PRIMARY INDUSTRIES AND RESOURCES SA
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FS No:

FACT SHEET

Wattleseed production

Introduction

There is a growing food industry demand for wattleseed, particularly for seed from the Elegant Wattle *(Acacia victoriae)*, which is roasted and milled to produce a highly palatable and nutritious flour. It is a very versatile ingredient, excellent in a broad range of sweet and savoury applications such as casseroles, curries, breads, dampers, cakes, biscuits, pastries, scones and pancakes, dessert sauces, ice cream and cream. Wild-harvested Elegant Wattle seed from areas such as Alice Springs, Hawker-Port Augusta and Broken Hill has largely supplied the food industry to-date. It is estimated that approximately 10 tonnes of seed was harvested from the wild in the 1997/98 season and sold at a wholesale price of around $10.00 to $12.00 per kilogram.

Wild harvest poses some environmental and food safety concerns and the erratic supply and price of wild product have acted as a constraint to market growth. These factors have stimulated interest in commercial cultivation and although the industry is still small and many production questions remain unanswered, expansion is likely.

Fig 1. *A.victoriae*; whole stem and ground seed

Other factors may also contribute to the further development of wattleseed production, including the potential for the use of Acacias in soil rehabilitation, dryland salinity mitigation, as a source of fodder, for windbreaks and as a host plant in quandong plantations.

Elegant Wattle (*Acacia victoriae*)

The Elegant Wattle (also known as Prickly Wattle, Gundabluey and Bramble Wattle) is a very adaptable and resilient species that grows naturally in SA, NT, WA, Vic, NSW and Qld in hot, low rainfall areas (125mm to 500mm) on a broad range of soil types. It is tolerant of heavy frosts, moderate drought, soil lime and moderate soil salinity. It will also tolerate brief periods of inundation and heavy textured soils.

The plant is an evergreen, spreading and generally multi-stemmed small tree (2m to 5m high). Sharp spines are present at all stages of development, although spine-free (or almost so) plants are occasionally encountered. Leaves are blue/grey-green in colour and are 20 to 50 mm long.

It is a nitrogen-fixing legume and a palatable stock forage species, which is browsed despite the sharp spines. Cattle are reputed to thrive on browsing the plant when in seed.

The plant exhibits moderate growth rates initially; becoming rapid once established, with early flowering (often in the second year after planting) and moderate to heavy crops. The tree generally lives for around 10 years.

Flowers are cream coloured and occur in August to December, depending on area. The round seeds, which mature between November and January, are borne in papery, oblong pods on the outside of the canopy. Mature pods fall readily and the seed can be separated with simple mechanical techniques.

This crop lends itself to dryland and irrigated cultivation. With attention to early pruning, the multi-stemmed habit can be trained into a single stemmed form suited to mechanical harvesting.

Other species

Several other Acacia species with edible seeds have attracted attention as being potentially suitable for cultivation. However, the market demand for these species is currently low or non-existent and any prospective producer would be wise to carefully investigate sales outlets prior to planting. These species include -

A. murrayana, which has a number of common names, including Colony, Murray's and Sandplain Wattle. It has a wide natural distribution, favouring well-drained soils in arid and semi-arid country from Narrabri in New South Wales to Shark Bay in Western Australia. Its growth and yields are good under favourable conditions, but it does not tolerate humid environments or drought conditions.

A. pycnantha, commonly known as Golden Wattle, grows on a range of soil types and is widespread in Victoria and occurs westwards to the Eyre Peninsula in South Australia and also near Canberra in the ACT and in southern New South Wales. Yields can be variable, though heavy in some years, and in cultivation plant deaths and pest and disease problems are reported to be common.

Fig 2. *A.retinodes*; stem and seeds

A. retinodes, commonly known as Swamp Wattle, Silver Wattle or Wirilda, occurs in south-eastern South Australia and southern Victoria as two forms; variety *retinodes*, which commonly occurs on poorly drained soils in open forests, inland from the coast; and variety *uncifolia*, which commonly occurs on calcareous coastal sand dunes. Irregular flowering and extended ripening may require multiple harvests and yields may be less than other species, although flavour is reported to be good.

Management approaches and issues

There a range of basic management approaches and issues that prospective wattleseed growers and the wider industry will need to address, including –

Species, provenance and cultivars: Growers will need to determine the species that they wish to plant. While on-farm experimentation with a range of species could provide valuable information and perhaps uncover a useful species, it also poses a higher degree of production and marketing risk. Since *A. victoriae* is the current industry 'standard' and has a more secure market this species would normally be the first choice for most growers. Other species may have potential as an addition to an *A. victoriae* main planting or, in certain situations, as an alternative to *A. victoriae*.

Because of the genetic diversity of Acacias the provenance (i.e. geographic source) of planting material may prove important. Among the factors that may be influenced by provenance are growth rate and form, spininess, yield and adaptation to soils and climates.

In the longer term, cultivars (i.e. cultivated varieties - clonally propagated selections) may become the norm for planting material, as is the case in many other crops.

Field Crop vs. Horticultural Crop: Acacia production could be approached as a minimal input large-scale field crop or a more intensively managed and smaller-scale horticultural crop. The field crop approach could involve practices such as direct seeding and dryland production, while a horticultural approach could involve planting established trees and irrigation. A combination of practices could also be employed (eg. planting established trees and dryland production). A field crop approach would aim to reduce production costs, while accepting lower yields, whereas a horticultural approach would aim to maximise yields, at a higher cost. As yet, the best management philosophy has not been determined and it is likely that a range of approaches may prove successful, depending on geographical areas, species and existing farm management practices.

Input management: The management of inputs, such as water and fertilizers, is likely to have an impact on tree growth rates, yields and plantation longevity, as well as interacting with other practices, such as pruning and training. However, optimum programs and strategies have yet to be determined.

Pests, diseases and weed control: The extent and control techniques for pests, diseases and weeds under cultivated conditions are also undetermined at this stage.

Pruning and training: Experience to-date indicates that pruning and training to achieve a single straight stem, suitable for tree shaker-style mechanical harvesting, appears to be feasible and necessary for normally multi-stemmed species, such as *A. victoriae.*

Harvesting: Mechanical harvesting appears to be a feasible proposition, with tree shaker-style machines, similar to those used in nut and olive production, the most likely option.

Rejuvenation: Because Acacias may be relatively short lived, methods to rejuvenate plantings may be an important aspect of commercial production. Coppicing (cutting trees back almost to ground level to stimulate further growth from dormant trunk buds – although this would also tend to result in multiple stem development), pollarding (cutting trees back to a point some distance above ground level, to stimulate growth and particularly the development of a bushy crown) and/or shallow ripping to induce regrowth through suckering have been proposed, although these methods have yet to be trialed and perfected.

Further reading

Edible Wattle Seeds of Southern Australia: A Review of species for use in semi-arid regions. (1998) by Maslin *et al* is a useful reference work on species potentially suitable for cultivation and is available from CSIRO publishing (telephone 03 9662 7666).

Conclusion

Although there is still much to be learnt about wattleseed production, the market demand for the product and our steadily growing knowledge base is likely to continue to stimulate interest and further plantings.

While it is difficult to predict costs and returns with any accuracy at this stage, some reasonable assumptions that could be applied include:

- A planting layout of between 6m x 3m to 4m x 3m (555 to 833 trees/hectare),
- a yield in the fourth year from planting of 3 to 5kg/tree (1,667 to 4,165 kg/ha),
- and a farm gate price of perhaps $5 per kg for cleaned seed,
- giving a per hectare gross return of between $8,335 and $20,825.

While the annual cost of production (which is more difficult to estimate and is likely to vary significantly from planting to planting) has to be deducted from this gross return, the figures as such do indicate that wattleseed production may be worth considering as a potentially profitable farming alternative.

Further information

Further information on native crops is contained in the other publications in this series:

Australian Native Citrus – Wild Species, Cultivars and Hybrids
Bush Tomato Production
Miscellaneous Native Food Crops – Davidson and Illawarra Plums
Miscellaneous Native Food Crops – East Coast Tree Species with Potential in SA
Miscellaneous Native Food Crops – Herbs and Vegetables with Potential in SA
Mountain Pepper Production
Muntries Production
Native Food Background Notes
Native Food Crops – Frequently Asked Questions
Native Food Crops – Sources of Information
Quandong Production
Sunrise Lime Dieback
The Native Food Industry in SA
Wattleseed Production

These fact sheets are also available for download from the Australian Native Produce Industries website at www.anpi.com.au

Acknowledgements

The assistance and input of Andrew Beal, Managing Director and Graham NcNaughton, Nursery Manager, Australian Native Produce Industries Pty Ltd in the preparation and review of this publication is gratefully acknowledged.

Last update: November, 2001

Agdex: 350/30

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