

Submission to

Tasmanian Hemp Industry Inquiry

conducted by

the Standing Committee of the Tasmanian Parliament on
Environment, Resources and Development

Background:

Tasmanian Irrigation Pty Ltd (TI) is a State-owned company responsible for development and operation of publicly subsidised irrigation schemes in this state.

Sustainable irrigation has emerged strongly as a very major economic driver for Tasmania and one which enjoys comprehensive community support and licence.

More than half the value of Tasmania's agricultural production¹ comes from approximately the 7% - 8% of Tasmanian farmland that is irrigated.

It is in this context that TI draws the committee's attention to the benefits of the addition of a hemp industry to the enterprise mix of Tasmanian farms.

Hemp's irrigation agronomy:

Water requirements for irrigated production vary widely from 1 megalitre (ML) or less per hectare (ha) for crops such as most cereals up to 6 ML per ha or more for intensive pasture uses such as dairy. Many vegetables (carrots, onions) require 3.5 ML/ha, cauliflowers require more than 4 ML/ha and potatoes require about 5 ML/ha.

Hemp is a short season crop, suited to a variety of soils and climates, noting that it has some frost susceptibility. Trials to date indicate that hemp requires approximately 2 ML- 3 ML of water per ha, which places it at low to lower mid-range of water consumption.

Hemp is an annual summer crop which may be grown for seeds (primarily for oil extraction) or for fibre. Tasmanian trials indicate that hemp crops for seed production are best planted here mid- to late-November and cropped in late February when the plants are 1800mm to 2m tall. Hemp crops grown for fibre are planted earlier (October) but still cropped in late February when they are about 3m tall.

Thus the growing period is a short one from late spring to the end of summer coinciding with the drier part of the year. Hemp dislikes having wet feet. Trial results reported to TI indicate that both under- and over-watering measurably impact plant thrift, affecting growth and yield.

These attributes and characteristics combine to make hemp a good candidate crop for controlled application of a modest amount of irrigation. The plant's relative hardiness suggests that it is suitable for a wide cross-section of Tasmanian farmland. Limiting factors

¹ Australian Bureau of Statistics, Value of Agricultural Commodities Produced (7303.0) 2008-09, Table 2 , p6, c.f. Australian Bureau of Statistics, Water Account (4610.0) 2008-09, Table 5.19 *Gross Value of Irrigated Agricultural Production*, p 79

determining suitable location include among other matters the incidence and severity of frost and, due to well-drained roots aiding thrift, the presence of flat and shallow duplex soils with clay beneath.

TI is further advised that, other things being equal, hemp may be more beneficial to the soil than some other crops. Whereas replenishment of soil nutrients is a major factor in potato production for example it is very much less so for hemp. The reasons stated for this are partly due to the plant's metabolism being less demanding of soil nutrients than many other crops and partly due to the complementary nature of hemp crops in the overall farming enterprise. The cycle from planting to harvest is short but not short enough to crop twice a year in Tasmania. It is difficult to imagine hemp developing a role as the sole crop of a farm enterprise as the land would not be put to productive uses for the remaining 70% of the year.

Hemp's potential in enterprise mix:

Rather, hemp's very strong credentials are as a new crop in the enterprise mix of Tasmanian farms. Thus farms are managed according to the requirements of the dominant enterprises with hemp occupying niches in crop rotation and/or regions on-farm which may not be suitable for more demanding crops. Such an addition represents a highly valuable extension to farm options.

Hemp is unusual in irrigated agriculture in that all above-ground parts of the plant are commercially useful. Seeds may be used for either oil or for propagation. If cold-pressed for oil, the meal left over after pressing is high in protein and may be used in Australia for stock feed or, in many other countries, incorporated into health bars or milled for hemp flour. After heading hemp plants for seeds, the remaining stubble is usable as garden mulch. Tasmanian studies indicate the hemp mulch has excellent water retention properties, that it offers good weed suppression before decomposing well in the ground and that the study plots generally had improved earthworm populations.

The outer layers of the stalks produce fibre suitable for clothing, paper etc. The Ecofibre company in the Hunter Valley has developed major infrastructure for fibre production from hemp. The longer growing season there means that its hemp trials are focussing on growing hemp for fibre but these climatic conditions means it gets poorer results for seed production than the Tasmanian trials. Ecofibre is sourcing much of its seed requirement for its 100ha fibre crop from Tasmanian hemp trials.

Hemp also has been trialled in Tasmania as a green manure crop. That is, the crop has been almost fully grown but before seed production is ploughed back into paddocks to boost soil nutrient load. A subsidiary benefit is said to be that the plant's long tap root assists break up of clods to improve soil structure in poorer regions of farms.

Conclusion:

When coming to its conclusions and formulating recommendations, Tasmanian Irrigation urges the committee to consider:

- the wide suitability of hemp for Tasmanian soils and climate;
- the crop's irrigation agronomy; and,
- its potential and role within the enterprise mix of Tasmanian farms.

In the event that water from Tasmanian Irrigation schemes is used for hemp production, this may only occur within the sustainability framework which TI has established for *all* uses of scheme water. Water may only be applied on-farm in accordance with a completed Farm Water Access Plan (Farm WAP) which comprises soil, water and biodiversity modules. Among other matters, these ensure that water quantity and soil type are appropriate to sustainable irrigation practices.

A handwritten signature in cursive script, appearing to read 'Chris Oldfield', written in dark ink.

Chris Oldfield
Chief Executive
Tasmanian Irrigation

23 April 2012