



## **Supporting Document 3**

**Application 1039**

# **Low THC hemp as a food**

**Approach for impact assessment**

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## Executive summary

- This document supports the application for amendment of Standard 1.4.4 – Prohibited and Restricted Plants and Fungi of the *Australia New Zealand Food Standards Code* to permit the use of products from *Cannabis sativa*, with low levels of THC, as food. The purpose of this document is to consult stakeholders and to obtain further information to improve the rigour and comprehensiveness of FSANZ's analysis. The paper sets out our proposed methodology and seeks to solicit further input with regard to the expected market size and the regulatory burden.
- This document uses cost benefit analysis to estimate the impact of regulatory change on the industry, governments and consumers. It sets out details of our proposed approach for estimating costs and benefits for the identified impacts, an increase in market size for hemp foods and regulatory costs for businesses and government. It also provides an initial qualitative evaluation of the impacts of the different regulatory options. More rigorous costing estimates will be developed if more information becomes available. However, it is not a regulatory impact statement as the Office of Best Practice Regulation is of the view that one was not required in this instance due to the deregulatory nature of the application. It is limited in scope to available information.
- The economic analysis will attempt to measure the benefits and costs from the different regulatory options. The principal benefit to be considered is the potential growth of the hemp industry and the expected gains for businesses from this market. The principal costs to be considered are the economic burden for businesses and governments created by regulation. Other possible impacts from permitting hemp foods will also be considered to ensure an appropriately broad analysis. These include the potential health benefits of increased consumption of low THC hemp and broader industry development. Other costs are the potential for difficulties and complications imposed on law enforcement agencies if hemp foods are approved. However, significant difficulties are anticipated in quantifying these costs and benefits and a qualitative consideration of them may be the only option.
- The proposed methodological approach for estimating the market growth related benefits is to estimate the Australian and New Zealand market potential from the Canadian hemp market with regard to hectares utilized, number of licences, export value and import value. The approach for the costs of regulation imposed on industry and governments is based on the current approaches in Australia and New Zealand using activity based costing.
- Canadian market data with regard to number of businesses and returns to the hemp industry indicates that the hemp industry may benefit significantly from introducing a broader range of hemp products. It is assumed that the number of businesses in the market will increase with the range of products permitted. However, an Australian and New Zealand hemp food market will require time to develop, approximately 7 to 10 years.
- Additional costs for businesses are mainly linked to licensing requirements and testing of seeds. Testing of seed with regard to viability would also increase costs for businesses, but would possibly only be required in option 2C. Costs for governments increase because the number of licences to assess will increase and because methods for enforcement, other than food enforcement, might need to be revised. As for hemp fibre and hemp oil, costs of licences are partly recovered at the moment. Initial estimates would suggest that the yearly turnover and potential profits of hemp food businesses may be sufficient to offset the regulatory costs.
- The benefits to industry and many of the variable costs of regulation are likely to be highly correlated. If cost recovery arrangements are in place this will fully or partially offset the cost to governments, while at the same time increasing costs to industry.

- In summary:
  - Option 1 assumes no changes.
  - Option 2A limits the potential market to low THC oil products. Only a modest number of new businesses will be assumed for the purpose of analysis.
  - Option 2B provides an opportunity for low THC processed hemp seed products (which includes hulled hemp seeds). A moderate number of new business entrants will be assumed for the purpose of analysis.
  - Option 2C permits low THC in whole hemp seeds and hemp seed products as food. Option 2C provides for the largest range of hemp food products, but costs may also increase because of stricter compliance and enforcement measures. This option may also introduce additional costs for law enforcement agencies due to the potential for confusion between viable seed for prohibited and permitted varieties of Cannabis. The largest number of new industry entrants will be assumed under this option.
  
- The overseas data used in this report is indicative rather than definitive given the data gaps that exist. However, a clear market potential for hemp foods appears to exist. The creation of this new market will give existing growers an opportunity to obtain additional revenue from their crops. New participants will only enter the market if benefits exceed the next best use of inputs. This means that benefits will be highly correlated with variable regulatory costs.
  
- Input provided in response to the issues raised in this document, as well as information from further planned targeted consultation, will be used to develop a more detailed analysis.

# 1. Introduction

This document supports the application for amendment of standard 1.4.4 – Prohibited and Restricted Plants and Fungi of the *Australia New Zealand Food Standards Code* (the Code) to permit the use of products from *Cannabis sativa*, with low levels of THC, as food. In particular, it uses cost benefit analysis to estimate the impact of regulatory change on the industry, governments and consumers. A detailed outline of the regulatory problem is provided in the assessment report.

## 1.1 Objective

The objective of this document is to investigate the benefits and costs from a proposed change of the Code to permit the production and consumption of hemp foods in Australia and New Zealand. Benefits will be realised from the potential growth of a hemp food industry. Costs are considered to be the economic burden for businesses and governments caused by the licensing process for the industry. Other possible impacts from permitting hemp foods have been identified, described and evaluated. Quantifying these impacts is outside the scope of this study and not feasible due to a lack of relevant data. A detailed description of the objectives of the application is provided in the assessment report.

## 1.2 Stakeholders

The affected parties for this application include:

- those sectors of the food industry wishing to market the food products containing industrial hemp
- consumers who want and value hemp food products
- Australian, State, Territory and New Zealand Government enforcement agencies that enforce food regulations
- those presently within the hemp industry who may be able to obtain further value from their present products and potential new entrants to the industry
- importers who wish to import hemp products
- other law enforcement agencies, including police, that enforce illicit drug legislation.

A detailed description of the stakeholders of the application is provided in the assessment report.

## 1.3 Regulatory options

This analysis estimates costs and benefits for the following four regulatory options:

- Option 1: Reject the Application, thus not approving the use of low THC foods
- Option 2A: Prepare draft variations to permit the use of low THC hemp seed oil products only as food with maximum limits in the Code
- Option 2B: Prepare draft variations to permit the use of low THC processed hemp seed products (which includes hulled seed but excludes viable hempseed) as a food with maximum limits in the Code
- Option 2C: Prepare draft variations to permit the use of low THC whole hemp seeds and hemp seed products as food with maximum limits in the Code.

A detailed description of the regulatory options of the application is provided in the assessment report.

## 2. Impacts

Permitting the use of low THC hemp foods has a number of implications for stakeholders. The identified impacts<sup>1</sup> are summarized in the following table:

**Table 2.1 Impacts from permitting hemp food to be considered**

Impacts to be considered:		Direction and magnitude when allowing hemp food (+benefit, -cost)
1.	Food manufacturers would be provided with the ability to innovate and provide hemp food to the Australian and overseas markets.	+
2.	Access to potential export/import markets. Nader (2001) estimates the retail value in 2000 for US hemp food is about US\$25m. <sup>2</sup> The Australian industry estimates the potential export/import market to be \$A50-80m yearly in Asia (consultation).	+
3.	Potential for employment. The estimated number of work hours to grow hemp compared to wheat is 8 hours compared to 4 hours per hectare. Therefore hemp, when cultivated profitably would create more employment.	+
4.	Access to a growing local market. It is estimated that the food industry could be worth \$A50m over 7-10 years (consultation).	+
5.	The hemp industry will be able to obtain additional revenue from crops. Returns on hemp seeds are potentially higher than hemp fibre at \$A16,000 per ha. <sup>3</sup> Seeds currently used for other purposes might be expected to yield double the price if used for food consumption. Therefore there is a real financial loss to farmers if hemp foods continue to be prohibited.	+
6.	In contrast to fibre, seeds can be processed and marketed for consumption on a small scale by small farmers with low costs (100ha compared to 10,000ha for fibre). Farmers with smaller farms will potentially be able to enter the industry.	+
7.	Consumers will benefit as food manufacturers will be able to provide foods with nutritional qualities at a lower price. There is a cost to other foods to reach nutrition levels that hemp already has. The Canadian hemp trade alliance cites at least 20 studies of clinical trials for good nutritional effects of hemp on diabetes, cardiovascular diseases and reducing weight. <sup>4</sup>	+
8.	Businesses may be able to achieve some risk reduction due to diversification of markets.	+
9.	Government or law enforcement agencies will need to adopt regulation and implement compliance and enforcement processes and controlled licensing.	-
10.	Government stakeholders identified the possibility of road drug tests and work place drug tests being compromised due to the consumption of hemp food.	-
11.	Governments will potentially have research costs to develop compliance and enforcement plans.	-

<sup>1</sup> Please note that this list is just listing those issue that have been raised by stakeholders and there would be some clear double counting if any quantitative totalling of these items was attempted without further analysis.

<sup>2</sup> R. Nader (2001), DEA Bans Industrial Hemp Foods; [www.woodconsumption.org](http://www.woodconsumption.org), accessed 14-10-2011.

<sup>3</sup> P. Benhaim, How to grow hemp, p.10. internet: [www.startahempbusiness.com](http://www.startahempbusiness.com), accessed 16-08-2011.

<sup>4</sup> [www.hemptrade.com.ca](http://www.hemptrade.com.ca). accessed 14-10-2011.

Impacts to be considered:		Direction and magnitude when allowing hemp food (+benefit, -cost)
12.	Consuming hemp food may cause evidentiary problems in relation to drug enforcement activity. This is contested by literature in the case of testing of blood and urine. <sup>5</sup>	-

FSANZ has collected information on the impacts of hemp foods for different stakeholders. This has included government and industry stakeholders. Contact has also been made with overseas governments where hemp foods have been permitted for a significant period of time.

- 1) **FSANZ seeks input and evidence in relation to the size and likelihood of the above impacts**
- 2) **Are there any further impacts that you believe FSANZ should be aware of? Please provide evidence of these impacts if possible.**

### 3. Methodology

For the estimation of benefits and costs, different methodological approaches have been used. Section 3.1 describes the methodology used to estimate the market potential for the hemp industry in Australia and New Zealand. Section 3.2 describes the methodology for estimating the economic burden to industry and state/territory governments.

#### 3.1 Methodology for benefits

The potential of an Australian and a New Zealand hemp market that includes hemp foods is estimated by benchmarking with the outcome of the most comparable country, in this case Canada. The benefits to industry that result from having a hemp market that includes hemp foods are estimated by converting Canadian hemp production data with OECD GDP values<sup>6</sup> to Australian and New Zealand equivalent hemp markets.

##### Best benchmark

Hemp is cultivated in Canada, China, Thailand and a number of European countries, in particular France, Germany, Romania and the UK.<sup>7</sup> The US market is limited to hemp food imports. The European markets are subsidised, which means that prices are not representative. China and Thailand have not been chosen due to their currency values on international markets. The best benchmark is therefore the Canadian market.

Canada allowed the whole range of hemp production from fibre to seeds, including export and import in 1998. Since then a small scale hemp industry has developed. The market performed relatively well in the first ten years, but was subsidized in 2010 for the first time by the Canadian government in order to increase production to meet the growing demand for export particularly from the US market.<sup>8</sup>

The Canadian economic potential is almost twice as big as the potential of the Australian economy in GDP and purchasing power.

<sup>5</sup> Hanf in Lebensmitteln, <http://www.laborundmore.de/archive/885008/Hanf-in-Lebensmitteln.html>, accessed 14-10-2011.

<sup>6</sup> Production and income - Production - Size of GDP, [www.oecd.org](http://www.oecd.org), accessed 14-09-2011.

<sup>7</sup> Global Trade Atlas, March 2010 as stated in 'The overview of the Canadian special crops industry', Agriculture and Agrifood Canada, [www.agr.gc.ca](http://www.agr.gc.ca), accessed 11-08-2011.

<sup>8</sup> Industrial hemp production in Canada, [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ9631](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ9631), accessed 11-08-2011.

Data on hemp in Canada are obtained from secondary sources from Health Canada, Statistics Canada and a report from the Ministry of Agriculture in Alberta.<sup>9</sup>

A general problem with estimating the hemp market is that there are not sufficient disaggregated data available. Agricultural statistics include hemp in a 'rest' category with other crops. For the Canadian hemp industry there are two data sources available: the 2008 statistics on the size of the hemp market from Health Canada<sup>10</sup> and the 2010 data from the Ministry of Agriculture of Alberta.<sup>11</sup> Exports and imports are derived from the Global Trade Atlas. Our data set comprises data over a reasonable period of time from 2000-2010. For seeds and hemp oil in particular, it is limited to imports and exports. Imports are only available for six years (2001-2007) during which data on exports are only available for 2 years (2006-2007).

### **Estimating benefits**

The benefits for industry are defined as a percentage of the product of the quantity of hemp products produced and the prices achieved per sold ton of hemp seeds (market potential) from the Canadian market, reduced by the amount not used for food. The estimations will be based on the following approach:

### **Quantity:**

Farm production units in the hemp industry in Canada range between 1,316 and 19,458 hectares, with an average of 6618 hectares. This production is not specified for its use in fibre, seed or oil. The number of licences for growing low THC hemp or producing low THC hemp products ranges from 545 licences in 1999 to 85 licences in 2008. Those include fibre, animal feed and oil for cosmetics.<sup>12</sup> The following table shows the total hemp production for Canada.

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<sup>9</sup> Industrial hemp production in Canada, [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ9631](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ9631), accessed 11-08-2011.

<sup>10</sup> Industrial hemp production in Canada, [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ9631](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ9631), accessed 11-08-2011.

<sup>11</sup> Industrial hemp production in Canada, [http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/econ9631](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/econ9631), accessed 11-08-2011.

<sup>12</sup> In comparison, verbal advice from consultation with the Australian jurisdictions indicates that Victoria issued about 20 licences in 2010 and New South Wales issued 12 licences in 2010.

**Table 3.1 Canadian hemp production 1998-2010, number of licences to hemp producers**

	Commercial hemp production Canada	Total number of licensed hemp producers Canada
Year	Hectares	n
1999	14031	545
2000	5487	255
2001	1316	
2002	1530	
2003	2733	
2004	3531	
2005	9725	
2006	19458	
2007	6132	
2008	3259	85
2009	5602	
2010	10856	

Source: Health Canada, Industrial hemp production in Canada, internet: [www1/agric.gov.ab.ca](http://www1/agric.gov.ab.ca) 18-08-2011.

Imports and exports for Canada are derived from Statistics Canada. The following table provides the data for Canada.

**Table 3.2 Estimated industrial hemp seeds imports and exports (2002-2007)**

Year	Industrial hemp seed imports Canada		Industrial hemp seed exports Canada	
	t	Cdn\$	t	Cdn\$
2002	30	43739		
2003	13	13738		
2004	0	693		
2005	21	22310		
2006	4	6888	256	1555430
2007	10	17130	700	2656276

Source: Statistics Canada May 2008, Export statistics prior to 2006 are for hemp fibre only.

The two figures for hemp seed exports give values of 256 and 700 tons of seeds respectively. Data on the import of hemp seeds in particular, show imports of hemp seeds ranging from 4 to 30 tons a year with an average of 16 tons. Canada exports between 88 tons and 876 tons a year, on average 203 tons. Considering that only about 5% of the seed production worldwide is used for food<sup>13</sup>, the amount that is related to food exports and imports will be considerably smaller, about 15 tons for exports and half a ton seeds for imports.

<sup>13</sup> Internet: [www.EIHA.org](http://www.EIHA.org), 10-08-2011.

The available data does not include information about the volume of seeds produced. An estimation of the potential seed volume is based on the following evidence from the Canadian market data, consultation with industry and research reports:

- Most hemp data collected are not specified for fibre or seeds. In principle, all seeds from this production can be harvested in addition to the fibre. Seed is complementary to fibre.
- Bentham (2011) estimates an average seed yield is about 0.9 t per hectare, ranging from 0.5t to 2.5t per hectare.<sup>14</sup>
- Nader 2002 investigates the market potential of the American market for hemp. He uses a parameter of 2t yield of seeds per hectare.<sup>15</sup>
- Vogl 2004 estimates hemp seed yields in Austria to be between 0.3t and 1.8t per hectare.<sup>16</sup>
- A fact sheet on hemp produced by the Queensland government (1997) assumes an average yield of 1.4t per hectare.

Considering this evidence a minimum, average and maximum yield results in:

- A minimum yield assumption of 0.5t per hectare for an estimated production of 200 hectares which results in an expected amount of 100t seeds for consumption.
- An average yield assumption of 0.9t per hectare for an estimated production of 200 hectares which results in an expected amount of 180t seeds for consumption.
- A maximum yield assumption of 2.5t per hectare for an estimated production of 200 hectares which results in an expected amount of 499t seeds for consumption.

#### **Price:**

In order to specify the benefits of hemp seed production for food consumption the estimated expected production needs to be monetised. The following assumptions are made to estimate the overall benefit to hemp producers:

- The Canadian export and import statistics state values for exports of hemp seed products for two years: 2006 and 2007 and for imports for 6 years (2002-2007). On average Canadian exports were worth C\$4,406 per ton of hemp seeds and imports were worth C\$1,116.<sup>17</sup>
- The hemp industry has indicated during consultation that the price for a ton of hemp seed is between \$A 4,000 and \$A8,000 per ha hemp seed if used for consumption.
- Evidence from consultation with industry states that the value for hemp seed for consumption is about twice as high as the value for other uses like animal feed or cosmetic oil.

The two estimates of \$A4,000/8,000 and \$A4,935 for exports are comparable, however imports prices are lower. The Canadian Ministry of Agriculture stated that the difference between import and export prices is due to the different products that are imported and exported. Canada imports seeds for sowing and hulled or cracked seeds, but exports mainly manufactured products. None of the values are robust since they are based on verbal evidence or, as in the Canadian case study, based on only two values for exports. However, it seems that the processing and manufacturing industry can add considerable value to hemp seeds.

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<sup>14</sup> P. Benhaim, 'How to grow hemp', p. 10 an average seed yield is about 900 kg per ha for UK. [www.howtogrowhemp.com](http://www.howtogrowhemp.com), accessed 14-10-2011.

<sup>15</sup> R. Nader (2001), DEA Bans Industrial Hemp Foods; [www.woodconsumption.org](http://www.woodconsumption.org), accessed 14-10-2011.

<sup>16</sup> Vogle, C.R., Lissek-Wolf, G., Surböck, A., 2004, Comparing hemp seed yields of an On-Farm Scientific Field Experiment to an On-Farm Agronomic Evaluation Under Organic Growing Conditions in Lower Austria, internet: <http://www.hampapartiet.se/02.pdf>; 24-08-2011.

<sup>17</sup> This estimates use the GDP and PPP values as explained under methodology.

**Questions:**

- 3) FSANZ seeks advice on the number of hemp licences and hemp businesses in Australia and New Zealand over the past years and information on future market potential**
- 4) FSANZ seeks advice on possible entry barriers to a hemp food market.**
- 5) FSANZ seeks advice on potential hemp prices for hemp seeds and food.**

### **3.2 Methodology for costs**

The cost of the likely regulation of hemp foods to industry and governments is modelled on existing regulation. Costs are estimated by using the “Business cost calculator” developed by the Australian *Office of Best Practice Regulation*<sup>18</sup>. It quantifies compliance costs of business using an activity-based costing methodology. All activities are timed and valued with the labour cost for doing the activity that is the salary of the person doing the activity. Then, the activity is multiplied by the number of businesses that have to comply to compute an estimate for compliance costs for businesses. All activities are then summed up. This exercise has been undertaken in consultation with regulators, law enforcement and industry.

#### **Activities**

The regulatory activities that could be required in the 4 regulatory options were identified by using the current compliance and licence application process for hemp fibre in NSW and for hemp oil in New Zealand. On the basis of these processes a detailed questionnaire for compliance cost activities was developed. A selected number of representatives from industry, law enforcement and government were asked to provide cost estimates for the compliance cost activities, and timing/staffing of activities, fees and other costs. For example, it takes a grower about 15 minutes to make a phone call to local authorities to announce that he is going to harvest his crop. His or her salary is \$16 an hour. These estimates were placed in the Business Cost Calculator. So the activity cost is \$4. One hundred businesses produce the same crop and have to do the same activity. The compliance costs for businesses are thus \$400. All activities are then summed up. The questionnaires are provided in annex I and II.

The administrative cost models for business costs distinguish nine categories: notification, education, permission, purchasing services or equipment, record keeping, enforcement, publication and documentation, procedural costs and other costs. All types of costs are first identified, then quantified and finally priced. For estimating government enforcement and compliance costs a distinction is usually made in administrative costs, implementation costs and research costs. Governments can recover administrative costs from businesses as part of the licence fee and actually do so in many states with regard to hemp fibre.

The advantage of this method is that the estimated costs are based on what the experts believe a regulatory system for the proposed options will most likely look like. It is also a reflection of the best expert knowledge of the compliance and enforcement costs. However, there will be gaps in the data collection. Some costs might not be known or are highly uncertain since people evaluate costs differently.

However, the use of expert judgements may create the possibility of biased answers or gaming, which cannot fully be eliminated.<sup>19</sup> The approach that has been used significantly reduces these two major methodological concerns.<sup>20</sup>

<sup>18</sup> See [www.finance.gov.au](http://www.finance.gov.au) accessed 14-10-2011.

<sup>19</sup> The current situation in the States and Territories varies. Some States might attribute costs to hemp foods that are the result of their current values and drug regulations with regard to cannabis rather than safe food. When costing compliance and enforcement only costs that can be attributed to the regulatory measure should be taken into account. The source must be the regulatory measure. E.g. activists try to increase the costs to use a

Data, other than the information collected in the questionnaires, has been collected from a range of sources. These include:

- Australian and New Zealand government websites regarding hemp fibre in Australia and New Zealand
- the Health Canada website regarding the licences
- hemp research organisations, consultancy reports and hemp industry organisations.
- consultation with the Australian and New Zealand industry.
- overseas regulators, industry and producers in relation to the price received for hemp foods and their enforcement processes.

Where possible FSANZ took note of differences in regulatory approaches between states and New Zealand and the cost implications of this. Activities required vary between states and in New Zealand and could not fully be integrated in this analysis.

### **Number of businesses**

Data restrictions make it impossible to distinguish between growers and manufacturers. In this analysis the number of businesses does not explicitly distinguish between types of businesses; only the total number of businesses is increased per option. This gap in the information leads to double counting of activities since not all businesses need to fulfil all requirements. FSANZ will take account of double counting by discounting the final value by 20%.

### **Timing**

Estimation of the timing of activities that have not taken place yet is impossible. Expert estimations will be used to determine a reasonable amount of time for these activities.

### **Labour costs**

Labour costs are based on the national survey of industry awards performed yearly by the Australian Ombudsman for Fair work ("pay check").<sup>21</sup> This survey provides hourly minimum pay rates for employees who work in the same industry. They provide payment rates per hour for a number of occupations (not for managers). In this study the standard labour rates for NSW have been used ie. :

- A\$20.25- for a head grower in New South Wales for a business manager responsible for compliance, (NZ \$26.52,-)<sup>22</sup>
- A\$15.51- (NZ \$20.31)<sup>23</sup> for a level 1 farm worker horticulture working on the hemp farm (and all subsequent businesses because we cannot distinguish between businesses).
- A\$25.33 (NZ \$26.43-<sup>24</sup> for a level 6 NSW local government industry, this rate is assumed for all government officials ensuring compliance.
- A\$18.23 (NZ \$23.87) <sup>25</sup>for a security officer Level 3 New South Wales.

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nuclear power plant by sabotaging its actions, chaining themselves to rails and entrance doors, making police intervention necessary and slowing down production. This would be a cost to society to express their values, not a cost to nuclear power.

<sup>20</sup> It is important for the credibility of the results that answers are neither biased nor gamed. Bias occurs when respondent's answers are non-representative for the relevant group. Gaming occurs if some respondents exaggerate the likely costs of implementing either up or down in an attempt to influence the decision on whether to proceed with the proposed change.

<sup>21</sup> internet 07-09nt-2011 Fair work ombudsman, <http://www.fairwork.gov.au>.

<sup>22</sup> Currency conversion Oxforex.com.au, 26-10-2011.

<sup>23</sup> Currency conversion Oxforex.com.au, 26-10-2011.

<sup>24</sup> Value Questionnaire MoH.

<sup>25</sup> Currency conversion Oxforex.com.au, 26-10-2011.

Labour costs in cost benefit analysis should reflect what is necessary to do the tasks assigned, not the pay the person receives. For example, to lead a compliance unit in a government agency it is necessary to have a head of division doing management tasks. This person could also do other jobs a lower paid person could do as well, but because there is no such other person, the manager does these tasks. The lower pay should be assumed as labour cost although the real cost for the agency is higher.

### **Other assumptions**

Next, the process of modelling cost activities requires a number of additional assumptions:

- An average of two business partners per hemp business has been assumed.
- It is assumed that workers in a hemp food business have to undergo a police check every two years and when the business applies for a new licence.
- It is assumed that businesses have to pay for the testing of their crops. Whether there is full cost recovery or not does not have an influence on the overall compliance costs. It only makes a difference with regard to who carries the costs. Assigning costs to businesses avoids double counting.
- A business can realise a maximum of two harvests a year. Hemp growers have indicated in consultation that they are especially interested in providing hemp seeds during winter season in the Northern Hemisphere. For the purpose of this study an average 1.5 harvests are assumed.
- Advice to businesses: It is assumed that businesses ask authorities on average two questions per year.
- A compliance scenario with a 5% surveillance rate is assumed.
- Non-compliance is only enforced by fines. It is assumed that no more than 10% of the inspected (5%) businesses are non-compliant so the number of fines is limited.

### **Questions:**

- 6) Are there any other activities that businesses have to do with regard to hemp cultivation compliance or enforcement? (see questionnaires and case studies in annex I and III). If there are other activities please indicate time estimates and labour cost estimates.**
- 7) Are there any other activities that governments have to do with regard to hemp cultivation compliance or enforcement? (see questionnaires and case studies in annex I and III). If there are other activities please add these to the spread sheet and provide time estimates**
- 8) Are there any other activities that businesses have to do with regard to hemp oil compliance or enforcement? (see questionnaire and case studies in annex I and III) If there are other activities please add these to the spread sheet and provide time estimates.**
- 9) Are there any other activities that governments have to do with regard to hemp oil compliance or enforcement? (see also questionnaires and case studies in annex I and III) If there are other activities please add these to the spread sheet and provide time estimates.**
- 10) Do you think that businesses would have to do any other additional activities with regard to hemp product compliance or enforcement? (see also questionnaire) If there are other activities please name these and provide time estimates.**

- 11) Do you think that governments would have to do any other additional activities with regard to hemp product compliance or enforcement? (see also questionnaire in annex I) If there are other activities please name these and provide time estimates.
- 12) Are there any other activities that businesses have to do with regard to compliance or enforcement if whole hemp seeds would be allowed? (see also questionnaires).
- 13) Are there any other activities that governments have to do with regard to compliance or enforcement if whole hemp seeds would be allowed? (see also questionnaire)
- 14) How long would it take a person to do the activities mentioned for
  - Option 1: status quo
  - Option 2: hemp oil
  - Option 3: hemp products
  - Option 4: hemp products and whole hemp seeds
- 15) Do you think the times provided for doing the relevant activities to comply with regulations are realistic? If not, why?
- 16) Should a different hourly rate base be used? If yes, which one?
- 17) Is it necessary to distinguish more types of labour costs? If so, which and why?
- 18) Could you please provide comments on the other assumptions?

### **3.3 Methodology for ‘not quantified benefits and costs’**

A large number of potential impacts, as shown in table 2.1, have not been estimated, because they are not within the scope of the analysis or they are not quantifiable due to a lack of data. The occurrence of these benefits and costs is also uncertain.

### **3.4 Conclusion**

This study concentrates on estimating the potential market for hemp products and the economic burden for businesses and government from regulating hemp foods. Although other possible impacts have been identified, it is not within the scope of this assessment to quantify all impacts.

FSANZ has no safety concerns with regard to the consumption of hemp foods. However, costs may result from other regulation, in particular drug regulations, legal changes and other enforcement measures which cannot be directly attributed to the proposed regulatory changes, but will be considered in a qualitative way. Current licensing requirements will be taken into account and transferred to the new scenarios.

Methodologies used are appropriate, but subject to strong data limitations. FSANZ has attempted to provide realistic estimates where data are not readily available. Other necessary assumptions have been stated in this document.

## 4. Implications for the different regulatory options

This section considers the implications for the different regulatory options described in section 3. It provides the expected impacts on the economy in section 4.1. Section 4.2 considers the compliance and enforcement costs for businesses and government.

### 4.1 Benefits: market potential

The main expected benefit is the development of a market for low THC hemp foods:

- The existing hemp industry in Australia and New Zealand might profit from being able to achieve more revenue from existing crops. From available overseas data it is not possible to distinguish between fibre or seed producers. However, there are sufficient indications from other countries to give rise to this expectation of increased business opportunities.
- The number of businesses producing, or selling hemp products will increase if hemp foods are permitted. The increase is assumed to be proportional to the range of products allowed from hemp. Option 2 may for example only induce a small increase in the number of businesses whilst option 4 will lead to the largest number of businesses in the market.
- Canadian data on hemp production indicates that hemp foods might possibly lead to market gains for hemp producers. The hemp food industry believes a period of 7 to 10 years will be necessary for the hemp industry to develop and to reach full potential.
- Other countries have expressed their interest in exporting hemp foods and Australian and New Zealand businesses have expressed their interest in importing and exporting hemp products. Canadian export and import data indicate that there might be a potential for gains from exports and imports.
- Considering that only about 5% of the seed production worldwide is used for food<sup>26</sup>, the amount that is related to food production, exports and imports will be rather small. However, there are potential spill-over effects to the whole hemp industry and more opportunities for small and medium size enterprises.
- The revenue produced from low THC hemp foods will be estimated within large boundaries with a lower boundary of A\$4,000 per ton of hemp seeds and an upper boundary of A\$8,000.
- Further benefits exist for industry and consumers that could not be costed within the scope of this analysis.

### 4.2 Costs: compliance and enforcement

The main costs associated with regulating hemp foods for businesses are licensing and testing of crops and for governments are training and developing compliance plans.

- The compliance and enforcement costs for governments and businesses are likely to increase with the number of industry participants and the range of hemp foods available.
- Extra activities for businesses may include viability testing, more frequent crop THC testing, tracking sales and the requirements for obtaining a licence ranging from security measures to obtaining individual import licences and export certificates.

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<sup>26</sup> Internet: [www.EIHA.org](http://www.EIHA.org), 10-08-2011.

- Costs to governments result mainly from training staff with regard to the new established requirements, research into alternative detection and enforcement measures as well as establishing new compliance plans. Most costs for governments are start-up costs.

There are possibly other costs for industry and governments that could not be estimated within the scope of this analysis.

### 4.3 Comparison of regulatory options

In order to decide on whether to approve the application, FSANZ has considered four options. The options include the *status quo* (the situation if no action is taken) as a comparative measure against appropriate approaches.

For the purpose of comparing different regulatory options the following assumptions have been made:

- The implications for costs and benefits will mainly depend on the number of businesses in the hemp market. The quantity of hemp seed products for consumption and the achieved prices determine the value of those products on the market.
- Increasing the range of hemp products that are permitted will have an influence on the number of new entrants to the industry. The higher the number entrant the higher the variable enforcement costs.
- The estimations assume the full market potential of hemp is achieved. In reality it will take about 7-10 years for a local industry to develop. This aspect has not been dealt with in this analysis.

Option 2A limits the potential market to oil products only, without any safety concerns for hemp food. A rather small number of new businesses and increase in revenue will be assumed. If the supply and demand for hemp seed oil fails to develop sufficiently government costs, as governments will have large start-up costs due to training and investments in compliance and enforcement plans, may exceed benefits.

Option 2B provides an opportunity for a much larger range of products without additional safety concerns. A larger number of new businesses and larger revenue is assumed than achieved under option 2. Start-up costs for governments are based on time for training and investment in new compliance plans, which will be the same for this option.

Option 2C provides for the largest range of hemp food products. However, there are also stricter compliance and enforcement measures necessary that increase costs. Costly viability testing would possibly need to be introduced, which may make option 4 less attractive. Given the uncertainty around additional enforcement costs, option 4 might not provide as large a net benefit as option 3. Whether this is the case is not clear from available evidence.

## 5. Next steps

This document uses cost benefit analysis to estimate the impact of regulatory change on the industry, governments and consumers. It sets out details of our proposed approach for estimating costs and benefits of the regulatory options and presents identified impacts; an increase in market size for hemp foods and regulatory costs for businesses and government. It also provides an initial qualitative evaluation of the impacts of the different regulatory options on industry, governments and consumers. More rigorous costing estimates will be developed if more information becomes available.

The information presented in this report is qualitative because the data collection phase has not been completed. FSANZ is still in the process of seeking information and advice from different sources. This report presents questions for interested parties to obtain information necessary to quantify costs and benefits. In addition, specific questions have been targeted to other experts including universities to complete the analysis. The results of monetarising costs and benefits will be presented in the approval report following submissions and targeted consultation.

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# Annex I: questionnaires on compliance and enforcement activities for businesses and governments

The following table provides the estimates for each identified activity for businesses.

**Table I.1 Activities, time estimates and labour costs for businesses**

Cost category	How many staff do the activity?  If a service or product is bought, quantity of the product per year?	How many times is the activity performed per year? (e.g. 2x a year)	How many hours are spent on the activity per year?	Average hourly rate	Costs for products or services per year	Comments/assumptions
<b>Option 1: Status Quo (Hemp fibre) Australia; (not costed)</b>						
Notification of details of property, test results from testing crops >0.5% THC content	1	1.5	4 hours	20.25 \$A head grower		All businesses need to notify authorities on the premises and the test results. It is assumed that it takes 1 hour to make the phone call and to arrange further activities.
Police checks for employees and employer	3	1	4 hours (incl travel time)	15.51 \$A level 1 farm worker horticulture	52 \$A	Average of 3 workers on a farm travel half a day to the relevant authority to do the test.
Record keeping	1	3	10 hours	20.25 \$A head grower		Seeds stocks on hand, tracking sales and purchases, for producers and processors, audit purposes
Notification of theft unauthorized tampering	1	0.25	4 hours	20.25 \$A head grower		Take into account any remedial or added security measure
An application process for a licence	1/7 of businesses (N) 1	0.2	8 hours incl travel time	20.25 \$A head grower		20 hours for preparing and lodging an application. 1/7th of businesses needing to do this is based on a Victorian statement that they have about 20 licences and 3 applications annually. Application lasts 5 years so a fifth of all businesses apply a year.
Develop plan to control activities under the licence	1	1	40 hours	20.25 \$A head grower		Owner needs to put management of control tasks into place.
Register with an Incorporated Hemp Association	1	one off cost	1 hour	20.25 \$A head grower		

Cost category	How many staff do the activity? If a service or product is bought, quantity of the product per year?	How many times is the activity performed per year? (e.g. 2x a year)	How many hours are spent on the activity per year?	Average hourly rate	Costs for products or services per year	Comments/assumptions
Destruction of crop with THC >1%	3	0.001	24 hours	15.51 \$A level 1 farm worker horticulture		Destruction of Crop. In the event that a crop is confirmed to contain a THC Delta 9 content above the proscribed level. It may take the farmer and workers approximately 2 hours per hectare to destroy. A compliance and regulatory process may be required to determine origin of seed and/or cause of high Delta 9 levels (9).
Supervise inspectors that check premises	1	0.05	8 hours	20.25 \$A head grower		Safety procedures are assessed on premises. Happens a day a year.
Licensee to maintain list of employees involved or handling hemp crops of harvested material	1	5	1 hour	20.25 \$A head grower		The origin and destination of all seeds/crops needs to be recorded. Bags or weights of deliveries are established. Assumes that farmer delivers 1.5 harvests to 2 contractors and buys 1.5 times seeds stated in annual record (1 more time recording),
Renew licence and annual report	1	1	2 hours	20.25 \$A head grower	200 \$A	Pay licence fee and submit annual report which indicates all hemp crops grown, harvested, yield, supplied to another person and destroyed in the previous year.
First test of crop	1	1	2 hours	130 \$A		Costs NSW.
Sample testing	1	1.5	4 hours	130 \$A	90\$A	Costs NSW.
Take security measures during harvest, storage and for hemp seed material	3	1.5	24 hours	15.51 \$A level 1 farm worker horticulture		Make sure crops not visible from the road, close regular monitoring, inspections and journal entries Maintain inspection of all areas where viable seed may have fallen and germinated outside any licensed field.
<b>Option 2A:</b>						
First sample	1	1.5	3 hours	130 \$A		Costs NSW.
Testing of whole seed samples from cleaned/ ready for processing grain	1	1.5	6 hours	130 \$A	90 \$A	Costs NSW.

Cost category	How many staff do the activity? If a service or product is bought, quantity of the product per year?	How many times is the activity performed per year? (e.g. 2x a year)	How many hours are spent on the activity per year?	Average hourly rate	Costs for products or services per year	Comments/assumptions
Record keeping- track sales and purchases from only certified producers and processors	1	3	2 hours	20.25 \$A head grower		The origin and destination and weight of all purchases or seed delivered for processing confirming name and licence number of the grower and supplier. Prove by certification of Low THC Delta 9 content of all seed for processing.
An application to process hemp seed oil	1/7 of businesses (N) 1	0.2	8 hours incl travel time	20.25 AUS \$ head grower		20 hours for preparing and lodging an application. 1/7th of businesses is based on VIC statement to have about 20 licences and 3 applications annually.
Register with hemp association	1	one off cost	1 hour	20.25 \$A head grower		The grower needs to register with the seeds, cultivation and harvest register.
Seed producers need to register with authorities	0.5N	one off cost	1 hour	20.25 \$A head grower		It is assumed that half of the businesses produce seeds for sowing as a product.
<b>Option 2B: Approve processed hempseed products</b>						
Work check for workers on business	3	1	4 hours	15.51 \$A level 1 farm worker horticulture		Police establishes no criminal record, worker applies for and provides documents. Workers on a farm with hemp are subject to two yearly drug tests. Average of 6 workers on a farm travel half a day to the relevant authority to do the test.
Supervise enforcers that check the premises	1	1	0.05x8 hours	20.25 \$A head grower		Safety procedures are assessed on premises. Happens a day a year.
Work checks	3		3x 0.5 hours	15.51 \$A level 1 farm worker horticulture		Police establishes no criminal record, worker applies for and provides documents. Workers on a farm with hemp are subject to two yearly drug tests. Average of 6 workers on a farm travel half a day to the relevant authority to do the test.
More first test of crop				130 AUS \$		costs NSW.
More monitoring of crop with testing				130 \$A	90 AUS \$	costs NSW.
Customs testing	1	0.05x0.1			3 days storage x 60 \$ a day + 1x 400\$ test	Assumes 5% surveillance, assumes 10% suspicions, import to local production rate of 5,5%

Cost category	How many staff do the activity?  If a service or product is bought, quantity of the product per year?	How many times is the activity performed per year? (e.g. 2x a year)	How many hours are spent on the activity per year?	Average hourly rate	Costs for products or services per year	Comments/assumptions
<b>Option 2C: Approve processed hempseed products and hemp seeds</b>						
Show non-viability of about 99.9% certification	1	1	2 hours	15.51 \$ level 1 farm worker horticulture		
Strict plant breeder rights						

**Table I.1 Government compliance and enforcement cost estimates**

Cost category	No. Staff	How many times is the activity performed?	Hours spend on item/year	Average salary	Other costs	Comments/ assumptions
<b>Option 1: Status Quo (Hemp fibre) Australia; not costed;</b>						
Assess licences	1	1/7 N	2 hours	21.56 \$A average level 6 and level 3 NSW local government industry		Director General assesses licences. 1/7 of applications are new applications. Government official works together with a clerk preparing the work.
Renewal of licences	1	N	3 hours	21.56 \$A level 3 and 6 NSW local government industry		Assumes that it takes a local government official two hours to prepare and assess a licence renewal, checking whether it paid for, printing the licence.
Issue individual import/export licences	1	4	3 hours	21.56 \$A level 3 and 6 NSW local government industry		Ministry of Health New Zealand, customs
Amendments licences	1	18	1 hour	21.56 \$A level 3 and 6 NSW local government industry		MoH, about a third of licences need amendments.
Developing monitoring program for compliance	3	one-off cost	500	25.33 \$A level 6 NSW local government industry		Assumes that three government officials will work out a compliance plan
Ongoing monitoring	1	4	2 hours	25.33 \$A level 6 NSW local government industry		Assumes computer program collecting standardised information per case that will be checked 4 times a year.
Record keeping (businesses state destination of products in annual report)	1	N	0.25 hours	25.33 \$A level 6 NSW local government industry		Collecting annual reports and checking.

Cost category	No. Staff	How many times Is the activity performed?	Hours spend on item/year	Average salary	Other costs	Comments/ assumptions
Maintaining a data base for on average two commercial partners of hemp businesses	1	6	2 hours	25.33 \$A level 6 NSW local government industry		Two entries per business in database plus other changes.
Monitor notifications of harvest and crop test results	1	1.5N	12 hours	25.33 \$A level 6 NSW local government industry		Assumes an average of 1.5 harvests per business. A business owner needs to tell authorities that his crops need to get tested for THC before harvesting to ensure food safety. Authorities monitor test results and take samples.
Advise to businesses	1	2xN	0.5 hours	25.33 \$A level 6 NSW local government industry		Assumes two questions to authorities per business per year.
Issuing of transport licences and licence for destruction of remains under control	1	4xN	0.25 hours	25.33 \$A level 6 NSW local government industry		Assumes a total number of 4 licences per business for transporting seeds and the destruction of remains from the harvests.
Work check for employees	1	0.5N	0.25 hours	25.33 \$A level 6 NSW local government industry		Workers in hemp business undergo a police check every two years.
Customs monitoring	1	0.15N	1 hour	25.33 \$A level 6 NSW local government industry		10% surveillance and another 5% in depth checks, all paper assessments.
Testing for THC monitoring with private lab and bulk sample tests (user based)	1	1/7N	12 hours	25.33 \$A level 6 NSW local government industry	user based	Laboratory costs have been assigned to businesses. Currently costs of taking samples are not assigned to businesses.
Subsequent testing of crop (user based)	1	N	12 hours	25.33 \$A level 6 NSW local government industry	user based	Laboratory costs have been assigned to businesses. Currently costs of taking samples are not assigned to businesses.
Inspector checks premises	1	0.1N	12 hours	25.33 \$A level 6 NSW local government industry		Assumes 10% surveillance rate.
Recheck when not compliant	1	0.01N	12 hours	25.33 \$A level 6 NSW local government industry		It is assumed that 10% of the businesses checked (10%) are not compliant.
Issuing of fines	1	1	4 hours	25.33 \$A level 6 NSW local government industry		It is assumed that one business actually gets fined.
legal enforcement if drug related offence	2	1	80 hours	25.33 \$A level 6 NSW local government industry		Police and legal officers prepare legal case if a drug related offence is committed. 80 hours MoH/police questionnaire.

Cost category	No. Staff	How many times Is the activity performed?	Hours spend on item/year	Average salary	Other costs	Comments/ assumptions
Appointing inspectors	1	one off cost	1 hour	25.33 \$A level 6 NSW local government industry		Formal procedure done once prepared formal letters by a government official.
Training inspectors	4	one off cost	35 hours	25.33 \$A level 6 NSW local government industry		About 4 inspectors need to be trained for a week - NSW industry.
Developing information material	1	one off cost	40 hours	25.33 \$A level 6 NSW local government industry		There need to be information on how to apply for hemp what to expect, what to do.
Research into detection methods	1	one off cost	500 hours	25.33 \$A level 6 NSW local government industry		As long as hemp seeds are subject to drug regulation regulators need to define methods to detect illegal activity
Appointing police and legal officers	1	one off cost	2 hours	18.23 \$A police officer		Formal procedure done once. Formal letters prepared by a government official. Official gets assigned to deal with all tasks concerning hemp.
Training police and legal officers	4	one off cost	35 hours	18.23 \$A police officer		About 4 inspectors need to be trained for a week NSW industry.
<b>Option 2A: Hemp oil New Zealand;</b>						
Assessing import licences	1	0.2x7	3 hours	21.56 \$A level 6 NSW local government industry		Director General assesses whether certain hemp products will be allowed to be imported. Import licence for 5 years.
Maintaining a data base	1	6 times per year	2 hours	25.33 \$A level 6 NSW local government industry		Assumed that a business has two local partners that are registered with authorities, plus other changes.
Appointing and training inspectors	1	one off cost	35 hours +1 hour appointing	25.33 \$A level 6 NSW local government industry		Formal procedure done once prepared formal letters by a government official. About 1fte inspectors need to be trained for a day.
More application for a licence	1	N	2 hours	25.33 \$A level 6 NSW local government industry		In the New Zealand case it seems that an application for a licence has to be done annually.
Developing information material	1	one off cost	40 hours	25.33 \$A level 6 NSW local government industry		There need to be information on how to apply for hemp what to expect, what to do.
Customs check imports	1	0.05	2 hours	25.33 \$A level 6 NSW local government industry		0.05% surveillance
Customs laboratory tests for THC	1	7	1 hour	25.33 \$A level 6 NSW local government industry	Laboratory cost recovered	Test is about 200 \$A, official takes samples

Cost category	No. Staff	How many times Is the activity performed?	Hours spend on item/year	Average salary	Other costs	Comments/ assumptions
Recall stock contaminated seeds	1	1	4	25.33 \$A level 6 NSW local government industry		Recall costs for industry, only labour for government official communication and enforcement.
<b>Option 2B: Approve processed hempseed products;</b>						
Assessment of more licences	1	1/7N	1 hour	25.33 \$A level 6 NSW local government industry		Labour costs from fair work study need to be confirmed. Assessment board of three members is assumed to assess applications. Assumes two hours to assess an application. xN, the number of applications will be of influence for the case load.
Renewal of more licences	1	N	1 hour	25.33 \$A level 6 NSW local government industry		Assumes that it takes a local government official two hours to prepare and assess a licence renewal, checking whether it is paid, printing the licence.
Registering seed producers	1	N	0.25	25.33 \$A level 6 NSW local government industry		Assumes that it takes a local government official 15 minutes to do a data entry.
<b>Option 2C: allow whole hemp seeds to be sold to consumers;</b>						
Licence application required for everyone producing or supplying seeds and in possession of seeds.						Not feasible.
Approve hemp cultivars					Cost recovered.	MOH
Testing for viability with private lab and bulk sample tests (user based)	1	N1/7 new cultivators	12 hours	25.33 \$A level 6 NSW local government industry	user based	Costs have been assigned to businesses. About 800 AUS \$ test, from MoH 900NZ\$ tests.
Monitor non-viability of crop.	1	N	2 hours	25.33 \$A level 6 NSW local government industry		
Research on detection methods, security issues and monitoring seeds	3	1	500 hours	18.23 \$A police officer		

## Annex II: OECD GDP and PPP values

Production and income - Production - Size of GDP

**Table II.1: Gross domestic product, billion \$US, current prices and PPPs**

	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>Australia</b> <sup>1</sup>	525.40	552.10	584.90	622.30	655.60	696.80	742.90	795.70	831.20
<b>Canada</b>	874.10	909.80	937.80	989.30	1049.10	1132.00	1202.20	1267.90	1300.20
<b>New Zealand</b> <sup>1</sup>	80.30	84.70	89.20	93.30	99.00	102.80	109.10	115.20	116.40

1 Data refer to fiscal year.

2 The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities.

Source: OECD Factbook 2010: Economic, Environmental and Social Statistics – ISBN 92-64-08356-1 - © OECD 2010

**Table II.2 GDP factors for converting Canadian figures into Australia and New Zealand figures**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<b>AU/CA</b>	0.602909	0.601075	0.606837	0.623694	0.629031	0.624917	0.615548	0.61795	0.627573	0.639286
<b>NZ/CA</b>	0.092606	0.091866	0.093097	0.095116	0.094309	0.094367	0.090813	0.09075	0.090859	0.089525

## Annex III: Case studies for activity costs

*“Opportunities to engage in commercial low THC hemp fibre and seed production in NSW “  
(internet: <http://www.dpi.nsw.gov.au>, 27-09-2011)*

The Hemp Industry Act 2008 (the Act), allows the cultivation and supply of low THC hemp fibre and seed production in NSW, under controlled conditions.

A licensing scheme allows commercial production of low THC hemp, as well as facilitating the development of an industry in processing, manufacturing and marketing in NSW under strictly controlled conditions. Licensing conditions ensure that production can take place without risk to drug law enforcement. These conditions include strict eligibility and suitability requirements for licence applicants and compliance monitoring programs.

### *Application:*

A licence to cultivate and supply low THC hemp for commercial production and manufacturing includes:

A criminal record check of the licence applicant and all close associates by the NSW Police. A licence will not be issued to a person where the person, or any close associate of the person, has been found guilty of a drug-related offence in any state or territory.  
A description of the proposed activities and products of the business.  
The assessment and approval of the Director-General on a case by case basis.  
An environmental assessment and approval on basis of a plan a plan of the property showing those areas where low-THC hemp is likely to be grown or stored and a map showing the property, fence lines, roads, residences, storage facilities, GPS coordinates and paddocks intended for hemp production.  
The Act provides for penalties of up to \$11,000 or 2 years imprisonment or both where a person makes a false or misleading statement or omits important information from their application.

### *Conditions licence:*

A licence under the Act is usually valid for a period of five years.  
A licensee must ensure that the activities authorised by the licence remain under the licensee's control at all times and that employees are suitable to be involved in the cultivation of low THC hemp.  
Notification must be given of all details of the property or premises.  
Low-THC of seeds must be guaranteed by statutory declarations, certification from domestic or overseas seed certification schemes, or third party certificates of analysis.  
Verification of low THC concentrations requires sampling and chemical analysis of the crop by a laboratory accredited to test THC levels in cannabis plant material.  
Notification of test results within 24 hours where the concentration of THC exceeds 1%.  
A crop that exceeds 1% THC will require notification to the NSW Police. The crop may also be required to be destroyed under requirements of the Act.  
licensee must immediately notify an unauthorized use or supply of THC hemp.  
A licensee must take all necessary steps to ensure that any low-THC hemp is not used for an unlawful purpose:

- monitor and discourage any unauthorised access to the low-THC hemp crop or storage areas;
- provide basic security for low-THC hemp material that is stored or transported;
- maintain good farm records that allow traceability of all low-THC hemp material entering or leaving the property or premises

a licensee must ensure that all low-THC hemp cultivated under the licence is, before leaving

the property on which it was cultivated, substantially stripped of its leaves  
a licensee must notify changes to the information provided in relation to the licence.  
a licensee must produce the licence at the request of the inspector.  
a licensee must co-operate with an inspector at all times

- produce information or records;
- give directions to rectify any breach of the licence or its conditions;
- provide access to premises (other than a home) and seize or copy documents or other relevant material;
- allow taking samples for analysis;
- answer questions.

a licensee must notify the Director-General if the applicant, or any close associate, is convicted of any drug related offence

Keep records on activities carried out (Annual reporting)

licensee pay an annual fee of \$200.

The following box describes the compliance process for hemp oil in New Zealand.

*New Zealand hemp oil regulations ([www.moh.govt.nz](http://www.moh.govt.nz); 29-09-2011)*

In order to grow, trade in, or process industrial hemp as an agricultural crop an individual, body corporate, or partnership needs to be licensed under the Misuse of Drugs (Industrial Hemp) Regulations 2006. The Director-General of Health determines which varieties of Cannabis sativa can be cultivated; possessing any other variety would be an offence.

*Application for a licence:*

An applicant needs a completed Police Clearance form.

All responsible persons for the business need to be registered with authorities and authorities must be notified of any changes. All responsible persons have to provide a police check.

Seeds need to be acquired from registered seed producers only.

The import or export of industrial hemp products requires a separate licence for each import or export as required under the Misuse of Drugs Regulations 1977, regulation 7.

The applicant needs to provide a physical address, description and plan of the location of the area to which this application relates. This must include the legal description and ground covered expressed in hectares or square metres.

The grower has to take and describe in the application appropriate security measures and measures to prevent unauthorised interference. The grower has to provide a description of security measures when harvest occurs, the storage facilities and security measures in place for hemp seeds/plant material, e.g. the material the storage facility is made of and provide photos of it.

A licence is issued for a period of one year. A general licence is \$511.11 including GST and is issued for cultivation, processing, possession and supply of low THC cannabis varieties approved by the Director-General of Health. A research and breeding licence is issued only if the applicant holds a general licence and is an additional \$153.33 including GST. It allows for the cultivation and processing of approved and non-approved varieties.

*Conditions of a licence:*

The grower needs to register with the seeds, cultivation and harvest register.

Every grower needs to maintain a seeds, cultivation and harvest record.  
The authorities may instruct a licence holder to have samples of the crop tested by an approved laboratory.  
The licence holder is required to meet the costs (A\$150 handling fee +A\$250 per hour of analysis). The grower must report the results of testing within 5 working days.