

AN INTRODUCTORY OVERVIEW OF THE ESSENTIAL OIL INDUSTRY IN AUSTRALIA

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This paper aims to provide a broad introductory overview of the Australian essential oil industry and where it stands in the global market place.

For most overseas visitors, Australia is best known for its unusual plant and wild life. Its involvement in the production of essential oils is relatively small in comparison to the world's major essential oil producing nations. However, Australia's unique range of native flora and diverse climates provide it with an important place within the global essential oil industry.

Like most cultures around the world, indigenous aromatic plants have been used for centuries in Australia for their fragrance, flavouring and medicinal qualities.

Eucalyptus oil is the most widely recognised essential oil that is associated with Australia but, today, very little of the internationally traded eucalyptus oil originates from this country. There are, however, many other essential oils that are produced commercially in Australia today.



Since the resurgence in the popularity of all things natural in the late 1970s, there has been a progressive swing towards incorporating natural materials into a wide range of foods, medicines and lifestyle products. The growth of the natural products industry has led many Australian agricultural enterprises to examine what opportunities exist to diversify into this area. Over the past decade the industry has experienced significant growth and many Australian agribusinesses are now striving to capitalize on the opportunities that exist from the growth of this market segment.

Essential Oil Production

Australia's involvement in the production of essential oils dates back to the late 17th century when it was first colonized by white settlers. The tyranny of distance suffered by early settlers necessitated self-sufficiency in everything from building materials to medicines. Shortly after arriving, Surgeon-General John White distilled a peppermint-like oil from *Eucalyptus piperita* and recorded its unique olfactory qualities in his diary. When the oil was later sent for testing to botanist Sir Joseph Banks in England, it was reported to be '*much more efficacious in the treatment of cholicky complaints than the oil obtained from the well-known English peppermint, as well as being less pungent and more aromatic*'.

Although essential oil production in Australia did not take place on a commercial scale until the early part of the 19th century, many of the early pioneers experimented with the distillation of numerous other native species in an attempt to find medicines for the fledgling colony. Many of these were well documented by Arthur Penfold who, whilst acting as the curator of the Sydney Museum in the early part of the 20th century, catalogued hundreds of native plant species for their medicinal and commercial qualities. Since that time farmers have trialled and distilled a variety of crops ranging



from rare indigenous species to imported well known species, such as lavender and citrus.

Presently, the industry is made up of 180-200 commercial producers with production being dominated by a dozen or so larger firms.

The major production areas are the states of New South Wales, Victoria and Tasmania, although significant operations also exist in Western Australia and Queensland.

Essential oil production figures are not recorded by any central body. However, the following table and charts provide estimates of production volumes and values (farm gate) for individual oils, based on industry data and private records.

Locations of major production sites

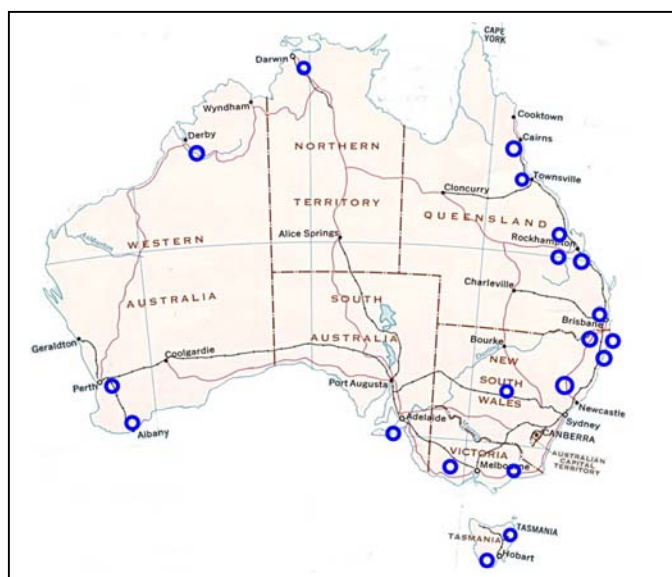


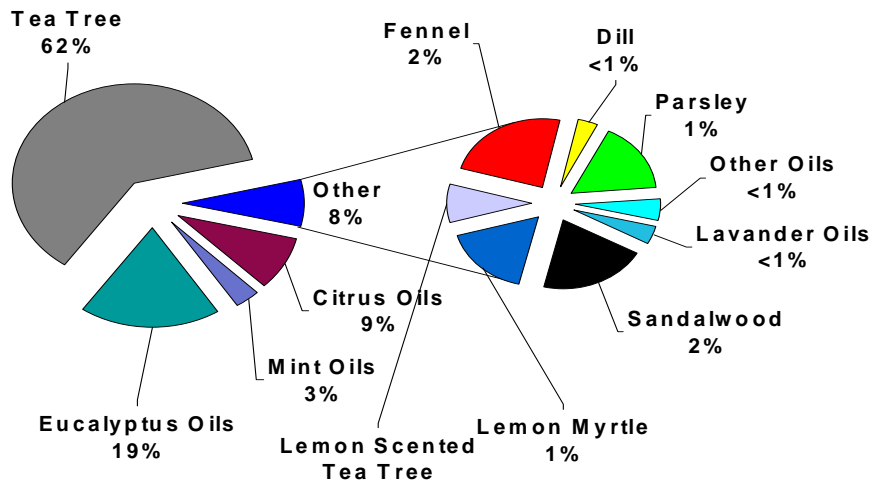
Table 1: Estimated current production of essential oils in Australia

Sources: Department of Primary Industry Yearbook 2002, ATTIA Industry Survey, Personal Records

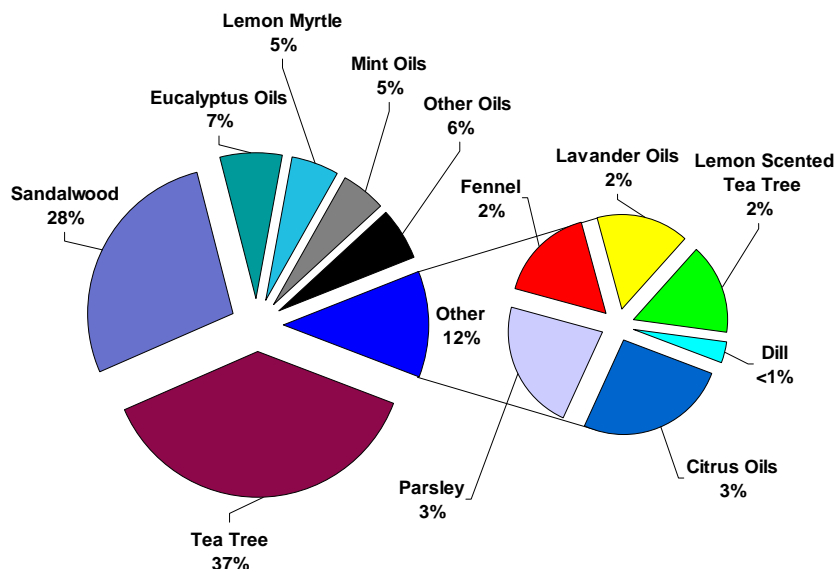
Essential oil	Annual production (tonnes)	Major production centres
Tea Tree	405	New South Wales, Queensland
Eucalyptus: Cineole type	120	Victoria, Western Australia, New South Wales
Citronellal type	0.7	Queensland
Citrus: Orange	35-45	Victoria (Mildura), South Australia (Berri)
Lemon	4-8	Victoria (Mildura), South Australia (Berri)
Mandarin	3-4	Victoria (Mildura), South Australia (Berri)
Grapefruit	4-8	Victoria (Mildura), South Australia (Berri)
Mints: Peppermint	20	Victoria, Tasmania
Spearmint		Victoria, Tasmania
Sandalwood	12	Western Australia
Fennel	12	Tasmania
Parsley	8	Tasmania
Dill	2	Tasmania
Lavender: Lavender	1.5	Tasmania, Victoria, New South Wales
Lavandin	0.5	Victoria
Lemon Myrtle	8.4	New South Wales, Queensland
<i>Leptospermum petersonni</i>	4.3	New South Wales, Queensland
Boronia	0.1	Tasmania
Other oils	2.4	



Relative Volumes of Oil Types as Percentage of Total Oil Production



Relative Dollar Value of Total Oil Production



With the major Australian essential oils:

- Tea tree - represents 62% of total production and 37% of the total value.
- Eucalyptus – 9% of total production and 7% of the total value.
- Citrus – 9% of the total production.
- Sandalwood – 28% of the total value.



Eucalyptus Oils

Commercial production of eucalyptus oil began in 1852 when pharmacist Joseph Bosisto and botanist Ferdinand von Mueller built a crude still at Dandenong Creek, Victoria. They distilled the leaves of *Eucalyptus radiata*, which grew profusely in the district. As popularity of eucalyptus oils grew, these facilities were later expanded by the construction of additional distilleries at Emerald, Menzies Creek and Macclesfield.

By the turn of the century eucalyptus oil production had become a well-established industry and was being exported all over the world. The process was very labour intensive and conditions were often very harsh. Up until the late 1940s Australia was the major supplier of cineole (medicinal) type eucalyptus oil to world markets. At its peak, the industry supplied over 1,000 tonnes of oil per annum.






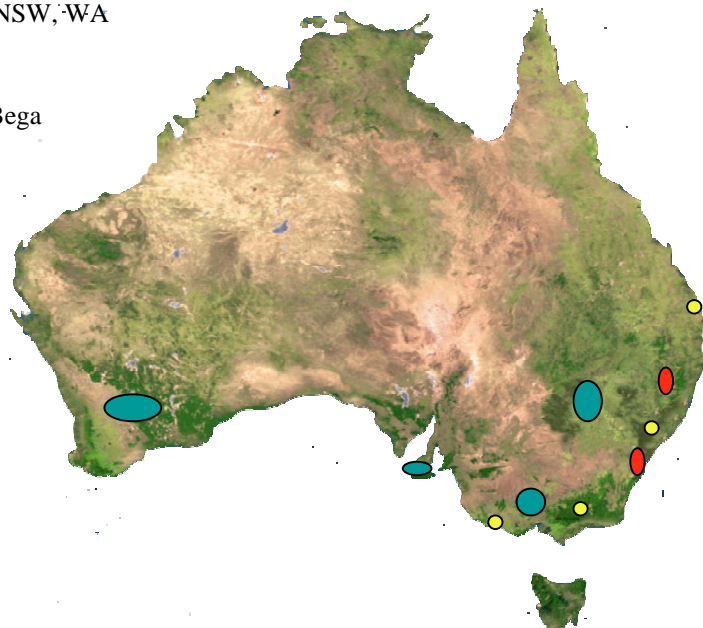
Since the 1950s, Australia's share of the global medicinal type eucalyptus oil market has fallen dramatically, due to rising labour costs and the emergence of low cost producers in China, Portugal and Spain.

Today, the industry is much smaller and relies on superior technology providing superior quality. With the introduction of mechanical harvesting and new distillation equipment, the cost of production has been reduced greatly. This, together with the natural advantages Australia has in having natural stands of eucalypts with high quality pharmaceutical oils, has given the industry a new lease of life.

Current total production of all eucalyptus species is estimated to be between 120 -140 tonnes per annum. On today's prices, the ex-distillery value of this quantity of crude oil would be around AU\$1.9 million.

Eucalyptus Oil Production by Type and Location Today

- Mallee Type** 
 - Ca.140 tonnes p.a.
 - 3-4 main producers in VIC, NSW, WA
- Radiata Type** 
 - 5-10 tonnes p.a.
 - 2-3 producers in Armidale, Bega
- Other types** 
 - Less than 5 tonne p.a.
 - *E. olida*, *E. citriodora*,
E. staigeriana, *E. dives*,
E. elata
 - 7-8 producers



Unlike Chinese eucalyptus oil, which is predominantly derived from *E. globulus*, the bulk of Australian cineole type eucalyptus oil today is derived from the high yielding *E. polybractea* or other 'mallee' species. Production is centred around three main regions: Bendigo (Victoria), West Wyalong (New South Wales) and Kalannie (Western Australia).

Other producing regions include the Southern Highlands (NSW), Armidale (NSW), Kangaroo Island (SA) and Southern Queensland. The eucalypt species grown in these regions include *Eucalyptus radiata* var. *australiana* (narrow-leaved peppermint), *E. dives* (broad-leaved peppermint gum), *E. citriodora* (lemon scented gum), as well as some more unusual species like *E. olida* (strawberry gum), *E. stagerianna* (lemon iron bark) and *E. elata*.

Tea Tree

Much like eucalyptus, the tea tree industry was born out of Australia's need for self-sufficiency and its pioneering heritage. The name tea tree dates back to 1770 when Joseph Banks brewed a pungent tea from the leaves of the indigenous Australian paper bark trees in an attempt to cure his crew of scurvy. Whilst the brew was not successful against scurvy one of these paper barks, *Melaleuca alternifolia*, has had a long history of use by Australian aborigines for its wound healing and anti-inflammatory properties



During the late 1920s, Arthur Penfold of the Sydney Museum distilled oil from the leaves and found it to be 11-13 times more powerful as an antiseptic than phenol. This discovery sparked considerable interest in the medicinal properties of the oil and an industry quickly emerged in northern New South Wales, distilling wild harvested leaves on mobile bush stills.

By the mid 1940s, production of tea tree oil was in excess of 10 tonnes per annum and exports were being made to the USA and Europe.

However, the industry went into decline after the Second World War, following the advent of antibiotics and synthetic biocides.

During the 1980s, the industry experienced a new lease of life and several large-scale plantations were established as a result of the market trend towards more natural medicines.



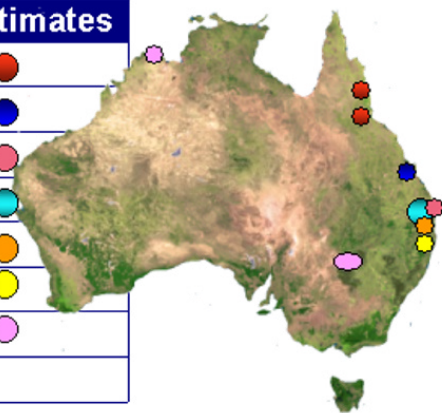
Tea tree oil production grew to in excess of 450 tonnes per annum and the industry has become the largest in the essential oil sector in terms of volume, the number of producers and revenue.

Whilst the industry has been in decline over the last few years due to oversupply problems, there are still in excess of 140 producers spread across a broad geographical region along the eastern seaboard stretching from Taree in New South Wales to Dimbulah in far north Queensland.

Most of these producers operate relatively small concerns and over 70% of the total production of tea tree oil is from just three or four large-scale plantation companies.

Tea tree oil production areas and their recent annual output
 (The production range represents seasonal variations with weather):

Region	Production Estimates
North Queensland	10-35 tonnes ●
Fraser Coast	15-25 tonne ●
Tweed/Clarence	5-12 tonne ●
Coraki/Casino/Bungawalbyn	220-300 tonne ●
Grafton	10-25 tonne ●
Taree/Port Macquarie	5-10 tonne ●
West Wyalong/Kunnamurra	10-12 tonne ●
Total	265 –407 tonne



Categories of tea tree oil producers:

Category	Number	Scale of production
Large-scale corporate	2-3	<ul style="list-style-type: none"> • Each producing in excess of 40 tonnes p.a. • Account for ca. 50% of total production
Medium-sized farms	5-6	<ul style="list-style-type: none"> • Production range of 5-30 tonnes p.a. • Account for 30% of total production
Small family-owned farms	70-80	<ul style="list-style-type: none"> • Typically, output of less than 5 tonnes p.a. • Combined, account for 20% of the total

Wood Oils

Production of essential oils from the various native wood species was a natural progression from the spice and timber trades dating back to the 1800s.

Australian Sandalwood (*Santalum spicatum*): From the late 1840's through to the early 1900s Australia was a major exporter of sandalwood to India and China.

Within a few years the exports had risen to 1,335 tonnes, representing 45% of the Western Australia's export income.

The debarked wood was originally hauled to Albany, Geraldton or Bunbury by bullock or horse teams, and the opening of the Eastern Goldfields Railway in 1896 gave even greater access to huge tracts of sandalwood.



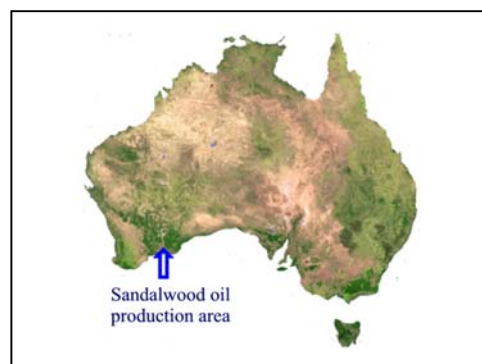
It was later taken by rail and stockpiled at major Australian ports awaiting transportation to Canton, Madras, Singapore and other exotic Asian destinations.

In 1919, a West Australian, HV Marr had a bold vision, to extract sandalwood oil. At its peak in 1930s, production was up to 54 tonnes of oil a year.



However, the project's viability was under threat by the 1960s, due to reduced demand for natural compounds and to the low oil content of Western Australian sandalwood oil as compared to the higher oil yielding Indian species.

During the late 1990s, a new venture - called the Australian Sandalwood Oil Company - was established to produce sandalwood oil from the *Santalum spicatum* species in Albany. This operation has flourished due to a combination of technological innovation and the inherent supply problems being faced by India producers. It now produces over 10 tonnes per annum and has a number of research programs underway to study the oil's therapeutic properties.



Faux or Bastard Sandalwood (*Eremophila mitchelli*): The trade in West Australian sandalwood timber also fuelled interest in a number of other native timber species that displayed similar characteristics. Whilst trade in the timber of such species was often the result of opportunistic and rogue traders, the *Eremophila* species has been singled out as having its own intrinsic value as a substitute for the more expensive *Santalum* species. Oil extracted by steam distillation of the wood is a dark ruby colour with a delightful sandalwood type aroma that blends well with a broad range of fragrance bases. Production today is, however, limited to less than 200-300 kg per annum from sporadic harvesting of wild trees.

Over the years several other wood species have been explored for their commercial potential at various scales. Given the relatively high cost base of producing oils from wood species, such developments have usually been as the result of examining the potential of various by-products of the timber industry. These wood oils include:

White Cypress (*Callitris glaucophylla*): The white cypress pine is a hardy evergreen tree native to the north coast of Queensland. The timber is used extensively for flooring and cabinet timber due to its termite and fungus resistance. Various trials have been undertaken to extract oil from the sawdust and have found it to be relatively high yielding and rich in citronellic acid and guaiol. Currently, small lots of this oil are being extracted for use in natural insect repellents. The output of oil is estimated at between 100-200 kg per annum but production could be scaled up if there were market interest.



Blue Cypress (*Callitris intratropica*): Whilst a great deal of investment has been put into the production and promotion of Blue cypress oil, it has never really attained much commercial success. The oil itself has a deep blue colour with a warm woody aroma, possessing liquorice overtones. It is a good natural source of guaiol and azulene and is claimed to exhibit a range of therapeutic benefits. The major production centre for blue cypress is near Darwin in the Northern Territory where vast reserves of the timber were planted for use by the building industry. Up until recently, production of the oil has been limited to one company with an output of 300-600 kg/pa but the opportunity now has been opened up to other distillers.

Emerald Cypress (*Callitris columellaris*): Like its northern cousins, this species yields a pleasant smelling oil with a distinctive emerald green colour. At present, production is limited, 10-30 kg annually, but it has found its way into some novelty cosmetics and fragrances.

Other wood oils that have been trialled include Ruon Pine, Blackbutt and Casurina.

Citrus oils

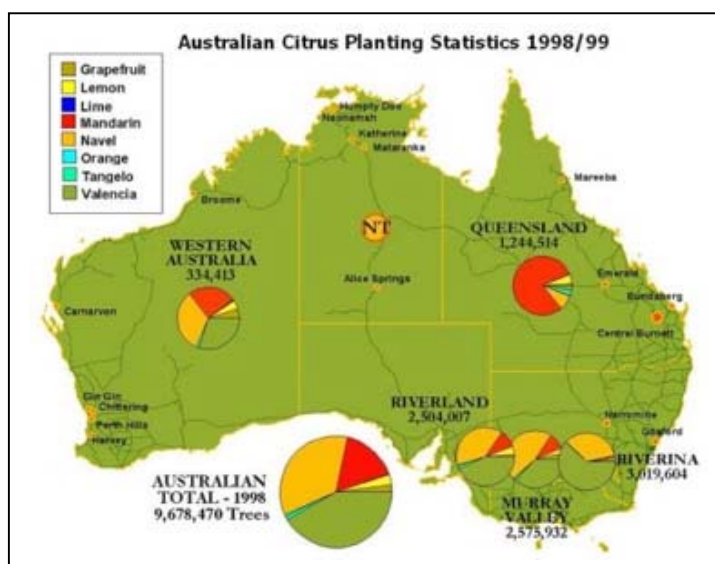
Australia has a fairly sizeable citrus industry, the fourth largest in the southern hemisphere and accounts for around 1% of global citrus fruit production. Oranges are the most important crop.

Most growing operations are of mixed fruit and on a relatively small scale. There are approximately 3,000 citrus growers who cultivate in total about 32,000 ha.

In spite of the total scale of fruit output, the production of citrus oils is relatively small in comparison with Brazil, Argentina, Florida and Italy. The reasons for this are twofold. Firstly, the ready availability of cheaper imported material and, secondly, since there is an industry trend towards smaller juice processing facilities that do not afford the economies of scale provided by large centralised operations.

None-the-less, citrus oils by volume (totalling 50-60 tones annually) still account for a significant proportion of Australia's total essential oil output. In order of magnitude, the main oils are: orange (from both valencia and navel), lemon, grapefruit and mandarin. The principal oil producing regions are located in Mildura (Victoria) and Berri (South Australia) and account for around 50-60 tonnes per annum.

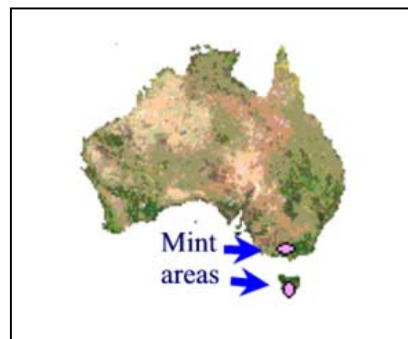
The domestic market consumes most of the production of Australian citrus oil.



Mint

The mint industry is relatively new to Australia. It was first trialled in the 1970s in Tasmania's Huon and Derwent valleys. Mints can be grown in most areas in southern Australia but, as the oil quality is sensitive to the length of daylight, the main areas in which it is grown are the river valleys of Tasmania and northeastern Victoria.

Following the lead set by the US mint industry, the principal species cultivated in Australia are peppermint (*Mentha piperita*) and spearmint (*M. spicata*).



Currently, there are about 300 hectares of peppermint, yielding approximately 20 tonnes of oil per annum. Production of spearmint is much lower with total volumes estimated at between 500-800 kg.

The domestic market consumes around half of the production and the balance is exported.

Other Culinary Herb Oils

Australia's reputation as a food bowl for the Asia Pacific region has historically provided strong agricultural industries. Over the past century, most herbs have been grown predominantly for the fresh and dried produce markets.

In the last 15 years, however, a concerted effort has been made to commercially distil oil from these crops. Presently, the largest producer is 'Essential Oils of Tasmania' which contracts various farmers to grow particular crops for them based upon seasonal demand. The product range includes dill seed, dill weed, parsley seed, parsley herb and fennel. The production volumes vary according to which crops are in seasonal demand but are of the order of between 20-30 tonnes per annum.

In addition, production of blackcurrant bud extract has been developed in Tasmania.

Lavender

The cosmetic and fragrance industry's love of lavender has not escaped Australian farmers' attention.

Commercial production of this oil in Australia dates back to 1921 when C.K. Denny established a plantation in northern Tasmania from French seed stock.

Over the years, the Bridestowe Lavender Farm has undertaken considerable cultivar selection of *Lavandula angustifolia* and built a reputation for its consistent high quality lavender oil.



Lavender at Bridestowe

The Bridestowe plantation remains the only sizeable commercial operation for true lavender oil in Australia and it's an annual production of oil is 1.5 tonnes.

However, considerable interest has been raised elsewhere in the cultivation of lavender for a range of

applications. Presently, there are several small-scale lavender farms dotted throughout the country, predominantly servicing the dried flower and tourist markets. These grow many different species, including the three main oil yielders. Production of oil from these farms is very limited and tends to be mainly from *L. intermedia* x (lavandin), although it is possible to find some quantities of excellent quality *L. angustifolia* oil. The main production regions for these lavender and lavandin oils are Tasmania and Victoria, but operations can be found also in southern and western New South Wales, Queensland and the Margaret river region in Western Australia.

New oils from Australian native species

A relatively new innovation that has experienced considerable growth in Australia is the ‘bush food’ industry. The use of native flora for culinary applications has seen many crops that were previously wild harvested now being grown in plantations and commercial farms. This has in turn led to greater availability of plant stock for oil extraction as well as keen interest in experimentation with various native species for their potential as new essential oil crops.

Whilst a few of these crops have gained some degree of acceptance, production and markets for these oils is still quite limited. Of the crops currently under cultivation, the following merit a mention as either being available in commercial quantities or representing good potential.

Australian lemon myrtle (*Backhousia citriodora*) is an evergreen tree native to Southern Queensland with glassy, green, aromatic leaves. It has a unique lemon aroma that has been described as more lemony than lemon. Its main usage is in the flavour and fragrance industries, although it is becoming increasingly popular amongst cosmetic manufacturers. Current production is estimated as between 5-8 tonne per annum.



Australian lemon tea tree (*Leptospermum petersonii*): This is another evergreen shrub, native to southern Queensland and northern New South Wales. It grows to a height of 4m and has broad, flat, light green leaves with an aromatic lemon scent. The oil produced by the steam distillation of its leaves is high in citral and citronellal making it of interest for use in flavourings and fragrances as well as natural insect repellents. There are quite sizeable plantations established for this species but, at present, supply of the oil (estimated at around 4 tonne pa) is significantly ahead of market demand.



Tasmanian mountain pepper (*Tasmannia lanceolata*) is a small shrub, native to S.B. Australia, and a member of the Winteraceae family. It has tough, dark green leaves with a pungent spicy aroma. The concrete is a dark viscous liquid with a characteristic hot, spicy aroma and is a rich natural source of polygodial. The main extraction of this material takes place in Tasmania, where current production is 1-2 tonnes annually. Large-scale plantations are currently being developed with the aim of significantly increasing production volumes.



Boronia (*Boronia megastigma*) is a small fragrant shrub of the Rutaceae family which abundantly bears yellow and brown flowers in spring. Solvent extraction of the flowers yields a golden yellow absolute with an intense floral fragrance rich in citrus and jasmine notes. It is a rich natural source of beta ionone and finds application in flavours as a fruit essence enhancer. Production in Tasmania is currently 80-100 kg annually.



Kunzea (*Kunzea ambigua*): The Tasmania Spring Flower or Tick Bush is a tall woodland species native to southern Australia. A small-scale plantation in northwest Tasmania is currently distilling an oil from the leaves and marketing it as having pain relieving and anti-arthritic properties. Production is estimated at between 500 –1,000 kg annually.

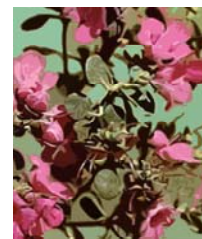


Australian nerolina (*Melaleuca quinquenervia*) is a small- to medium-size paper bark tree that grows in Southern Queensland. Unlike the steam distilled oil of the niaouli chemotype that contains mainly 1:8-cineole, *M. pilliga* yields an oil rich in nerolidol and linalool with a pleasant floral aroma. Currently there are a few experimental plantations, totalling just under 20 hectares, in northern New South Wales and Southern Queensland.



Australian rosalina (*Melaleuca ericifolia*): This evergreen, paper bark shrub with white papery, corky bark and long slender leaves is native to New South Wales and Queensland. The distilled leaf oil has a soft medicated aroma with rosy back-notes, exhibits broad-spectrum antimicrobial properties and is reported to provide some mild calming effects. This oil is produced in small volumes (approx 800 kg/pa) by three or four distillers, located in the southeast and far northern coastal regions of New South Wales.

Bush mints (*Prastanthera* spp): The native mints have found interest for use in a variety of bush foods for their pungent minty taste. Presently most of the crop from commercial plantations feeds the dried herb industry, although some also finds its way into essential oil distilleries. Oil production is fairly sporadic and has not exceeded 500 kg per annum in recent years.



Australia's Exports, Imports and Its Market for Essential Oils

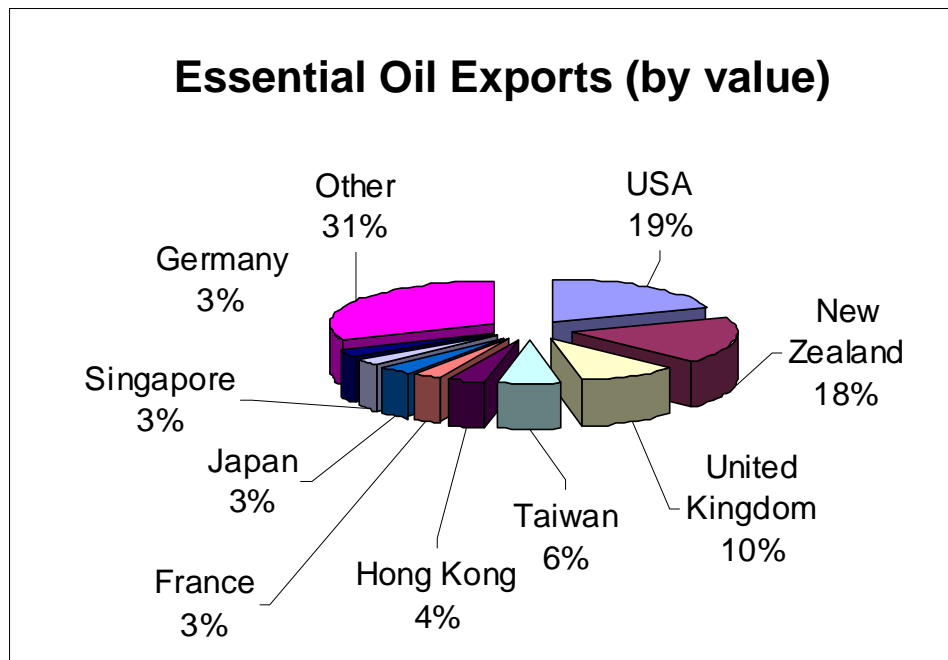
Australia's export and import statistics can be misleading since they are based on the Harmonized tariff codes, which have in-built limitations on detail, and also since many imported oils are often re-exported or incorrectly coded to reduce customs tariffs. The following figures are taken from the Australian Bureau of Statistics records for the financial year, July 2002 – June 2003.

Exports

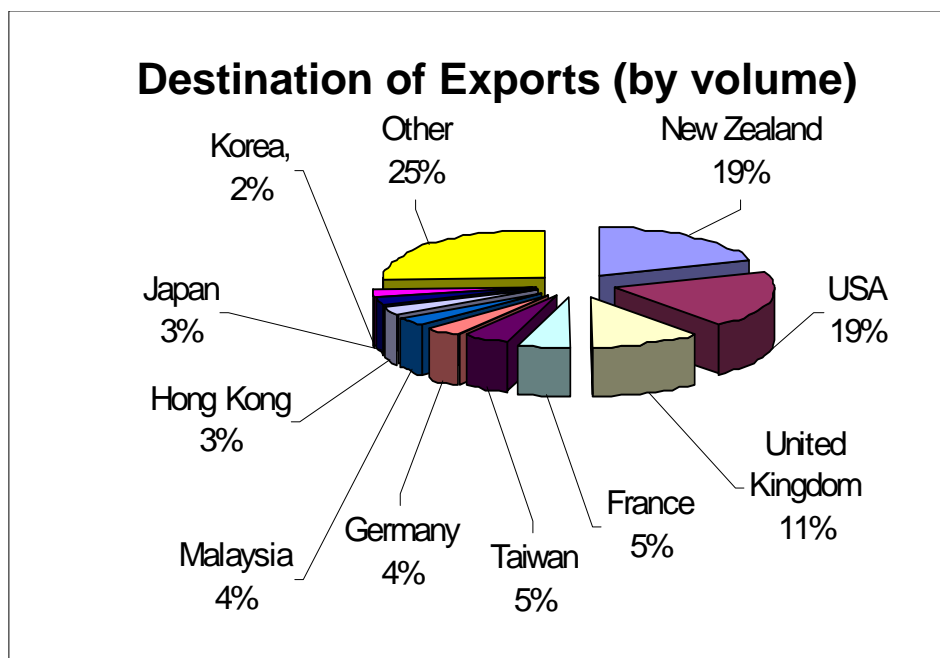
Much of what Australia produces is exported to overseas markets. As indicated by Table 1 and the pie charts at the beginning of the production section, Australia's most important oils are tea tree, citrus, eucalyptus, fennel, sandalwood and lavender oil. Of these, only tea tree, sandalwood and eucalyptus are produced on a globally significant volume scale. This in turn makes Australia a price taker for most of the essential oils it trades on the world market. The exceptions are its rare indigenous species, such as boronia, lemon myrtle and Tasmanian mountain pepper, as well as some specialty oils that have earned a reputation for being of unparalleled quality - such as Bridestowe lavender.

Table 2: Australian exports of essential oils, July 2002 to June 2003

Essential oil	Quantity (kg)	FOB value (AU\$)
Lemon	3,144	125,760
Lime	148	7,993
Orange	11,898	100,644
Other citrus	5,428	175,000
Lavender/lavandin	1,125	180,000
Peppermint	19,592	457,160
Other mints	770	51,596
Eucalyptus	99,604	1,821,959
Tea tree	249,523	5,339,865
Lemon myrtle	3,585	573,600
Sandalwood	6,125	3,062,500
Fennel	10,582	476,190
Other essential oils	16,567	745,515
Total	428,091	\$13,117,782



The major export markets for Australian essential oils are New Zealand (19%), USA (19%), UK (11%), France (5%), Japan (7%), Germany (5%), South America (3%), China (5%), Mexico (4%), Middle East (3%). New Zealand, the USA and UK jointly account for about 50% of all exports.



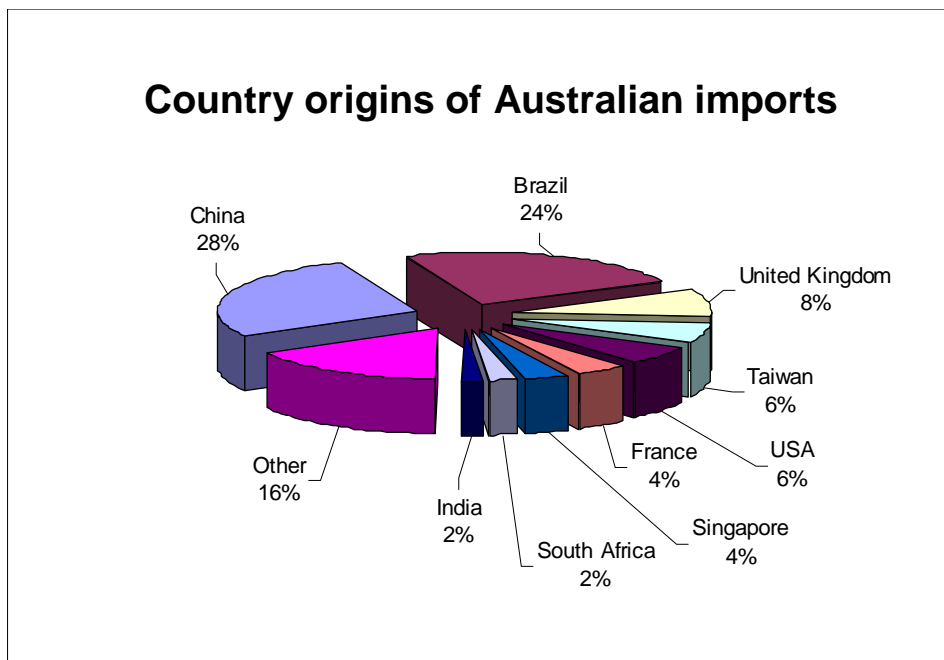
Imports

Australia is a net importer of essential oils and, whilst considered to be a relatively developed market, it represents less than 1% of the total world market. In the 2002 calendar year, imports totalled 1,641,790 tonnes with a total CIF value of A\$23.4 million. The statistics reveal the major identifiable oils as citrus, peppermint, mint and lavender. However, the largest individual components of Australia's imports are citrus and eucalyptus oils; the latter being hidden under the 'Other oil' code.

Table 2. Australian imports of essential oils, July 2002 to June 2003

Essential oil	Quantity (kg)	FOB value (AU\$)
Bergamot	3,656	\$146,218
Orange	536,098	\$2,337,338
Lemon	61,934	\$1,199,839
Lime	33,237	\$1,007,503
Other citrus	24,867	\$989,861
Geranium	2,610	\$260,108
Jasmin	200	\$85,058
Lavender and lavandin	43,196	\$2,166,733
Peppermint (<i>M. piperita</i>)	42,584	\$1,607,806
Other mints	18,432	\$766,826
Vetiver	145	\$13,141
Other oils (inc eucalyptus)	874,831	\$12,799,112
Total	1,641,790	\$23,379,543

The principal origins of Australia's essential oil imports in 2002 were China (28%), Brazil (24%), UK (8%), USA (6%), France (4%), Germany (3%) and India (2%).



Regulatory and marketing issues for suppliers to the Australian market

For any new producer or supplier entering the Australian essential oil market there are a number of issues to consider.

Does it have regulatory approval?: Australia has a relatively high level of regulation both in terms of what can be produced and how it is produced. Before any new essential oil can be imported or produced it must be registered and assessed by the relevant governing body.

For cosmetic, personal care and industrial applications, the governing body is the National Industrial Chemical Notification and Assessment Scheme (NICNAS). There are varying levels of documentation required for assessment based upon the quantities being sold and perceived safety risk. The cost of registration and assessment can range from two or three thousand to hundreds of thousands of dollars.



In addition to NICNAS approvals, the National Drugs and Poisons Schedule Committee class certain essential oils as poisons. Any oil that is scheduled as a poison must be clearly labelled on product packaging when present at levels greater than 25%.

Does the oil comply with relevant standards?: If the oil is intended for use in a therapeutic product as the active ingredient, it must also comply with the latest monograph listed in a relevant pharmacopoeia (i.e. BP/EP/JP/USP) or international drug agency. Manufacturers are now required to validate that the

oil meets specification and inspectors from the Australian Therapeutic Goods Administration (TGA) randomly test compliance. Similar standards also apply for veterinary and agricultural products that are governed by the Australian Pesticides & Veterinary Medicines Authority (APVMA).



For food and flavour products, there are also restrictions as to what can and cannot be used. Any essential oil that is intended for incorporation in food and flavour applications must meet the relevant food codex, food additives compendium, pharmacopoeia or supplemental testing criteria.



In order to comply with these regulations, suppliers need to ensure that they perform regular GC analysis of individual batch lots and to supply this information with each delivery. For uniformity, all testing should be done to ISO / Australian Standards and Material Safety Data Sheets (MSDS) should comply with Australian format.



Are manufacturing methods acceptable?: From a manufacturing perspective, there are also many laws that must be complied with. Australia has very strict workplace safety and environmental protection laws to ensure that products are handled safely and do not pollute or destroy our natural resources. These cover everything from the clothing worn by farm workers to how effluent run-off is managed.

In addition, these workplace safety laws are placing greater emphasis upon packaging and labelling of oils. This means that packaging should include all relevant safety warnings and in some instances weight limits apply to individual pack sizes.

The cost of complying with such regulations often makes it very difficult for Australian manufacturers to compete with developing nations, where such matters are often given lower priority.

Bill McCartney is the Chief Executive Officer of the Bronson and Jacobs Group and has over 35 years experience in the importation, production and marketing of essential oils. Bill joined Bronson and Jacobs in 1968 and has since been instrumental in the growth and development of the Australian Essential Oils Industry. Amongst his major contributions are the strategic acquisitions of Australian Tea Tree Plantations, Bridestowe Estate Lavender Plantation and Essential Oils of Tasmania, which combined form the largest essential oil, producing entity in Australia.

