

# Enterprise Profile - Hemp

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## **Hemp production in Tasmania**

Industrial hemp is the name used to describe low THC hemp varieties of Cannabis which have the potential for commercial uses. THC is the drug component of illicit varieties of Cannabis. There are close to 2,000 varieties of Cannabis of which only a handful are high in THC.

Low THC Cannabis can be grown in Tasmania under a licence administered by the Department of Health and Human Services under the 1971 Poisons Act. License conditions are similar to those imposed on the growing of poppies and compliance is monitored by the Tasmanian Poppy Advisory and Control Board.

Tasmanian growing conditions are well suited to hemp production and the hemp seed produced in Tasmania is sought-after by processing companies due to its superior quality relative to that available on the mainland.

## **Hemp marketing opportunities**

Industrial hemp has two main uses; those based on the fibre content of the plant's stem and those based the seed and oil from the seed.

The outer stem, or bast fibre, is strong and suitable for making clothing, canvas and rope. More recently bast fibre has been developed into composite materials such as car panels and building materials in Europe and Canada. The inner stem, or hurd, is suitable for coarse fibre products such as animal bedding.

Australia currently imports hemp seed oil for use in cosmetics. Food Standards Australia New Zealand (FSANZ) has not identified any public health and safety concerns associated with consuming hemp foods. However, at present, hemp cannot be used in food in Australia and New Zealand as it is prohibited in the Australia New Zealand Food Standards Code. An exception is made for hemp seed oil in New Zealand.

Whole hemp seed is composed of approximately 45 per cent oil, 35 per cent protein and 10 per cent carbohydrates and fibre. Hemp is one of only two plants that contain both essential fatty acids (Omega 3 and Omega 6) as well as Omega 6 gamma linolenic acid, which has been found to have a range of human health benefits. Internationally hemp seed oil is used in a range of cosmetic, pharmaceutical and food products for humans and animals. Food products for human consumption are generally marketed as niche products based around the natural and health food segment of the market.

Hemp industry groups have been pushing for changes to the code to bring it in line with European standards, which would permit the sale of hemp-based products for human consumption. The completion of the FSANZ assessment is scheduled for public comment in mid November – late December 2011. A final gazetted decision is not expected before mid June 2012. If successful, the changes to the code would open up a range of high-value market opportunities for hemp producers.

## Opportunities for hemp production in Tasmania

The first plantings of industrial hemp in Tasmania focussed on the potential to use hemp fibre as a paper pulp alternative. The investigations found that while hemp had the potential to improve the strength characteristics of paper pulp, the scale of production needed to make the harvesting transport and processing of hemp fibre economic, is unlikely to be achieved in Tasmania. Australia's first hemp fibre processing mill is currently being constructed in the Hunter Valley, New South Wales.

Opportunities for industrial hemp in Tasmania are now focused on hemp seed production. During the last five years a number of semi-commercial scale hemp crops have been grown in the Cressy to Bishopsbourne area. Hemp seed produced from these crops has mainly been used for commercial planting seed stock and seed extract products.

As a rule growers need to focus on producing either hemp fibre or hemp seed as these crops have different growing and harvesting requirements. However, the stem residue remaining after harvesting hemp seed can be harvested separately and dried. Applications include ground cover mulches in orchards and bagged products for retail nurseries. Current legislation makes it very difficult to sell hemp as mulch due to the risk of seed transfer in the mulch material.

A viable Tasmanian hemp industry would most likely need to focus on the potential high-value human consumption segment of the market. The scale economies achievable in Tasmania are likely to be too low to support a hemp seed industry that only supplies seed for low-value non-human uses. Without access to the potentially high-value hemp seed for human consumption market, the Tasmanian industry is unlikely to see commercial expansion.

## Economics of hemp production

As industrial hemp production in Tasmania is still in a semi-commercial stage, the figures presented are indicative only and may vary depending on individual production practices.

A range of hemp seed yields have been obtained from Tasmanian crops, the highest being around 2t/ha, with most crops reliably producing 1t/ha of clean dried seed. Current prices paid are in the order of \$3.50/kg.

Table I presents an indicative hemp seed gross margin prepared by Macquarie Franklin. At around \$1,300/ha hemp seed production would be competitive with a range of crops such as cereals, lucerne and pasture seed production. Improvements in crop management that resulted in average yields reaching 2t/ha would significantly improve the competitiveness of this crop.

Hemp can be grown on a range of soils, yet performs best in free draining soils. To produce a commercial seed crop with high quality and yield, basal fertiliser applications are necessary. At present no pre or post emergent herbicides are registered for hemp in Australia and weed control is reliant on strong, even germination, and out-competing weed species.

Table I: Indicative Hemp Seed Gross Margin

<b>Income</b>	<b>\$/ha</b>
Hemp seed	\$3,500
<b>Total Income</b>	<b>\$3,500</b>
<b>Variable Costs</b>	
Seed	\$60
Fertilizer / lime	\$380
Sprays	\$100
Irrigation	\$110
Water cost	\$210
Contract work	\$120
Contract harvest / cartage	\$940
Tractor & plant	\$200
Casual labour	\$60
Other	\$30
<b>Total Variable Costs</b>	<b>\$2,210</b>
<b>Gross Margin</b>	<b>\$1,290</b>

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