does require the grower to collect suitable information and to be able to manipulate it to enable the comparison. The benefits of benchmarking are clearly to improve understanding of the performance of both the physical, financial and even environmental aspects of the enterprise.

If you want to have a clear understanding of the way the enterprise operates and which parts return the bulk of your income as well as determining where you can improve practices benchmarking is for you.

If you are not in the business for long, are not able to collect the information required or don't appreciate the benefits, then it may not be for you.

But keep in mind those growers that are currently carrying out some form of benchmarking or are involved in research that compares results such as the STS work by a local consultant soon see the places they can improve management and subsequent profits.

### **Benchmarking tools and sources of information**

Benchmarking can be done in many ways both in great detail over the whole enterprise, focused on some components of the production cycle such as irrigation use or labour use, or it can be superficial over the farm.

The benchmarking can be carried out by the family or by consultants and accountants. Either way it is worth discussing with a third party to obtain maximum benefits.

If you would like to have a consultant carry out the comparison you will need to find one that is familiar with the techniques. They should be available through your local Consultant Associations or accountant.

The comparisons do not need sophisticated equipment but it does help. They can be done using pencil and paper and a calculator. The forms included in this manual provide an indication of what is involved.

Some industries have developed computer programs to enable entry of information and automatic comparison of benchmark results with a library of data. The Nursery Industry has such a facility. This will generally not be suitable for cut-flowers. However, looking at the NGIA website and obtaining a copy may interest some growers.

The author of this manual has used a template on the Microsoft® Excel spreadsheets to enter data and develop the benchmark indicators.

Rose producers can access a site in Queensland <http://www.ibps.com.au/> which has a production benchmarking module that can be used on line. It is limited but interesting.

### **How to benchmark**



Again Standards Australia 1996 suggests, and quote King, Moran and Niall, that the steps are:

- Analyse process or operation and decide what is to be benchmarked
- Define and measure selected process and formulate the benchmarking plan
- Select benchmark partners and agree on parameters
- Carry out benchmarking
- Analyse results and apply to your process
- Recalibrate operations and measure results and effects

They also suggest that anyone thinking about doing benchmarking needs to:

- Know what is to be benchmarked
- What is to be measured?
- How are results to be analysed and used?

That suggests that the operation (in this case the flower enterprise) needs to be very well understood in all its components. With some understanding of which areas are likely to benefit from improvement.

For example, it may not be useful to benchmark the number of cultivations prior to planting waxflower when it only differs by one or two operations and only occurs every 10 years. However, the yield and labour used in the enterprise is a major determinant of profitability and impacts the enterprise each day.

The results are analysed to provide a confidential and useful comparison that growers can apply to their operation.

### **Growers using benchmarking**

Some of the growers of Australian native, proteas and exotic flowers are benchmarking all or part of their enterprise.

Examples in the exotic industry have clear costs, income and production data for each glasshouse or crop and are able to graph production and profits. They are able to compare varieties and crops for profitability and make future planting decisions based on this.

A protea grower records in detail labour in their enterprise as it is obviously the largest cost and the one which can be managed to reduce cost. Monitoring changes when introducing time saving procedures or machinery shows up quickly on the bottom line.

A significant number of growers are working with Doug Hall (Consultant/Researcher) to treat waxflower with STS and their effectiveness is compared. Growers can easily see where they rank and can determine how they can improve. This is benchmarking.

A grower of protea has recorded all the costs associated with the crop on a routine basis and is able to compare it with other crops he grows.

Most waxflower growers when they get together at the pub or at meetings start comparing yield. This is a form of benchmark comparisons. Unfortunately these data are often based on different varieties, and on a plant basis. It is not strictly comparable when they are talking about one plant based on a 2 metre by 4 metre spacing versus a plant on a 1 metre by 3 metre spacing

### **Understanding economic and production comparisons**

To provide a little background the concept of gross margins is discussed. Most growers are familiar with gross margins. We also look at some of the cost areas in the flower industry to enable growers to get a feel for what is involved.

## **The cost of growing flowers**

The cost of producing flowers consists of the capital costs of establishing the enterprise, your direct costs of running the business and the indirect costs associated with any enterprise.

### **Capital costs**

Capital costs include land and water, structures or buildings , machinery, vehicles such as tractors as well as equipment such as graders and ploughs.

#### *Land and fixtures*

Land

Dams and bores

Fencing

#### *Structures*

Greenhouses

Shade houses

Packing sheds

Chemical sheds

Coolrooms

#### *Machinery/ vehicles*

Tractors

Rotary hoe

Grader

Trailer

Bunch tying machine

Delivery van

#### *Equipment*

Spray equipment

Irrigation systems

Drainage parts

Water disinfestation equipment

Disc plough

Fertiliser spreader

Fertigation unit

### ***Direct costs***

These are costs directly associated with the production of the crop these include fertiliser, sprays, plants, labour, chemicals, packing.

#### *Planting material*

Seeds  
Cuttings  
Grafting  
Plants

#### *Chemicals*

Fungicides  
Insecticides  
Fumigants  
Disinfectants

#### *Fertiliser*

Trace elements  
Lime  
Liquid fertiliser  
Bulk fertiliser

#### *Labour*

At planting  
At harvest  
Post harvest

These costs are generally in direct proportion to the amount of crop grown. However, this may be different if you have full time staff you wish to keep on. These costs are generally the ones used in calculating gross margins.

### ***Indirect costs***

These are costs associated with running business and are not dependent on the area of crop grown. These include rates and taxes, telephone accounts, accountancy fees, soil testing, promotion, and delivery.

### ***Environmental costs***

It is uncommon for growers to cost environmental impacts into their production costs. However, this will be applicable when the grower begins to market under Ecolabels. In this case managing the environmental consequences of production will incur cost. Water quality on or off farm comes into this category.

### ***Social cost***

Social costs may include the impact of changing your enterprise, on your family or your leisure activities (or lack there of) and could also include the impact of reducing changing production area on the career of family members.

### ***Natural resource cost***

The natural resources cost in the flower industry may refer to the loss of biodiversity or reduction in nutrients in bush pick harvest areas. Again there is a cost.

## ***Income***

Business income is directly related to the quantity, quality and price received for product less the charges from selling agents and transport. In the flower industry this is calculated on a stem basis or whole enterprise basis.

Business profitability is based on the total income minus the total costs including taxation.

## ***Gross margins***

The gross margin is generally the net of income minus the direct costs. Gross margins are simple economic calculations comparing operating costs and returns from sales or profits, they don't normally contain taxation or depreciation allowances. Gross margins are only calculated on an annual basis. Development budgets are calculated over the life of a crop and include depreciation allowances in most cases. They also allow calculation of cash flow and peak debt over that time.

### **Example gross margin budget for *Banksia hookeriana***

<b><i>Banksia hookeriana</i></b>			<b>Gross Margin</b>	
<b>Income</b>				
Total area (hectare)			2	
Average (stem No. per hectare)			60,000	
Total production			120000	
Average price per stem			\$0.41	
Grade 1	\$0.50	60.0%	\$36,000.00	
Grade 2	\$0.30	30.0%	\$10,800.00	
Grade 3	\$0.20	10.0%	\$2,400.00	
<b>Total income</b>			<b>\$49,200.00</b>	
<b>Costs of Production</b>				
			<b>Supplies</b>	<b>Labour</b>
Land preparation				90
Replacement plants planted 10%			350	40
Pruning				160
Weed control			150	150
Disease control			80	100
Insect control			40	
Tissue/soil test			150	50
Fertiliser			450	150
Irrigation				500
Fuel			1000	
Harvest/post harvest			1000	16000
			3220	17240
<b>Total Cost</b>				<b>20,460</b>
Gross Margin				\$28,740.00
Gross Margin per hectare				\$14,370.00

Note: This gross margin example is included as a guide only. Individual growers will need to discuss this with their financial advisers or accountants.

### ***Interpreting the gross margin***

The income section shows the area of the enterprise, the number of stems per hectare and the breakdown of the grades achieved from the product with appropriate prices. The total income is then calculated.

You will notice that all costs are those of the annual production cycle for the particular crop and do not include development costs, depreciation, indirect costs, environmental costs and taxation. This example indicates the grower is replanting 10% of the crop on an annual basis either with new varieties or to fill gaps. The costs have been broken down into supplies and labour. Some operations are carried out in conjunction with others and do not incur extra cost, i.e. insect control was carried out at the same time as the disease control. It is obvious that the flower industry is a heavy user of labour. Mechanisation of some parts of the production chain, particularly on larger scale operations, can make significant differences to profitability.

The total costs are added up. The gross margin is the difference between the income and the costs. This can be expressed as enterprise gross margin but is more often for comparison purposes converted to a per hectare basis.

Gross margins allow quick comparison of profitability of different enterprises or coarse changes to an enterprise. However, the real cost of the enterprise requires a more complex cashflow or development budget.

### ***Benchmarking the next steps?***

Real farm comparisons include more detail and analyse a wider range of practices to determine which new and better practices could be introduced.

Growers interested in becoming involved in a benchmarking program can talk to their consultants or contact a Floriculture Industry Development Officer at the Department of Agriculture. Commercial consultants and financial advisers are in a good position to help growers on individual basis. They may also be the position to conduct a comparison with other clients.

The Department of Agriculture will be able to help Western Australian commercial flower producers with information and help to perform a benchmarking comparison.

The checklist included in this manual will indicate if you are collecting sufficient information to be able to conduct a useful benchmarking activity

### ***The check list for benchmarking***

<b>Category</b>	<b>Information</b>	<b>Available</b>
Physical	Area of crop	
	Length of rows	
	Space between rows	
	Length of bed	
	Width of bed	
	Number of plants	
	Number of stems/kg/bunch etc in various grades	
Financial	Price per unit	
	Labour use and cost	
	Quantity and cost of fertiliser	
	Quantity and cost of pest control	
	Quantity and cost of irrigation	

	Farm operating overheads rates etc depreciation, insurance etc	
	Cost of marketing	
	Post harvest cost	
	Market rejects	
Equity	Value of enterprise	

The information used must be accurate. As results will be used to make future planning decisions and poor data could lead to a financial disaster. All income and costs need to be allocated to each individual farm enterprises to obtain an accurate result for each crop. Refer to production form below.

### *The benchmarking steps*

Although there are a number of different items in the table below not all need to be provided. The aim is to get to a number of plants per unit area preferably metres.

Area and number of plants per hectare can give a number of plants per metre. Number of metres of row and distance between rows can be multiplied together to give total area in square metres divide by 10,000 to get hectares. And if you divide number of plants by area in square metres you get plants per square metre

<b>Production Season 2001-2002</b>					
<b>ID</b>					
<b>Variety</b>					
<b>Crop code</b>					
<b>Area of each variety (ha)</b>					
<b>Number of plants in total for Variety</b>					
<b>Number of metres of row or bed</b>					
<b>Row spacing metres</b>					
<b>Inter-row spacing metres</b>					
<b>Plants per meter of row or bed (No.)</b>					

The production form below has options for different forms of production (listed as A, B, C), i.e. stems, bunch, carton or you can use kilograms. But you only need to add the data once then multiply out to get the common figures.

The opportunity is there to enter three grades of product. (listed as 1, 2 or 3). Price by quantity of production gives the return. This can then be divided by area or stem number. If you calculate to number of stems or kg they are able to be used to calculate cost of labour per unit or profit per unit.

**Production form**

<b>Grade</b>	<b>A. FLOWER HARVEST</b>				
	<b>Variety</b>				
<b>A1</b>	<b>No. Stems</b>				
	<b>Price per stem</b>				
<b>A2</b>	<b>No. Stems</b>				
	<b>Price per stem</b>				
<b>A3</b>	<b>No. Stems</b>				
	<b>Price per stem</b>				
<b>B1</b>	<b>No. Bunch</b>				
	<b>No. Stems per bunch</b>				
	<b>Price per Bunch</b>				
<b>B2</b>	<b>No. Bunch</b>				
	<b>No. Stems per bunch</b>				
	<b>Price per Bunch</b>				
<b>B3</b>	<b>No. Bunch</b>				
	<b>No. Stems per bunch</b>				
	<b>Price per Bunch</b>				
	<b>No. Cartons</b>				
<b>C1</b>	<b>Bunch per Carton</b>				
	<b>No stems per Bunch</b>				
	<b>Price per Bunch</b>				
	<b>No. Cartons</b>				
<b>C2</b>	<b>Bunch per Carton</b>				
	<b>No stems per Bunch</b>				
	<b>Price per Bunch</b>				
	<b>No. Cartons</b>				
<b>C3</b>	<b>Bunch per Carton</b>				
	<b>No stems per Bunch</b>				
	<b>Price per Bunch</b>				

**B. Flower RETURNS**

**C. Flower ENTERPRISE VARIABLE COSTS (NON LABOUR)**

1. Total costs of harvesting				
2. Packaging and labels				
3. Chemicals and preservatives				
5. Marketing cost				
6. Transport & cartage				
7. Commission				
8. Miscellaneous production Cost				
Portion of fertiliser *				
9. Cost of fertiliser				
Portion of sprays *				
10. Cost of sprays				
% Unsegregated costs to individual crop	0	0	0	0

**Inputs Total for Farm**

	Type	Amount	Cost
- Fertiliser	phosphate		
	potassium		
	urea		
- seed/sprays	fungi		
	weed		

\* Transfer portion for each variety or cultivar to appropriate place

The above data needs to be provided for each crop you are comparing. Most farms only use a bulk amount of chemical or fertiliser and you will need to apportion to each crop.



**D. LABOUR COSTS**

**Casual labour**

Contract & casual labour					
Cost of permanent staff (labour)					
	% on Flowers				(0-100)
Owner/operator allowance		Generally \$30 000			
	% on Flowers				(0-100)

**Total permanent labour cost of flower enterprise** \$

% of casual labour for individual crop					
% permanent labour for each individual crop					
% of operator labour for individual crop					

**E. OVERHEAD (FIXED) COSTS**

*important to use same % for flowers each year*

	<b>Total</b>			
Repairs and maintenance				
- sheds, yards, fences, land, irrigation				
- plant & equipment				
General insurance				
Administration				
Rates, land lease costs				
Fuel and oil				
Electricity & gas				
Depreciation				
Equipment lease				
Other				
<b>Total Overheads</b>				
% of flower OH for individual crop				

Obtain the information from your records and use a copy of the above tables to help order it. You will need to apportion the cost of overheads to any other farm activities.

Then use the following table as a means of calculating the different indices you can compare with your neighbour.

### BENCHMARK - SUMMARY

ID Number 0

					Average
Plants per ha					
Plants per metre					
Income \$ per ha					
Income \$ per plant					
<i>Income \$ per stem</i>					
<i>Income \$ per \$ labour</i>					
Total Cost \$ per ha					
Total Cost \$ /m <sup>2</sup>					
Total Cost per stem					
Labour \$/ stem					
Labour \$/ha					
GM \$ /ha					
GM \$ /stem					
GM \$ /metre					
Stems per metre <sup>2</sup>					
kg/ha					
kg/metre					
GM/kg					
kg/\$labour					
kg/plant					

## Review and analysis – Gross margins

### *Banksia Hookeriana*

	Grower One		Grower Two		Grower Three		Grower Four		Grower Five		Average		
<b>Income</b>													
Total area (hectare)		2		2		2		2		2		2	
Average stem per hectare		60,000		70,000		58,000		40,000		60,000		57600	
Total Production		120000		140000		116000		80000		120000		115200	
Average price per stem		\$0.41		\$0.43		\$0.39		\$0.38		\$0.39		\$0.40	
Grade 1	Proportion	60.0%		70.0%		50.0%		50.0%		50.0%		56.00%	
Grade 2	Proportion	30.0%		20.0%		35.0%		30.0%		40.0%		31.00%	
Grade 3	Proportion	10.0%		10.0%		15.0%		20.0%		10.0%		13.00%	
Grade 1	\$0.50	\$36,000.00		\$49,000.00		\$29,000.00		\$20,000.00		\$30,000.00		\$32,800.00	
Grade 2	\$0.30	\$10,800.00		\$8,400.00		\$12,180.00		\$7,200.00		\$14,400.00		\$10,596.00	
Grade 3	\$0.20	\$2,400.00		\$2,800.00		\$3,480.00		\$3,200.00		\$2,400.00		\$2,856.00	
<b>Total income</b>		<b>\$49,200.00</b>		<b>\$60,200.00</b>		<b>\$44,660.00</b>		<b>\$30,400.00</b>		<b>\$46,800.00</b>		\$46,252.00	
												Average	
<b>Costs of Production</b>	<b>Supplies</b>	Labour	<b>Supplies</b>	Labour	<b>Supplies</b>	Labour	<b>Supplies</b>	Labour	<b>Supplies</b>	Labour	<b>Supplies</b>	Labour	
Land Preparation		90		90		90		0		90		0	72
Replacement plants Planted 10%	350	40	450	40	350	40	0	0	350	40	300	32	
Pruning		160		220		160		160		160		0	172
Weed Control	150	150	150	150	150	150	150	150	150	150	150	150	150
Disease Control	80	100	120	120	80	100	80	100	80	100	88	104	
Insect Control	40	0	80	20	40	0	40	0	40	0	48	4	
Tissue/soil test	150	50	150	50	0	0	150	50	150	50	120	40	
Fertiliser	450	150	500	150	600	150	450	150	450	150	490	150	
Irrigation		500		400		600		500		500		0	500
Fuel	1000		800		1200		1000		1000		1000		0
Harvest/post Harvest	1000	16,000	1000	18,000	1000	16,000	1000	14,000	1000	14,000	1000	15600	
	3220	17240	3250	19240	3420	17290	2870	15110	3220	15240	3196	16824	
<b>Total Cost</b>		<b>20460</b>		<b>22490</b>		<b>20710</b>		<b>17980</b>		<b>18460</b>		0	20020
Gross Margin		28740		37710		23950		12420		28340			26232
Gross Margin per Ha		14370		18855		11975		6210		14170			13116

The example benchmark result table is simplistic but illustrates some of the features and benefits of the technique. The area planted and the age of the crop is assumed to be the same.

The table compares five growers. Obviously there is a very large difference in the total income for the different growers based both yield and grade out; the prices have been kept the same. There is also a difference in the total costs of the different growers. This results in a significant difference in gross margin ranging from about \$6,000 to \$19,000.

We can make the assertion that grower four could benefit from adopting some of the best practices being used by grower two. Grower four has a poor grade out and very low yield. One of the obvious features is that grower four has not replanted to fill gaps. He has saved a small amount of money on pruning and harvest and post harvest costs, but he may be over watering and not controlling insects as well, his grading operations are ordinary.

Grower two is achieving his results because he has replanted with selected varieties and high quality plants; takes a little bit more care with his pruning; controls disease and insects better; uses optimum fertiliser rates based on soil tests; uses tensiometers to monitor irrigation which results in less water being applied and high yields as well as quality; he builds on this by ensuring his lines are uniform and present well.

Grower five and grower one both carry out the same operations but not at the level of grower two. However the difference between grower five and grower one is the amount of labour in the post harvest operations. Grower one devotes more time to ensure his lines are uniform, trims to uniform length and also grades by colour -the result is more of his product is in grade 1.

The comparison between different growers is a powerful tool to enable improvement to your own enterprise. It is very easy to spot what area of the production system you have your strengths and your weaknesses. This allows you to focus on those areas in which you can make the most improvement to your profitability.

An example could be the grower not using improved irrigation techniques compared to a grower using those techniques - the difference being increased stem length and quality, reduced cost of irrigation water use (26% less) and productivity 66% greater.

### **Benchmarking beware (E Skipworth)**

- No single indicator should be used in isolation. Each is relative to others and should be analysed on a whole of farm basis
- Is your farm similar to those used in the benchmarking exercise?
- Some benchmarks may be too high for you to achieve. For example; a benchmark taken from the top 10% of the industry. This is difficult for all to match and not achievable by everyone.
- Farm size has an impact on figures
- Farmers farm for different reasons. For example, hobby, lifestyle or business

### ***Deciding and making changes***

The benchmarking results can quickly indicate if gross margins are adequate and returns are covering cost. If you have compared crops on the farm the results will have indicated which are performing best (allow for age). You may even have compared varieties of the same crop and obtained an indication of relative profitability.

The results allow some decision on which varieties to grow, whether you need to change marketing approach etc. When you make changes you would be able to track the impact and improvements.

However, the real benefits come when you compare your results with those of others producing the same product in similar situations. Then you will see how your irrigation levels compare and the impact of fertiliser on performance.

Ideally discussion of the results with others and or with an outside agent can quickly highlight areas of improvement that all would benefit from.

This may lead to bringing in experts on various areas to show the latest techniques. With all this knowledge you can develop best practice on your property.

Review of the new system or production change can occur with a future benchmarking session and appropriate changes made.

The likelihood of on-going discussions with your fellow benchmarkers have the potential to lead to rapid improvements.

But remember that changes are not always positive and your need to ensure you get good independent advice to balance your thoughts.

### **The rewards**

The benefits of being involved in a benchmarking activity are clear. Growers are likely to increase their profitability, their productivity and the quality of their product.

- You gain a better understanding of your whole farm performance
- It identifies weak links in your farms performance
- It can make your farm more profitable
- It allows an improved allocation of resources
- Improves financial management
- It gives an understanding of the linkages between production and financial performance
- Allows analysis of crop inputs and their effect on yield and profit
- Allows accurate goal setting
- Allows group discussion and comparison.

(Eric Skipworth, Waxflower Conference)

The end reward is less uncertainty and the ability to confidently make decisions on changing production, introducing new equipment or even deciding to leave the industry.

## 8.3 Appendix: Benchmarking literature review

### Literature review benchmarking

A short report has been produced by RIRDC SR N0.74 that looks at the benchmarking and related studies carried out or being undertaken in Rural Australia. This lists many programs that have used benchmarking or are using benchmarking. There are no flower related benchmarking studies in Australia listed. Subsequent literature searches by GrowSearch and the Library of the Department of Agriculture also found no direct reference to benchmarking in floriculture.

Some work has been carried out in the nursery industry suitable for wholesale and retail operations. Paul Watkins at the 2002 6<sup>th</sup> Australian Wildflower conference discussed the benchmarking of Florists.

There have, in recent years, been a number of benchmarking projects carried out in horticulture and other agricultural enterprises which will provide useful information for developing this project. They will be discussed later in this document.

#### *What is benchmarking*

Benchmarking has been used by many industries and companies to compare themselves against others and their competitors. Benchmarking has been defined and redefined but is suggested by the authors of the RIRDC review (Worsley and Gardener, 1996 RIRDC SR N0. 74) as “a process of effective decision-making that results in continuous improvement of management ‘practice’ and operating ‘process’ within the business”.

Standards Australia in its handbook “Benchmarking Explained – A guide for undertaking and implementing benchmarking” draws on many other references to suggest benchmarking is:

“The continuous process of measuring our products, services and practices against either our toughest competitor or those companies renowned as leaders”

and

“Benchmarking is the search for industry best practices that lead to superior performance”

and

“Benchmarking is comparing your organisation against another organisation on some aspect of performance-process, product or service, in which the other organisation excels- with the objective of finding ways you can improve your performance”.

Standards Australia 1996 refer to the work of Spendolini who emphasises that benchmarking is a continuous learning process and is not a one off event nor is it just copying others.

They go on to suggest that benchmarking “ is a process of investigation and learning to enable your organisation to compare and perhaps, improve activities.”

These examples of definitions for benchmarking are generally all high order and refer to larger companies. The flower grower may feel a little intimidated but this tool/process is equally applicable to any sized flower grower.

*Benchmarking is comparing the profitability/efficiency of your flower production against the performance of other growers and thereby learning how to improve your performance. This can be on a farm, crop, greenhouse or variety basis.*

### ***What type of benchmarking?***

Standard Australia 1996 refer to a number of different types of benchmarking these include “internal”, “external -competitor, functional, industry, customer, supplier”, “best practice” and “generic”

Their discussion revolves mainly about companies but the differentiation has some benefit.

Internal benchmarking would be the comparison between two farms in the same farming company, or between varieties of flowers on the same farm, it will be useful but will only make large differences when there are significant performance differences between the activities. The advantages are that business retains the data and it is what you want to collect. The disadvantage is that the business does not gain from other business innovation.

External benchmarking is the usual preferred way to benchmark.

This may be comparing with **competitive** groups i.e. between growers but on issues where they are comfortable to provide data. For example where they can compare irrigation, fertiliser efficiency and production but not marketing

Benchmarking can also be done on a **functional** basis where businesses may be in different industries but they want to compare areas that are common, for example you may compare the efficiency of labour use in the flower industry with labour use in the fishing industry.

**Industry** benchmarking is regularly done to determine the state of the industry, either on cost of production, production, yield etc., these are often used for strategic rather than individual use.

**Customer benchmarking** was highlighted- “It is surprising how many organisations do not know what their customers really want. There is frequently a tendency to rely on the opinion that ‘we know what the customer wants, so we don’t really have to carry out any surveys”

Similarly it is possible to **benchmark suppliers** of inputs into the industry or enterprise on performance,

**Best practice benchmarking** is considered more difficult but is often referred to in agricultural industries as a way to improve production. Best practice is a “moving target” and continual improvement is important.

**Generic benchmarking** relates to comparing to related industry. In the flower industry this could be watching the European retailers and their interest in improved environmental management of their suppliers as this trend will impact on our exports and will also filter to our retailers.

### ***How to benchmark***

Again Standards Australia 1996 suggests, and quote King, Moran and Niall, that the steps are:

- Analyse process or operation and decide what is to benchmarked
- Define and measure selected process and formulate the benchmarking plan
- Select benchmark partners and agree on parameters
- Carry out benchmarking
- Analyse results and apply to your process
- Recalibrate operations and measure results and effects.

They also suggest that anyone thinking about doing benchmarking needs to:

- Know what is to be benchmarked
- What is to be measured?
- How are results to be analysed and used?

That suggests that the operation (in this case the flower enterprise) needs to be very well understood in all its components. With some understanding of which areas are likely to benefit from improvement.

In the case of flowers it may not be useful to benchmark the number of cultivations prior to planting waxflower when it only differs by one or two operations and only occurs every 10 years. However, the yield and labour used in the enterprise is a major determiner of profitability and impacts the enterprise each day.

The partners are clearly the growers and the data analysis organisation.

The results are analysed to provide an useful and confidential comparison and growers are likely to apply the results to their operation.

### ***Reviewing some horticultural benchmarking reports.***

#### *BankWest benchmarks*

The Western Australian based BankWest has carried out benchmarking on broadacre farms for a number of years. In 2001 they compare 480 farm businesses, this is considered the largest of its kind in Australia. They use their network of bank managers in regional locations to access growers. They use the cash flow actuals for the year, the statement of assets and liabilities, and farm details and farm production details. Inputs include area of farm, area of production, rainfall, labour, fertiliser use, yield and quality.

The results are calculated in the Bankwest central office using Microsoft ® Access and Microsoft ® Excel. Participants receive an individual summary of their benchmarked data and it is compared with the district. Publication of the information is done on a regional basis both on a whole farm and cropping analysis. Enterprises are clustered into top 25% other 75%, lower 25% and average. The data compared include average farm size, area cropped, assets (\$ per hectare), debt (\$ per hectare), equity %, return to capital, income (\$ per hectare), costs (\$ per hectare), profits (\$ per hectare), yield per hectare.

This scheme relies on the minimal input by the grower over and above information normally prepared for the bank.

This document indicates useful ways to protect privacy and confidentiality of the participants.

#### *Australia Horticultural Corporation benchmark reports*

In 1995 Australia Horticultural Corporation produced a series of reports which benchmarked five industries. Industries studied were oranges, table grapes, macadamia, broccoli and carrots.

All five reports are similar in their structure and content. They are industry-based comparisons between industries in different countries relative to the Australian industry. They do competitive analysis in the market, they look at competitive positioning of different components of the industry such as production costs, as well as industry structure and relationships. The reports have a heavy emphasis on the market requirement and market perceptions. They identify which areas have best practice for the different components of the industry.



The report concludes with a series of benchmarks for each section they studied, for example marketing "the measure is a percentage of non USA consumed macadamias marketed by industry participants". The benchmarking is Australia with 64 percent.

For processing "the measure is the direct processing costs which is influenced by the actual recovery compared to the laboratory results". The benchmark is the best in each country at AUD\$0.54 per kg kernel.

The reports are useful for those industries studied to identify some of their weakness and provides suggestions as to where to look for the better practices with which to improve.

For example, the Broccoli study looks closely at the labour costs and cool chain management and refers to the Californian model as being a benchmark.

The reports are not directly beneficial to this project as we are targeting farm production and profitability. It goes without saying that it would be useful to do a study of all the major flower growing regions in the world on the same basis as the reports by the AHC.

*Macman: recording and comparative analysis software for macadamia. Report to HRDC, MC97002*

Mulo (2000) reports on the discussions and development off the products produced by this project on macadamia, to allow growers to receive information and produce graphics and tables of outputs. It is based on a database system which can be linked with spreadsheets. It allows recording of farm – block, - planting descriptions, employees and contracts, detailed pest information, chemical product inventories, jobs, postharvest handling, factory results, variable costs, leaf and soil analysis, pest monitoring, water quality, weather records, and cropped phenology.

The project also produced wall charts and farm diaries.

Time constraints resulted in small proportions of growers using the database, however, many use the diary. The project provided extensive training support.

The software is obviously very comprehensive and exceeds the needs of the flower benchmarking project. However, the value of having hard copy templates or diary is obvious. The report reinforces the need for any recording mechanism to be simple.

*Financial performance benchmarking for the retail and wholesale nurseries throughout Australia, a report by Ian Brown, for HRDC*

This report showed the project carried out a number of activities within the nursery industry including: distinct benchmarking comparisons of financial returns and costs for 1997, 1998 and 1999; a series of training activities designed to show nursery operators how to apply the figures within the business and training of the nursery industry development officers. It produced several papers, and spreadsheets to perform the calculations and make comparisons for individual operators.

Software provided to retail and wholesale nurseries allows the individual operators to enter their own data and compare that to in-built averages for the industry.

This report is only a summary and outline of the process and contains very little detail.

Examination of the software available on the Web indicated useful products and easy-to-use. The content of the software indicated this was produced after the event and after the field benchmarking.

The software could be a model for one that can be used in the flower industry, however, this will need to be developed in another project project.

### *Citrus - Practices for profit – Kit, Citrus Industry Benchmarking 2000 Grower Kit*

This is an excellent set of products. The Citrus - Practices for profit- kit has a strong component of adult learning, introduces the reader to the principles behind best practice and then goes on to outline what could be considered best practice. It uses results from previous benchmarking to illustrate the financial results of introducing best practice.

The package compared numbers for low, medium and high income systems. They use cluster analysis to compare older and younger properties and also larger and smaller properties. The best practice component includes checklists of most of the practices carried out on the citrus property with suggestions on how they can be filled out. Completing the checklists will allow the grower to analyse their property management.

Many of these principles are already included in the Draft Environmental Best Management Guidelines that the WA Flower Industry is considering.

They introduce the concept of linking practices to profit and also introduce the business planning cycle. They show where benchmarking and analysis of the data fit in. Checklists of the typically best practices are included. These have sufficient internal documentation to allow easy completion.

The “Citrus industry benchmarking 2000 grower kit” contains sections on BizCheck for citrus and cost of production and gives descriptions of the terminology used. It covers many different components of the farm enterprise decision tree including the family goals and lifestyle. BizCheck indicators provided things like number of households on the property, tonnes citrus sold, number of days of holiday the family takes and farm operating surplus,

The kit also talks about the concept behind cost of production and provides a flowchart of the cost structure. There is a section on the cost of production calculations and how they need to apportion operating costs how they handle labour. They compare normalised tree (tree equivalents) yields where they talk about mature trees and young trees are only considered at 50% of a mature tree. They also indicate they use standard interest rates to enable comparisons to be made on financial results.

There are series of Cost of Production input sheets which detailed things like areas of irrigation, area of trees planted, number of tree, how much sold and proportions to juicing, the age structure of tree. They have separate inputs sheets for different varieties (Valencia and Navel reflecting the marketing differences). The sheets have categories for the normal operating costs but labour costs are broken down to picking, casual and permanent. It also deals with overheads and apportions percentages to different crops.

Citrus practices for profit Kit and the BizCheck cost of production Kit provided good guides on dealing with the flower industry. Unfortunately the flower industry is more complicated because of the number of varieties and crops grown.

### *WoolPro – Benchmarking the sheep and wool enterprise.*

This is a published document and is a hard copy version of a spreadsheet. It concentrates on benchmarking the production and financial profitability of the livestock operation but is linked to the whole of farm overhead costs.

The spreadsheet provides an insight into the construction of such a template.

### *Benchmarking florist shops*

Paul Watkins at the sixth Australian wildflower conference in 2002 spoke about a project he'd been involved in where they benchmarked florist shops between 1997 and 1999.

He provided a checklist for higher profits that showed the steps involved in this particular benchmarking activity. In comparison tables the florist are grouped on business income, for example group one was less than \$120,000 group three was over \$200,000 and also had a category where little employed external labour was used..

The table used income, gross costs of flowers, costs such as advertising, showrooms, telephone and labour for comparison purposes. It related income, profit and overheads on amount per dollar wages. Comparisons between these tables and the florist own figures illustrate where his costs are disproportionate to that of its competitors. Overcoming the differences leads to extra profits.

As labour is also a major cost in the production and harvesting of flowers using this type of comparison could lead to useful improvements.

#### *Other Reports with useful information for flower benchmarking*

There are a number of good publications produced in various states around Australia and cover cost of production and gross margins for flowers. These range from development budgets to simple gross margin tables. A number of these also contain large volumes of information useful for best practice production. Some examples are "Growing wildflowers for profit – Cass, A *et al.*", "Wildflowers the beginning- Slater and Faragher", "Rice flower -production guidelines for growers – Beal, P *et al.*" and "Should I grow wildflowers - Beal, P. *et al.*"

A number of other articles have specific crop gross margins and these are included in the references.

#### **Summary**

There have been no benchmarking projects identified carrying out benchmarking on flowers. Extensive literature searches have failed to identify any.

There are some good examples of horticultural industry benchmarking on an industry basis. These are useful for inter industry comparison and provide an incentive for the flower industry to follow suit.

Several very useful benchmarking and best practice projects for the citrus industry and the Wool Industry as well as the format used by the Bankwest benchmarking survey are helpful. They help to design the process for this project, the input formats, the data to be compared, the spreadsheet construction, the analysis and presentation formats as well as the adult learning required to adopt best practice in the Flower Industry to improve profits and production.

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