

**SELECTING HORTICULTURAL CROPS ON THE**  
**NORTH COAST**  
***(CLARENCE to the TWEED)***

**On Behalf of:**

**Northern Rivers Regional Development Board**

**Northern Rivers Area Consultative Committee**

**NSW Department of State and Regional Development**

**By**

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# **SELECTING HORTICULTURAL CROPS ON THE NORTH COAST**

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# **SELECTING HORTICULTURAL CROPS ON THE NORTH COAST** **(CLARENCE to the TWEED)**

## **1. INTRODUCTION:**

Beautiful scenery, reliable rainfall, a mild subtropical climate and a relaxed lifestyle have attracted many people to the North Coast of New South Wales. Many have also been attracted by the areas' ability to grow a wide range of horticultural crops, probably the most diverse horticultural region in Australia.

While there have been many success stories of individuals and industries establishing themselves in the rich horticultural mix of the region, they have not been universal.

The most common reason for failure has been the lack of a thorough objective assessment of the realistic market prospects for the crop or enterprise, and the failure to adequately plan the resource inputs to match the lifestyle expectations with the work commitment of the enterprise.

This publication introduces the concept of a multi-faceted or holistic approach to crop selection. The need for such a publication arose from the North Coast Intensive Horticultural Industry Study completed in September 1999, which was commissioned by NSW State and Regional Development, the Northern Rivers Regional Development Board and the Northern Rivers Area Consultative Committee.

Authors of the study, John Baker, (Produce Marketing Australia), Tony Biggs (Cardinal Horticultural Services) and David Peasley (Peasley Horticultural Services), produced the concept of an Industry Crop Profile to help in their assessment of the future prospects for the horticultural industries of the region.

By extending the crop profile technique through grower seminars which followed the release of the study, a need was expressed among prospective, new and existing growers, and financial institutions to produce an easy to use, concise and objective method of evaluating various horticultural crops.

Crop profiles are a 'snapshot in time' of a range of horticultural crops presently in the region. They provide a rating score to assess the five basic criteria for selecting an enterprise.

1. What are the market prospects for the product?
2. Is this a good place to grow the product?
3. Can this industry be sustained on environmental and economic criteria?
4. Can we add value to the product?, and
5. Can we produce it better than other areas of Australia?

Achieving a high rate of return on investment may not be the major objective of establishing a horticultural enterprise in this region. Along with the suitability of the region to produce a diverse range of crops is diversity in the reasons why people enter the horticultural industry and the expectations and attitudes they bring with them.

Hopefully these crop profiles will present a more concise and informative basis for enterprise selection.

## **2. HORTICULTURAL OVERVIEW:**

The latest Australian Bureau of Statistics (ABS) census figures showed that the value of fresh market horticultural crops in the Northern Rivers region (Clarence to the Tweed) was \$83 million.

Fruit production accounted for \$75 million and vegetables \$8 million.

Macadamias had the highest individual crop value with \$35 million, nut in shell (NIS), which was 43% of the regions total horticultural value. Bananas were the next important crop with a value of \$21 million (25% of total horticultural value).

Three quarters of the regions vegetable production is located on the Cudgen-Duranbah plateau in the Tweed.

The banana and vegetable industries have dominated Northern Rivers horticulture for most of this century but there have been dramatic changes over the last 20 years. Over half of the nation's bananas were produced in this region until the 1960s while the thriving vegetable industry was a major producer of tomatoes, peas and beans for major metropolitan markets until the 1980s.

Reliable rainfall, a maritime subtropical climate and the rich volcanic soils of the major production areas of the Tweed, Brunswick and Richmond Valleys provided the ideal conditions for vegetable growing over the cooler months, while warm, north-east facing foothills of the region supported much of the nation's banana industry.

However, improvements in transport, crop mechanisation and the increasing role of major supermarket chains results in expansion of these industries into central and north Queensland coastal areas. The year-round production, higher productivity and economies of scale through large, highly mechanised farms located on flat land, has seen the comparative advantages enjoyed by the Northern Rivers quickly eroded during the last 20 years.

The banana industry has been sustained in the Northern Rivers largely because of the destructive losses caused by cyclones in producing areas of North Queensland. The resultant buoyant high price periods allowed the local industry to capitalise until plantations recovered in the North.

Further expansion of banana growing in North Queensland during the 1990's however, has seen this 'cyclone saviour' effect diminish for the Northern Rivers industry.

Vegetable industries also declined in the face of large scale and year round production in Queensland central coastal areas (Bundaberg and Bowen), and other regions of Australia, where it has been possible to mechanise using broad-acre technologies and economies of scale, thus rendering the local, Northern Rivers industries uncompetitive.

The vegetable, banana and dairying growing areas of the rich volcanic soil plateau of Cudgen/Duranbah of the Tweed and the Alstonville plateau of the Richmond, were gradually replaced by the emerging avocado industry in the 1970s and 1980s and the rapid expansion of the macadamia industry, in the 1980s and 1990s.

Other crops emerged to take advantage of the favourable microclimate of the region and the market window for a range of crops which were being grown on a larger scale in other areas of Australia or overseas.

Low-chill stone fruit, hydroponic vegetables, custard apples, sweet potatoes, zucchinis, passionfruit, lychees, mangoes, limes and mandarins emerged as commercial industries in the

1970s and 1980s, enjoying a comparative advantage for seasonal production and/or microclimate.

As the production pressure increased on the avocado industry in the 1990s due to the increasing plantings in Queensland, the Lower Murray region of NSW and competition from imports, from New Zealand, the Northern Rivers region began to lose its seasonal production advantage.

The rise and fall of a range of horticultural industries in the Northern Rivers region is indicative of the region's versatility for producing a wide range of products.

This dynamic pattern is continuing with the macadamia industry, now the 'anchor' for the region's horticulture, replacing bananas and vegetables.

Emerging crops, such as coffee, tea, native foods, herbs and bamboo, are presently finding their place in the diverse horticultural mix of crops in this region.

The region has previously seen new crops, such as babaco, pepino and guava, emerge and disappear, driven by over-zealous promoters operating without adequate agronomic or market research.

Closer settlement of the region and increased lifestyle farming has brought increasing pressure on traditional industries and production systems to be more environmentally sustainable and compatible with the rapidly increasing urban expansion into agricultural areas. As a result, new production methods, reduced pesticide use, increased use of biological control and natural production systems are now very much a feature of the future direction of horticulture in the region.

The investor-led/tax-driven macadamia industry of the 1970s has developed into a vibrant international marketer in the 1990s, contrasting with the emerging native foods industries which is suffering the growing pains of all new industries, - industry fragmentation, lack of market focus, inadequate R&D, lack of product specifications and no quality control.

Established industries such as the banana industry, are undergoing major changes to retain market share by growing new varieties better suited to the sub-tropics, using less pesticides, and producing a tastier banana of a convenient size to meet consumer requirements.

Changing tastes, demographics and the increasing cultural diversity of Australia is enhancing the potential of the region to produce an ever increasing range of food products for both the fresh and value added markets, regionally, nationally and for export. However, major limitations currently exist because of the lack of a cohesive or co-operative approach by growers to marketing, and centralised packing, and because of insufficient, collective support by industries and government agencies to a regional identity consistent with the lifestyle, tourism and environmental attributes of the Northern Rivers.

### Farming Activities

Primary production in the Northern Rivers region has been categorised as full-time commercial, part-time commercial with supplementary off-farm income or hobby farming. Full-time commercial farmers must derive their entire incomes from their activities whereas there are other producers who supplement income from their main occupation by growing horticultural crops. Hobby farmers have frequently retired from previous occupations, often professional positions, and invested in horticulture in order to maintain interests and activity.

There are also examples of investment-scheme and absentee-owner farming operations in the region. Investment-scheme horticulture operations have not generally performed well in

Australia, usually due to poor organisation or management. New schemes are presently being developed in the region for coffee and olives. The macadamia industry is the exception with local staff and consultants managing the properties for city-based investors.

Some commercial farming operations concentrate on single enterprises, such as passionfruit or herbs, which require year round attention. Other crops, such as custard apples and mangoes, can be managed with seasonal inputs.

There are examples where growers produced two or more crops, which have different seasonal labour profiles, such as low-chill stone fruit and mandarins. There is at least one grower who produces mandarins and mangoes as secondary crops in order to retain labour for his major low-chill stone fruit enterprise.

Some crops grown in the Northern Rivers region produce reliably, such as the sweet potatoes grown by vegetable farmers at Cudgen, whereas others, such as mangoes, are on the climatic limits for satisfactory production and, hence, are speculative, especially near the coast.

### **3. NATURAL RESOURCES:**

#### Topography

The Northern Rivers region combines relatively flat coastal areas with rolling hillsides and steep slopes in inland locations.

Flatter, coastal areas are used mainly for broadacre crops, such as sugar cane, which is dependant on mechanisation. The flatter inland areas, such as Casino and Kyogle, are used for broadacre cropping with maize and soya beans.

Most of the horticultural crops are grown on the slopes or natural terraces which require careful management to avoid soil erosion. It is in these areas that the most desirable red, volcanic, krasnozem soils are found.

Perennial crops, such as tree fruits, macadamias and coffee, pose fewer erosion problems since the inter-row areas are usually grassed or sown with other cover crops.

Soil erosion is much more likely with short-term vegetable crops, particularly during the establishment phase.

The correct choice of slopes and aspects has an important influence on determining the most appropriate micro-climate for crops. North easterly slopes minimise risks of frost damage and provide warmer growing conditions. Wind damage is reduced through the correct choice of slope and aspect, although crops in most locations benefit from the use of windbreaks.

#### Climate

Diversity of climatic conditions is a major reason why such a wide range of horticultural crops can be grown in the Northern Rivers region.

Although the region is quite compact from north to south, there is a significant difference between the climatic suitability for crops in different areas. Sub-tropical fruits are better suited to the coastal and hinterland area closer to the New South Wales/Queensland border.

Uniformly mild and wet conditions usually occur in the flatter, coastal areas where frost can also be a problem.

Inland areas are hotter and drier in summer but are more frost prone, especially in the lower and more southerly locations.

The Northern Rivers region is most appropriately classified as sub-tropical although the correct choice of protected slope and aspect allows many tropical crops to be grown.

### Soils

The region has a diverse range of soil types, which need to be carefully matched with the crops being grown.

Macadamias and avocados are frequently planted on the red krasnozems but there are only limited areas of these sought after soils, which are mainly confined to the Richmond and Cudgen-Duranbah plateaux. Other soil types include self-mulching clays, poor shallow sands and shales, clay podzols and pockets of coastal peats.

Failure to match crops with the most appropriate soil types can cause management problems, especially when crops which need vegetative growth to be controlled are grown on deep, fertile soils. Excessive vegetative growth in mangoes and custard apples is likely to reduce flowering and fruit production.

### **4. GUIDELINES FOR USING THE INFORMATION:**

Data for each of the Crop Profiles has been sourced through interviews with relevant key industry representatives, who have been identified at the foot of each Profile.

Using the score rating table on each profile provides an objective picture of each of the selection criteria and a total score out of 50.

The table should not be used solely as the basis for crop selection. Crop profiles should be used in conjunction with other cultural and financial information available on each crop. The Agrilink Horticulture Series produced by Queensland Department of Primary Industries (DPI) provides excellent practical information to help in crop selection. Other publications are available through NSW Agriculture and Qld DPI information centres, local libraries and the Internet.

There are overriding considerations at the bottom of each profile which should be taken into account. These may include for example, a high or constant physical labour commitment for everyday harvesting in the case of passionfruit or that high levels of management and marketing skills are required as for blueberries or that fruit bats are a major problem and high cost netting is essential in the case of lychees and stone-fruit.

The level of maturity of the particular industry is also important when using the profile scoring information. 'New and emerging' industries invariably have optimistic scores while the 'young' and 'mature' categories tend to be more realistic in their outlook or prospects for the future, having been tested in the market place as production volumes increase.

To assist in this area, the **mature** industries are -

- Avocados
- Bananas - Cavendish and Lady Finger
- Papaws
- Passionfruit
- Sweet Potatoes
- Tomatoes
- Zucchini

**Young** industries include -

- Blueberries
- Custard Apples
- Hydroponic Lettuce
- Limes
- Lychees
- Mandarins
- Mangoes
- Pecans
- Stone fruit - low chill
- Tea

**New and emerging** industries are -

- Clumping Bamboo
- Bananas - Goldfinger
- Coffee
- Culinary Herbs
- Lemon Myrtle
- Olives
- Other Native Foods
- Pecans

Comparing profiles within these categories provides a more accurate assessment than comparing between categories.

These crop profiles are the first to be produced and published. It is the intention of the authors and the Northern Rivers Regional Development Board (NRRDB) that they be updated on a regular basis - preferably annually or biennially to provide an accurate moving picture of horticultural industries in the region.



**5. CROP PROFILES:** Avocados to zucchinis.

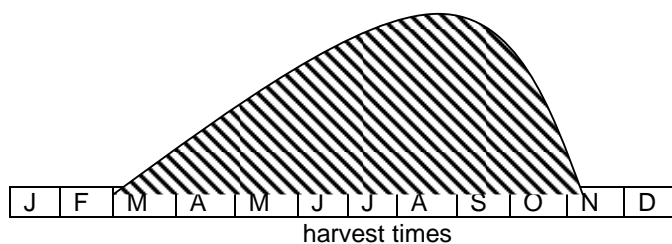
**CROP PROFILE: AVOCADOS**

• **PUBLISHED DATA:**

ABS 1996/97

Total trees 79,748  
Production: 2,290,148kg  
Value: \$4,170,457  
No. of holdings: 187

**DERIVED FROM INDUSTRY:**



• **INDUSTRY COMMENTS:**

- Excess capacity of pack houses on the Richmond - need for group packing/marketing.
- Lack of standardisation of product handling.
- Aggregation of farms likely in the future.

- **Region as a proportion of national domestic production: 12-17%**

• **COMPARATIVE ADVANTAGES** (industry determined):

- Seasonal production window

• **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3.5</b>	<b>2</b>	<b>2.5</b>	<b>2.5</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>2.5</b>	<b>27</b>

• **OVER-RIDING CONSIDERATIONS:**

- **Capital investment will drive industry developments**

**Industry Source:** Keith Johnson, Avocado Marketing Company.

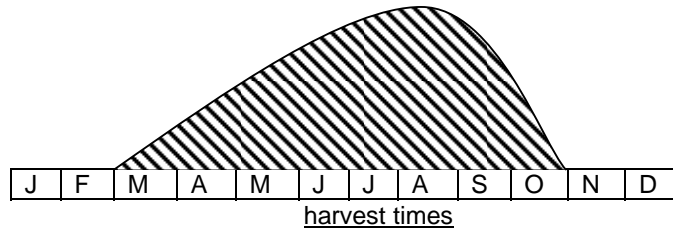
## CROP PROFILE: AVOCADOS

- PUBLISHED DATA:**

ABS 1996/97

<u>Total trees</u>	79,748
<u>Production:</u>	2,290,148kg
<u>Value:</u>	\$4,170,457
<u>No. of holdings:</u>	187

- DERIVED FROM INDUSTRY:**



- INDUSTRY COMMENTS:**

- Developing export markets is essential- (USA?) to keep domestic prices high (viable)
- **Region as a proportion of national domestic production: 22%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Seasonal production window (Sept - Nov)

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3.5</b>	<b>1.5</b>	<b>5</b>	<b>2.5</b>	<b>4</b>	<b>1</b>	<b>4</b>	<b>3.5</b>	<b>0</b>	<b>1</b>	<b>26</b>

- OVER-RIDING CONSIDERATIONS:**

- A 'lifestyle' crop
- Aggregation of packing facilities - satellite pack houses, are becoming necessary because of QA requirements (costly for individual growers). Growers become "Approved suppliers' for QA outlets.

**Industry Source:** Geoff Betts, NSW Avocado Growers Association.

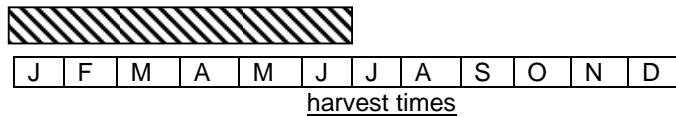
## CROP PROFILE: CLUMPING BAMBOO

- PUBLISHED DATA:**

Nil - New crop

- DERIVED FROM INDUSTRY:**

- Approximately 200ha planted by late 1999.
- 1000ha planned for planting near Cairns.
- Expected yield of shoots - 10 tonnes per ha.
- Australian market for shoots - around 8000 tonnes.
- Forecast 2000 tonnes within 5 years valued at \$12 million.



- INDUSTRY COMMENTS:**

- Production and marketing need to be controlled.
- 80% - 90% of existing plantings are in the Northern Rivers, but none are yet producing.
- Export potential because of counter-seasonality to China, Taiwan, etc.
- Three - four years from planting for the first crop of shoots.
- 7 years from planting for the first crop of timber

**- Region as a proportion of national domestic production: 80%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Labour.
- Climate.
- Proximity to markets.
- Infrastructure.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>43</b>

- OVER-RIDING CONSIDERATIONS:**

- **Dual purpose crop - shoots and timber.**
- **Unproven crop - agronomically and markets.**
- **Everyday harvest commitment - January to July.**
- **Water licence availability a constraint.**

**Industry Source:** Victor Cusak, 'Bamboo World'.

## CROP PROFILE: BANANAS

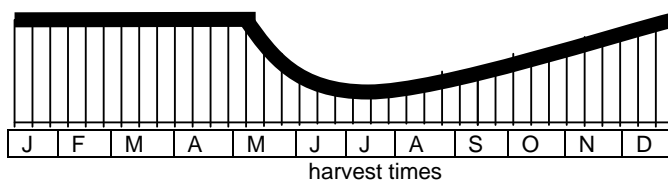
• **PUBLISHED DATA:**

ABS 96/97  
NOTE: (These figures do not include  
Coffs Harbour and Nambucca Districts)

Area: 1702ha  
Production: 14,859 tonnes  
Value: \$20.5 million  
No. of holdings: 302

**DERIVED FROM INDUSTRY:**

- Value 1998/99 - \$32 million (gross)
- Production 1998/99 - 25,623 tonnes.
- No. of growers 1998/99 - 568
- Area 1998/99 - 1971ha.



• **INDUSTRY COMMENTS:**

- Need to convince supermarkets/retailers of value of sub-tropical varieties.
- Currently about 280 growers of varieties other than cavendish
- Need for industry to learn how to grow and ripen subtropicals which require different conditions.
- Need to encourage growers to grow subtropicals.
- Plant material expensive at present

- **Region as a proportion of national domestic production:** Cavendish 8%, Goldfinger 85%, Lady Finger 80%

• **COMPARATIVE ADVANTAGES** (industry determined):

- Subtropical conditions ideal for varieties such as Goldfinger.
- Less disease pressure than North Queensland - less pesticide use.
- Transport costs lower.
- Better labour market.
- Less prone to cyclones.
- Close proximity to high population centres - local sales and direct to public.
- Taste and convenient size preferred by consumers.

• **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

(Score: 0=poor; 5 = excellent)

KEY: CAV = Cavendish. G.F. = Goldfinger. L.F. = Lady Finger

	MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
	Dom	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			
CAV	2	0	1.5	3	4	2	2	2	1	1	18.5
G.F.	4	0	5	4	4	3	4	3	2	5	34
L.F.	4	0	5	1	4	3	3	4	1	3	28

**OVER-RIDING CONSIDERATIONS:**

- Lack of economies of scale, inconsistent quality and supply under present structure.
- Marketing plan required for subtropical varieties.
- Panama disease a major threat to Lady Finger industry survival.
- Australian banana production dominated by Far North Qld Cavendish. - long lines, consistent quality.
- Northern Rivers has a subtropical climate - need to grow subtropical varieties, not tropical Cavendish.
- Lady Finger highly marketable for high quality - recognised premium.

**Industry Source:** Ian Campbell, Michael Lines-Kelly, Banana Industry Committee; Jordan Rigby, BGF and Don Capner, Chiquita.

## CROP PROFILE: BLUEBERRIES

- PUBLISHED DATA:**

ABS 1996/97

<u>Total area:</u>	218ha
<u>Production:</u>	348,375kg
<u>Value:</u>	\$5,518,260
<u>No. of holdings:</u>	4

- DERIVED FROM INDUSTRY:**

- Plants 1999 - 1 million plus
- Area 240ha
- Production - 1200 tonnes. Estimated 2002 - 1900 tonnes. (Source: Peter McPherson)



- INDUSTRY COMMENTS:**

- Concern over availability of water for further development - water licence restrictions.
- Northern Rivers is the northern limit for blueberries. They have a chilling requirement.
- Export opportunities in Europe.

**- Region as a proportion of national domestic production: 60 - 70%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Labour.
- Seasonal production window - export in spring.  
- domestic market in winter.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3</b>	<b>4.5</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>3.5</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>34</b>

- OVER-RIDING CONSIDERATIONS:**

- Dominance of domestic market by Chiquita and Woolworths and exports by Chiquita.
- High level of management and marketing skills required.

**Industry Source:** Robin Amos and Otto Saeck, Byron Bay Lychee Farm .

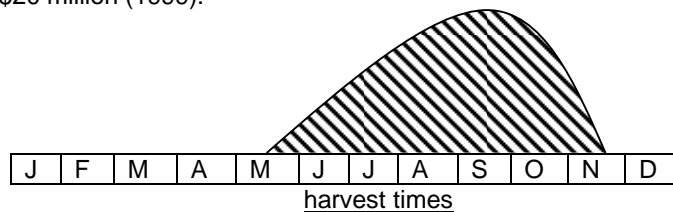
## CROP PROFILE: COFFEE

- PUBLISHED DATA:**

Nil available

- DERIVED FROM INDUSTRY:**

- 200 growers - no accurate statistics.
- Production - 50 tonnes dry green bean.
- 130 growers (<20ha).
- Current planted area will produce 130 tonnes in 2000.
- Estimated value \$20 million (1999).



- INDUSTRY COMMENTS:**

- Lack of cohesion is not an industry problem in a two-tiered industry.
- Co-operative - likely vehicle for small growers.
- Insufficient supply, to date, to promote the product.
- A diversity of size (plantation) and experience among growers.
- Large coffee estates (industry driven) plantings 400ha in 1999/2000.
- Next 10 years will see the industry evolving from regional novelty market to servicing a sophisticated roasted coffee market in Australia and overseas.

**- Region as a proportion of national domestic production: 25%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Clean, green image.
- High quality.
- Limited available land for machine harvesting; limited supply = price premium.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>5</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>4.5</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>43.5</b>

- OVER-RIDING CONSIDERATIONS:**

- A two-tiered industry is likely to develop - one based on the boutique market - high quality, farm scale plantings; the other on large-scale plantations supplying supermarkets - general quality.
- Price premium essential for industry viability

**Industry Sources:** Joy Phelps, Joan Dibden and Roy Nuttycombe, NSW Coffee Growers Association and Northern Rivers Coffee Industry - Draft Business Plan, August 1999.



## CROP PROFILE: CUSTARD APPLES

- PUBLISHED DATA:**

ABS 1996/97

<u>Total trees</u>	23,079
<u>Production:</u>	531,123kg
<u>Value:</u>	\$1,452,620
<u>No. of holdings:</u>	96

- DERIVED FROM INDUSTRY:**

- 40% of national crop from Northern Rivers.
- Nearly 120,000 trays from Northern Rivers.



- INDUSTRY COMMENTS:**

- Interstate Certification Agreement for Queensland fruit fly is required, even though fruit flies are not present during the Northern Rivers season.
- Dependant on Queensland DPI for Research & Development.
- Northern Rivers mainly grow African Pride, which is not the preferred variety for export.

**- Region as a proportion of national domestic production: 40%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Minimal use of pesticides.
- Productivity.
- Seasonal window for Richmond area from July to October.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3</b>	<b>1</b>	<b>3</b>	<b>3.5</b>	<b>3</b>	<b>2</b>	<b>4.5</b>	<b>2.5</b>	<b>2.5</b>	<b>3</b>	<b>28</b>

- OVER-RIDING CONSIDERATIONS:**

- Custard apples are not a primary income crop. Often grown with macadamias or stone fruit
- Continued viability of the industry is heavily dependant on on-going success of macadamia industry.

**Industry Source:** Patti Stacey, Australian Custard Apple Growers Association.



## CROP PROFILE: CULINARY HERBS (FRESH)

• **PUBLISHED DATA:**

ABS 1996/97

<u>Total area:</u>	1.1ha
<u>Production:</u>	5000kg
<u>Value:</u>	\$22,500
<u>No. of holdings:</u>	2

**DERIVED FROM INDUSTRY:**

- Estimated 15ha.
- Estimated value \$500,000



• **INDUSTRY COMMENTS:**

- Dried herb industry not established - Capital intensive.
- Erratic and immature market, not clearly identified and quantified.
- Lack of supply chain management.
- Long term, investment of time and money required.
- There is no comparative advantage for dried herbs over imported product.
- Reducing the seasonal fluctuations in supply through new product storage technologies is essential in developing export markets.
- Mixed cropping of medicinal and culinary herbs is advocated.

- **Region as a proportion of national domestic production: <5%**

• **COMPARATIVE ADVANTAGES** (industry determined):

- Climate.
- Quality.
- Seasonal production windows.
- An export opportunity for herbs produced through Quality Assured, sustainable, natural production systems (clean and green).

• **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3.5</b>	<b>3</b>	<b>4.5</b>	<b>2.5</b>	<b>5</b>	<b>4</b>	<b>4.5</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>37</b>

• **OVER-RIDING CONSIDERATIONS:**

- **Highly segmented market - very sensitive to supply.**
- **Present market is supplied by existing growers.**
- **Market (client) driven specifications for quality.**
- **Spoilage of fresh product is a major constraint, particularly for export.**

**Industry Sources:** David Hine, Chairman Culinary Herb Growers Association and Michael Qualmann, herb grower.

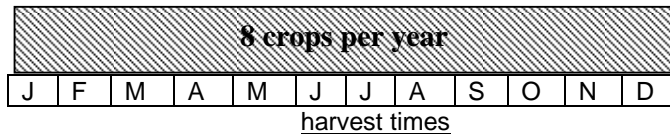
## CROP PROFILE: HYDROPONIC LETTUCE

- PUBLISHED DATA:**

ABS 1996/97	<u>Total area:</u>	3.4ha
	<u>Production:</u>	401.1 tonnes
	<u>Value:</u>	\$336,123
	<u>No. of holdings:</u>	5

- DERIVED FROM INDUSTRY:**

- 10 - 12 speciality lettuce growers.



- INDUSTRY COMMENTS:**

- Oversupply to local markets.
- Over-capitalisation a feature.
- Large tourist population - restaurants - big advantage for the region.
- Likelihood of static production and number of growers over the next 5 years

- **Region as a proportion of national domestic production: 2-3%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Proximity to markets.
- Productivity.
- Infrastructure.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../45
<b>2</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>N/A</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>3.5</b>	<b>26.5</b>

- OVER-RIDING CONSIDERATIONS:**

- Lack of suitable labour for high tech. industry.
- Importance of local/regional markets plus Gold Coast outlets.

**Industry Source:** Keith Suttentfield, Hydroponic Industry.

## CROP PROFILE: LEMON MYRTLE

- **PUBLISHED DATA:**  
N/A

**DERIVED FROM INDUSTRY:**

- 130,000 trees planted.
- 60 growers.
- 20% of Australian plantings.



- **INDUSTRY COMMENTS:**

- Growers, marketing groups being formed under the Australian Bushfoods and Products Co-op Ltd.
- Economic sustainability of the industry will decline rapidly if it does not commit itself to a long term marketing plan. Short term and export markets being investigated for oil and value added products.
- Need to establish a market-driven industry.
- The industry is in a difficult transition between being too big to supply local markets and too small to adequately promote and market processed product to export markets.
- Need for awareness and education about product.
- Clean, green image a priority.

- **Region as a proportion of national domestic production: 20%**

- **COMPARATIVE ADVANTAGES** (industry determined):

- Vertical integration, value adding.
- Climate.
- Native to this region.
- Excellent technical resources of Southern Cross University (Attori).
- Links with "Cellulose Valley" (SCU) in developing industry business plan.

- **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>2</b>	<b>4</b>	<b>3.5</b>	<b>4.5</b>	<b>4.5</b>	<b>1.5</b>	<b>4.5</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>36.5</b>

- **OVER-RIDING CONSIDERATIONS:**

- **Market and product development essential - new products, use and markets.**
- **Commitment to QA, marketing, processing, value adding essential for industry viability.**

**Industry Source:** Keith Alcock, Australian Bushfoods and Products Co-op Ltd.

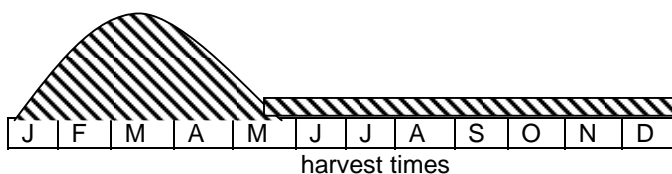
## CROP PROFILE: LIMES

- PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	4224
	<u>Production:</u>	75,266kg
	<u>Value:</u>	\$131,289
	<u>No. of holdings:</u>	30

- DERIVED FROM INDUSTRY:**

- 30 to 35 lime growers. Largest have 1000 and 1200 trees (not yet producing).
- 60 tonnes marketed from 12 growers in Lime Marketing Group.
- 30 tonnes available for processing.



- INDUSTRY COMMENTS:**

- Lack of research and extension.
- Challenge is to extend the season.

**- Region as a proportion of national domestic production: 10%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Climate.
- Seasonal advantage.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>2.5</b>	<b>28.5</b>

- OVER-RIDING CONSIDERATIONS:**

- In the next 4 years, Australian production will increase by 50%. Main competition from inland, larger scale production in South Queensland.

**Industry Source:** Sue Braz and the Lime Marketing Group.

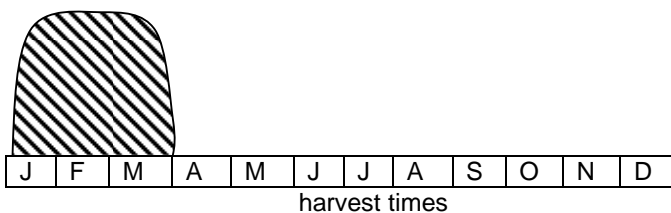
## CROP PROFILE: LYCHEES

- PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	17,490
	<u>Production:</u>	161,090kg
	<u>Value:</u>	\$819,948
	<u>No. of holdings:</u>	23

- DERIVED FROM INDUSTRY:**

- 1999 Total trees 13,366  
Production 241 tonnes.  
Value \$1,248,000  
No of holdings 12.



- INDUSTRY COMMENTS:**

- Opportunity for investment by Superannuation Funds because of long lead time and high establishment cost.

- Region as a proportion of national domestic production: **5%.**

- **COMPARATIVE ADVANTAGES** (industry determined):

- **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>5</b>	<b>5</b>	<b>2.5</b>	<b>2.5</b>	<b>4.5</b>	<b>2</b>	<b>4</b>	<b>5*</b>	<b>2</b>	<b>3.5</b>	<b>36</b>

- **OVER-RIDING CONSIDERATIONS:**

- Management factor is very high for this crop.\*
- Northern Rivers is the southern limit for lychees.
- Finance required to sustain long lead time before cropping starts.
- Fruit bats are a major problem and netting is the only answer, but at very high cost.

**Industry Source:** Otto Saeck and Robin Amos, Byron Bay Lychee Farm.

## CROP PROFILE: MACADAMIAS

- PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	1,334,978
	<u>Production:</u>	11,326,322kg (NIS)
	<u>Value:</u>	\$35,456,811

- DERIVED FROM INDUSTRY:**

- 1999 - 30,000 tonnes NIS (9000 tonnes of kernel). 3,250,000 tonnes nationally.
- Expected 2003 - 50,000 tonnes NIS (about 16,000 tonnes kernel).
- Approximately 60% of the Australian production will be on the Richmond plateau.
- Farm gate value \$70 million, value-added \$120 million nationally.



- INDUSTRY COMMENTS:**

- Strong export marketing effort required over next 5 years to sell 60% of the production, eg Germany.
- Excellent agronomic and R&D support.

**- Region as a proportion of national domestic production: 60%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- |                         |   |
|-------------------------|---|
| - Climate.              | - Good support structures for agronomic management. |
| - Freshness of product. | - Industry has achieved critical mass.              |
| - Proximity to markets. | - Quality.  |
| - Pesticide-free.       | - Infrastructure.                                   |

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>3.5</b>	<b>4</b>	<b>38.5</b>

- OVER-RIDING CONSIDERATIONS:**

- Increase in production will improve the export capability.
- Urban expansion a threat.

**Industry Source:** Rod Faye, Australian Macadamia Society.

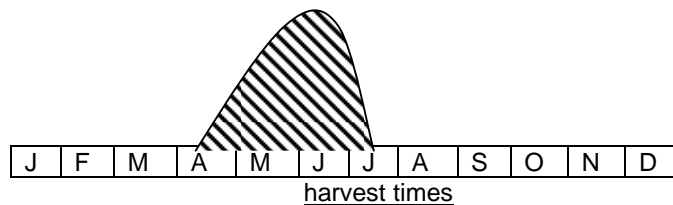
## CROP PROFILE: MANDARINS

- PUBLISHED DATA:**

ABS 1996/97

<u>Total trees</u>	21,795
<u>Production:</u>	218,450kg
<u>Value:</u>	\$278,281
<u>No. of holdings:</u>	47

- DERIVED FROM INDUSTRY:**



- INDUSTRY COMMENTS:**

- Lack of research and extension.

- **Region as a proportion of national domestic production: 1%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Climate.
- Seasonal production window.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>2</b>	<b>0</b>	<b>2.5</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>18.5</b>

- OVER-RIDING CONSIDERATIONS:**

- Mandarins grown to retain labour force between major crop work periods, eg. stone fruit.

**Industry Source:** Sue Braz, Lime Marketing Group, and Bill Hatton, grower.

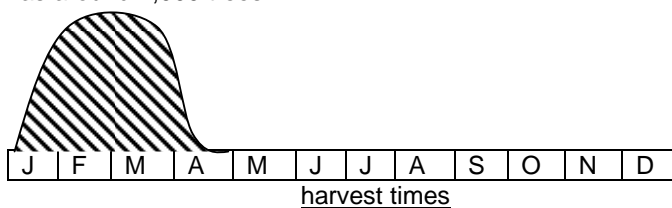
## CROP PROFILE: MANGOES

- PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	31,150
	<u>Production:</u>	235,852kg
	<u>Value:</u>	\$591,237

- DERIVED FROM INDUSTRY:**

- Proportion of domestic production - 1%.
- Annual production - 50,000 trays.
- Largest producer has around 4,000 trees.



- INDUSTRY COMMENTS:**

- End of season premium prices when trees produce.
- Could not justify mangoes as the primary source of farming income.
- Potential for co-operative packing.
- Good value-adding potential, but the industry is too small and cropping too unreliable.

**- Region as a proportion of national domestic production: 1%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Seasonal production window but competition increasing from North Queensland late varieties.
- Freshness of product.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>2.5</b>	<b>2</b>	<b>3.5</b>	<b>24</b>

- OVER-RIDING CONSIDERATIONS:**

- Speculative crop and not a stand alone crop.
- Unreliable productivity because of climate and unpredictable weather especially at harvest.
- Late season production window the only comparative advantage.

**Industry Source:** Warren Everingham, NSW Mango Growers Association.



## CROP PROFILE: OTHER NATIVE FOODS

- **PUBLISHED DATA:**

N/A

- **DERIVED FROM INDUSTRY:**

- Many orchards established in the last 5 years with some significant plantings within the last 18 months.
- 250 in total.
- 100 - 125ha under ANSAS system. (Chemical free but not fully organic).
- 15 - 20% in production.
- Value \$600,000 Farm Gate Value (doubled in processing).
- Main plantings other than Lemon Myrtle are Aniseed Myrtle, Davidson's Plum and Riberry.

- **INDUSTRY COMMENTS:**

- The native foods industry is in a difficult transition period between being too big to supply the corner store or restaurant and too small to adequately promote and market processed product to export markets. Supply base is growing but market support will bring growth of 8 to 10 fold over the next 10 years.
- Industry fragmentation, questions over industry scale and viability.
- People with diverse background in the industry.
- No public R & D on product development.
- Strengths include good technology and genetic material.
- Biggest threat is cottage industry without HACCP.

- **Region as a proportion of national domestic production - N/A.**

- **COMPARATIVE ADVANTAGES** (industry determined):

- Best prospects are Aniseed Myrtle, Davidson's Plum and Riberry.

- **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

(Score: 0=poor; 5 = excellent)

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>TOO MANY DIVERSE NATIVE FOODS TO GENERALISE</b>										

- **OVER-RIDING CONSIDERATIONS:**

- **Diverse and cottage industry nature lacks critical mass, especially for contract processing.**
- **No product or quality standards.**
- **Leaf crops have lower risks (climatic, pests & diseases) compared to fruiting crops and quicker lead times to production.**
- **Native foods need to be in the main stream food ingredient business.**

**Industry Sources:** Tim Bennett, Managed Growth Australia; Margaret Bailey, Australian Rainforest Bushfoods Industry Association; Ditte Nielsen and Cas Betts, Australian Native Foods Management and Jan Ford, NSW Agriculture.

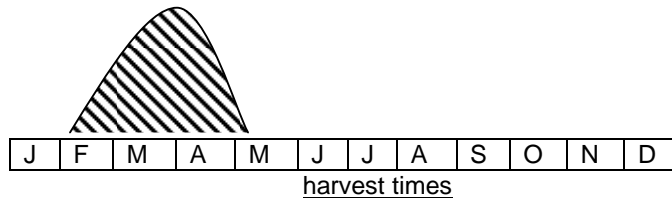
## CROP PROFILE: OLIVES

- PUBLISHED DATA:**

NIL

- DERIVED FROM INDUSTRY:**

- No. of trees - 10,000 (max.)
- Area - 40ha (max.)
- No. of growers - 30.



- INDUSTRY COMMENTS:**

- A cautious approach is being followed because of unknown yields, unproven varieties, prices, markets and quality of product.

- **Region as a proportion of national domestic production: 0%**

- COMPARATIVE ADVANTAGES** (industry determined):

- Pesticide free or clean natural product

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../40
<b>3</b>	<b>N/A</b>	<b>1</b>	<b>3.5</b>	<b>1.5</b>	<b>2</b>	<b>4</b>	<b>N/A</b>	<b>4</b>	<b>1</b>	<b>20</b>

- OVER-RIDING CONSIDERATIONS:**

- **Economic sustainability unknown at this early stage.**
- **Low oil yield would make the crop unprofitable.**
- **A marginal area for olive production.**
- **Need for new value-added products.**

**Industry Source:** Susan Stilgoe, Clarence Catchment Olive Growers Association.

## CROP PROFILE: PAWPAWS

- PUBLISHED DATA:**

ABS 1996/97

<u>Total area:</u>	11.8ha
<u>Production:</u>	120,916kg
<u>Value:</u>	\$136,746
<u>No. of holdings:</u>	9

- DERIVED FROM INDUSTRY:**



- INDUSTRY COMMENTS:**

- Region as a proportion of national domestic production: <1%.

- COMPARATIVE ADVANTAGES** (industry determined):

- Labour.
- Freshness of product.
- Proximity to markets.
- Pesticide-free.
- Infrastructure.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>3</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>0.5</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>18.5</b>

- OVER-RIDING CONSIDERATIONS:**

- The southern-most limit for production of pawpaws.
- Marginal crop for this region - a tropical crop in sub-tropical climate - isolated warm pockets only

**Industry Source:** Graham Anderson, pawpaw grower.



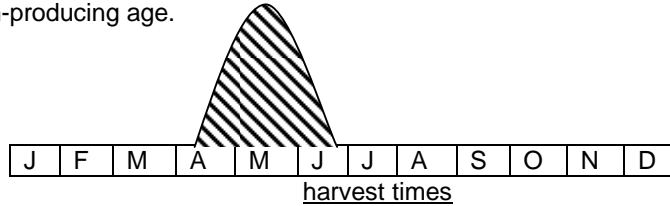
## CROP PROFILE: PECANS

• **PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	5475
	<u>Production:</u>	N/A
	<u>Value:</u>	N/A
	<u>No. of holdings:</u>	38

**DERIVED FROM INDUSTRY:**

- Over 11,000 trees.
- Production 50 tonnes est. Year 2000.
- 50% of trees non-producing age.



• **INDUSTRY COMMENTS:**

- Small scale plantings - lack of economies of scale.
- Out of season production the main production advantage.
- Strong correlation between quality and price.
- High yields over 2 tonnes per hectare - gross income \$6-10,000/ha.

- **Region as a proportion of national domestic production:** 2.5%

• **COMPARATIVE ADVANTAGES** (industry determined):

- Early season production.
- Freshness of product.
- Pesticide free.
- Climatic - No late frosts (October).
- Relatively short harvest season - compared to macadamia nuts.

• **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

(Score: 0=poor; 5 = excellent)

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>2.5</b>	<b>2</b>	<b>26.5</b>

• **OVER-RIDING CONSIDERATIONS:**

- Late wet season a problem for harvesting.
- Pests a major problem - birds (cockatoos, crows, rats, foxes and dogs)
- Only one processing facility - no competition for product.
- Growers must dehumidify nuts prior to delivery.
- Broad area crop - with a long term future for deep well drained alluvial soils along many of the major rivers on the North Coast.
- Much of the equipment used for the macadamia industry can be used for pecan production.

**Industry Source:** Ross Loebel, Horticultural Adviser to the Australian Pecan Growers Association.

## CROP PROFILE: STONE FRUIT - LOW CHILL

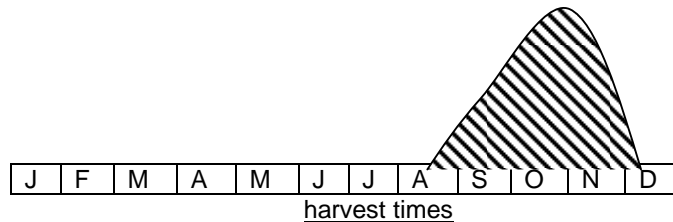
- PUBLISHED DATA:**

ABS 1996/97

<u>Total trees</u>	135,022
<u>Production:</u>	1,247,253kg
<u>Value:</u>	\$1,960,082

- DERIVED FROM INDUSTRY:**

- 250 growers.
- 1998 farm gate value - \$15 million.
- 300,000 trees.



- INDUSTRY COMMENTS:**

- Export opportunities currently being explored - Hong Kong, Asian markets.
- Low-chill is 10% of national production.
- Region produced 70% of national low-chill crop, ie, Region produced 7% of national stone fruit.

**- Region as a proportion of national domestic production: 70%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Labour.
- Climate.
- Infrastructure.
- Seasonal production window.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>5</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>28</b>

- OVER-RIDING CONSIDERATIONS:**

- Orchard netting costly and essential to viability.
- Environmental considerations - heavy and highly visible use of farm chemicals.
- Reliant on domestic market; challenge for value-adding and export opportunities.
- Moratorium on new water licences.
- Pressure from urban encroachment.

**Industry Source:** Bill Hatton, North Coast Low-chill Stonefruit Growers Association.

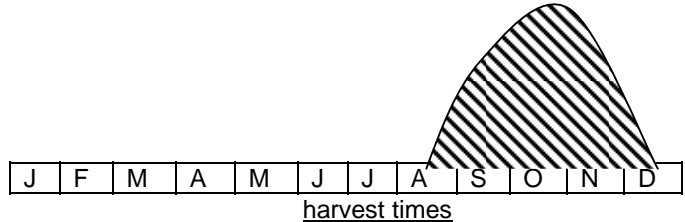
**CROP PROFILE: STONE FRUIT - LOW CHILL**

• **PUBLISHED DATA:**

ABS 1996/97	<u>Total trees</u>	135,022
	<u>Production:</u>	1,247,253kg
	<u>Value:</u>	\$1,960,082

**DERIVED FROM INDUSTRY:**

- 250 growers.
- 1998 farm gate value - \$15 million.
- 300,000 trees.



• **INDUSTRY COMMENTS:**

- Netting costs will self select serious growers.
- Environmental sustainability - public perception is lower than reality.
- Need to adjust practices which reduce tension in the surrounding communities.
- Must move quickly to introduce Quality Management.

- **Region as a proportion of national domestic production - 60%.**

• **COMPARATIVE ADVANTAGES** (industry determined):

- Climate.
- Post harvest and transport facilities.
- Better water, soil and rainfall pattern.
- Established industry with high level of experience and non-farm skills, strong local and national organisation, levy-based income allowing extension, R & D and marketing programmes.

• **ASSESSMENT BY SELECTION CRITERIA** (industry derived)

(Score: 0=poor; 5 = excellent)

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>23</b>

- **OVER-RIDING CONSIDERATIONS:**
- Orchard netting costly and essential to viability.
  - Environmental considerations - heavy and highly visible use of farm chemicals.
  - Reliant on domestic market; challenge for value-adding and export opportunities.
  - Moratorium on new water licences.
  - Pressure from urban encroachment.

**Industry Sources:** John Rogers and Phil Stacey, North Coast Low-chill Stonefruit Growers Ass'n.

## CROP PROFILE: SWEET POTATOES

- PUBLISHED DATA:**

ABS 1996/97	<u>Area:</u>	152ha
	<u>Production:</u>	2,545 tonnes
	<u>Value:</u>	\$2,033,859

- DERIVED FROM INDUSTRY:**

- 22 to 24 vegetable growers remain in the Cudgen-Duranbah production area.



- INDUSTRY COMMENTS:**

- The most important vegetable crop on the Tweed.  
 - Competition looming in Queensland.  
 - Uncertainty over water policy.

- **Region as a proportion of national domestic production: 40%.**

- COMPARATIVE ADVANTAGES** (industry determined):

- Quality.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>5</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>5</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>2.5</b>	<b>31.5</b>

- OVER-RIDING CONSIDERATIONS:**

- **High land cost in the main Cudgen - Duranbah production area.**

**Industry Sources:** Doug Paddon (President) and members of the Tweed Fruit and Vegetable Growers Ass'n.



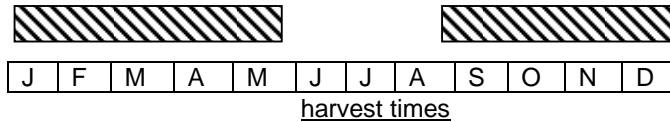
## CROP PROFILE: TEA

- PUBLISHED DATA:**

**NIL**

- DERIVED FROM INDUSTRY:**

- 500 tonnes grown in the Northern Rivers (max.).
- 250ha under cultivation (max.).
- Total Australian consumption - 22,000 tonnes.



- INDUSTRY COMMENTS:**

- Quality dependent - great market prospects only for high quality tea\*.
- Not price competitive with third-world countries.
- Suited to cultivation on cane lands - however cane has currently higher viability.

- COMPARATIVE ADVANTAGES: (industry determined):**

- Labour, climate, quality, pesticide free, infrastructure and seasonal production window.

**- Region as a proportion of national domestic production: 8%.**

- ASSESSMENT BY SELECTION CRITERIA (industry derived)**

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4*</b>	<b>2</b>	<b>4</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>4</b>	<b>3.5</b>	<b>5</b>	<b>3.5</b>	<b>37</b>

- OVER-RIDING CONSIDERATIONS:**

- Essential to have processing plant within 90 minutes of harvesting point.
- Must be able to produce a product of comparable quality and price to the imported product.
- Extremely competitive market. No market for low grade tea.
- High capital cost of processing, packaging. Long lead time to production (5 years).

**Industry Source:** Ron Ford, Madura Tea Estates.

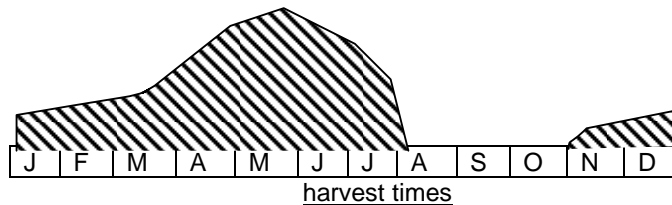
## CROP PROFILE: TOMATOES

- PUBLISHED DATA:**

ABS 1996/97

Area: 63.9ha  
Production: 1,912.5 tonnes  
Value: \$2,525,618  
No. of holdings: 25

- DERIVED FROM INDUSTRY:**



- INDUSTRY COMMENTS:**

- This region no longer has a production window advantage.
- Third most important vegetable crop on the Tweed.
- Cannot benefit from economies of scale compared with other production areas.

- **Region as a proportion of national domestic production:** <1%.

- COMPARATIVE ADVANTAGES** (industry determined):

- Freshness of product.
- Proximity to markets.
- Infrastructure.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>1</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>3.5</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>14.5</b>

- NO OVER-RIDING CONSIDERATIONS:**

**Industry Source:** Keith Prichard, Tweed Fruit and Vegetable Growers Association.

## CROP PROFILE: ZUCCHINIS

- PUBLISHED DATA:**

ABS 1996/97

Area: 82.4ha  
Production: 800,850kg  
Value: \$939,158

- DERIVED FROM INDUSTRY:**



- INDUSTRY COMMENTS:**

- Second most important vegetable crop on the Tweed.
- August - September harvest period is a major plus for the area.
- Queensland large-scale producers have economies of scale and use central packing facilities. They are also better able to deal with supermarkets.
- Increasing environmental pressures.

- **Region as a proportion of national domestic production:** <10%.

- COMPARATIVE ADVANTAGES** (industry determined):

- Climate.
- Productivity.
- Seasonal production window.

- ASSESSMENT BY SELECTION CRITERIA** (industry derived)

**(Score: 0=poor; 5 = excellent)**

MARKET PROSPECTS		AGRONOMIC SUITABILITY				SUSTAINABILITY		VALUE ADDING POTENTIAL	COMPARATIVE ADVAN.	TOTAL SCORE
Dom.	Export	Micro climate	F'dom from P & D	Soil	Avail land	Environ-mental	Economic			.../50
<b>4</b>	<b>0</b>	<b>4</b>	<b>3.5</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>29.5</b>

- OVER-RIDING CONSIDERATIONS:**

- **Highly labour intensive.**

**Industry Source:** Keith Prichard and Doug Paddon, Tweed Fruit and Vegetable Growers Ass'n.

## **6. GUIDE TO ENTERPRISE SELECTION:**

Acknowledging there is a wide diversity for the reasons why people choose to live on the NSW North Coast and the criteria people use to select an enterprise, there are still three basic criteria to address before starting out in any commercial agricultural pursuit -

### **1. Check the suitability of your land (a resource audit) -**

including soil, aspect, slope, access to water, frost risk, etc. Remember don't grow a particular crop just because it will grow well on your land.

Most

importantly.....

### **2. Research your markets -**

Visit major markets, speak to consumers, retailers and agents, gather market information from market reporting services, speak to other growers, industry organisations, exporters, processors, etc. Remember beware the DFO (data free observation).

### **3. Prepare a business plan -**

A business plan should answer the following questions:

1. **What resources are available?** - \$, (establishment and on-going), land, infrastructure (harvesting, transport, processing etc) skills, labour and time.
2. **What are your personal and business objectives?** - the balance between lifestyle, off-farm employment and the requirements of the enterprise.
3. **What are the market prospects?** - prices, quantities, target markets, growth potential.
4. **What are the strengths, weaknesses, opportunities and threats of the enterprise?** - investigate local government, Environmental Protection Authority, Land and Water Conservation, National Parks and Wildlife Service, legal requirements.
5. **What human resources are required?** - personnel, skills and training.

## **7. OTHER SOURCES OF INFORMATION:**

- **Making a Difference - Naturally:** Strategies and recommendations for a sustainable horticultural industry in the Northern Rivers Region of NSW - September 1999. Northern Rivers Regional Development Board (NRRDB).
- **Agrilink Horticulture Series** - Agrilink Unit, DPI, PO Box 5269 SCMC, NAMBOUR, QLD. 4560. Phone 1800 677 640.
- **Future land requirements for agricultural industries:** A discussion paper prepared for the Management Committee of the Northern Rivers Regional Strategy. Robert J Smith and Associates. April 1997. Contact - NRRDB.
- **Packhouse Infrastructure Study:** Commissioned by the Northern Rivers Agricultural Development Association (NORADA) June 1998. Phone, (02) 66771365.
- **Fifty potential new crops for the NSW North Coast:** Brian Munro, Tropical Fruit World Pty Ltd, Durambah, 1997. \$40. Phone (02) 66777222.
- **Opportunities for Exotic Fruits:** Brian Watson, Journal of the Australian Institute of Agricultural Science, September - October, 1990.
- **Opportunities for commercial under-exploited Tropical Fruits, Vegetables and Nuts:** Rural Industries Research & Development Corporation (RIRDC), Outcomes of Cairns workshop, July 1997.
- **The New Rural Industries: A handbook for Farmers and Investors.** Edited by Keith Hyde (RIRDC), 1998. \$40.
- **The Short Report, No. 57:** Financial analysis indicators for new rural industries - RIRDC - (olives, coffee (N.Q.), tea tree oil, lychee).
- **Physical Property Planning:** Farming for the Future series. A joint publication of NSW Agriculture, Department of Land & Water Conservation, National Parks & Wildlife Service, NSW Farmers Training Company and the National Landcare program. Second Edition 1999. Contact - Elaine Toogood, NSW Agriculture, Alstonville. Phone (02) 66262451.
- **Soil Sense** - Soil Management for NSW North Coast Farmers. NSW Agriculture, Land and Water Conservation, 1994. NSW Agriculture offices.
- **Farmcare - Cultivating a Better Future.** Code of Practice for sustainable fruit and vegetable production - Qld. Qld Fruit & Vegetable Growers and the Horticultural Research & Development Corporation, 1998. Contact - QFVG, PO Box 19, BRISBANE MARKET. QLD. 4106.
- **Law of the Land** - A Guide to Environmental Law for Farmers, Volume 2. Environmental Defenders Office. Phone (02) 92626989.
- **Northern Rivers NSW Coffee Industry - An Industry Business Plan,** September 1999: RIRDC, NRRDB, Northern Rivers Area Consultative Committee, (NRACC).
- **Coffee growing in Australia - A machine-harvesting perspective:** RIRDC, QDPI, NSW Agriculture - available NSW Agriculture Murwillumbah and TFRS Alstonville.

- **Audit of Medicinal Herbs currently grown in the Northern Rivers Region:** Howard Rubin and Peter Purbrick, April 1999.
- **Word of Mouth!** Regional Cuisine Newsletter NRRDB.
- **North Coast Agriculture 2000:** NSW Department of Agriculture offices.

**Contacts:**

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## **8. AUTHOR PROFILE:**

**David Peasley** has thirty years experience in a range of horticultural fruit industries in New South Wales, including twenty years as a District Horticulturist then as Program Leader with NSW Agriculture, leading the Tropical Fruit Research, Development, and Extension program on the NSW North Coast.

His company, Peasley Horticultural Services, was established in 1995 to provide an 'on the ground' consultancy service evaluating new crop varieties, management strategies and managing Research and Development projects for the sub-tropical fruit industries of NSW and South-East Queensland.

He has co-authored two reference books on coffee - "Coffee Growing in Australia - a machine harvesting perspective" (1995,1997), and the chapter on coffee in the "New Rural Industries" Handbook for Farmers and Investors (1998).

David has maintained strong links with the horticultural industries of the North Coast of NSW, and has held positions on the board of the NSW Banana Industry Committee, the Australian Passionfruit Industry Association R & D and Vine Committees and NSW Mango Growers Association.

**John Baker** has over 25 years experience in fresh fruit and vegetable production and marketing. In the nine years prior to establishing Produce Marketing Australia in 1998, he was Managing Director (and previously Marketing Manager) of the Australian Horticultural Corporation (AHC). North Coast industries covered by AHC programmes include avocados, citrus, macadamias and stone fruit.

He previously managed the Sydney wholesale fruit, vegetable and flower markets, the largest in the Southern Hemisphere. From 1968 to 1986 he was employed by the NSW Department of Agriculture in extension, extension management and export development. This included five years (1972 to 1977) at Murwillumbah, as District Agronomist and District Horticulturist, where he specialized in servicing the needs of the North Coast vegetable industry.

**Tony Biggs** has degrees in horticulture and horticultural research from British universities where he worked for 18 years prior to emigrating to Australia in 1980. After coming to Australia, he was Head of Horticulture at Hawkesbury Agricultural College (now the University of Western Sydney, Hawkesbury) until 1986 and then Principal Horticulturist (Vegetables) with NSW Agriculture until 1990 when he joined the family consultancy company - Cardinal Horticultural Services.

He is editor of "Good Fruit and Vegetables" and has an extensive network across Australia with producers, marketers, processors, researchers and industry organisations. He has been a Director of the Horticultural Research and Development Corporation (HRDC) since 1991.