

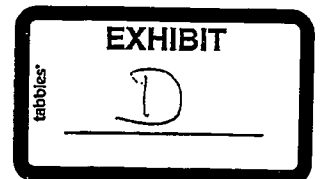
UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NORTH DAKOTA
NORTHWESTERN DIVISION

_____)	
David Monson)	
)	
-and-)	
)	
Wayne Hauge,)	Civ. No. 4:07-cv-00042 (DLH/CSM)
)	
Plaintiffs,)	
)	
v.)	
)	
Drug Enforcement Administration)	
)	
-and-)	Declaration of Gero Leson
)	
United States Department of Justice,)	
)	
Defendants.)	
_____)	

DECLARATION OF GERO LESON

I, Gero Leson, a competent adult of sound mind, do hereby declare as follows under the penalties for perjury of the laws of the United States of America:

1. My name is Gero Leson, principal of Leson & Associates, a scientific research and consulting firm in Kensington, California. My educational background is in sciences (M.S. Physics, University of Cologne, Germany, 1984; Doctorate in Environmental Science and Engineering (D.Env.), UCLA, 1993). My work focuses on industrial pollution control, the sustainable use of renewable resources and economic development. The latter includes ongoing projects in tropical countries to establish the production of seed oils under certified "organic" and "fair trade" conditions, and a project funded by the U.S. Agency for International Development to improve competitiveness of the coconut fiber industry in Sri Lanka.



2. Since 1999, I have worked as scientific advisor to Canadian, U.S. and German companies who process hemp seeds and manufacture hemp food products. In this role, I have coordinated several studies on the issue of trace THC in industrial hemp with a focus on the insignificant residues in hemp foods. These projects have been funded by several Canadian agricultural programs. I am currently coordinating a research project for the assessment of the nutritional properties of hemp seeds.

A. Regulatory Requirements for Hemp Farming in Canada and the EU

3. Industrial hemp is now grown for fiber and seeds in more than 30 countries worldwide. Being of the same species as marijuana (*Cannabis sativa* L.), industrial hemp plants produce small amounts of marijuana's major psychoactive constituent delta-9-tetrahydrocannabinol (THC) as well as other cannabinoids, such as the non-psychoactive cannabidiol (CBD).

4. Governments in Canada and the European Union (EU) assessed the potential of industrial hemp to be utilized as a recreational drug, prior to re-legalizing commercial hemp production in the 1990s. The comprehensive analysis and resulting regulations stipulate that hemp growers exclusively plant certified varieties that have been bred for a THC content of less than 0.2% (European Union) and 0.3% (Canada) and require spot sampling of hemp fields and sample analysis for THC.

5. These THC limits conservatively address any and all concerns that individuals could obtain any kind of "high" from smoking or ingestion of the industrial hemp plant flowers, and apply to those parts of the cannabis plant that contain the highest concentrations of THC, *i.e.* the bracts of the female flowers and upper leaves of the female plant.

B. Variability of THC Concentrations during Plant Development

6. To determine the variability of THC and CBD in low-THC cannabis varieties during plant development, the German Federal Research Institute for Agriculture (BAL) in Braunschweig studied THC and CBD levels in several varieties of commercial hemp during the 1992–98 period. The Institute found that THC concentrations in bracts and leaves increase during plant development and achieve their maximum prior to the onset of full seed maturity, followed by a decline. Consequently, regulations by Health Canada, who administers Canada's industrial hemp program stipulate that commercial hemp fields are sampled during that period of highest THC levels.

7. These studies show that *at no time* during plant development do THC levels exceed the maximum concentration reached during onset of seed maturity. There is no other "stage" of maximum THC content, aside from the onset of seed maturity, which is when samples are taken and assessed for compliance with trace THC limits. In the EU and Canada, varieties which frequently present with THC levels close to the stipulated limit are placed under closer scrutiny and may eventually be decertified. Consequently, industrial hemp varieties now used in Canada and the EU generally do not contain THC at levels above 0.3 or 0.2%, respectively, even during the period of maximum THC levels.

8. Other factors that may raise the THC level in plants include stress induced by drought, disease and exposure to cold during certain stages of development. However, because the numerical impact of these factors on THC content was found to be small, Health Canada exempted, in 2005, several hemp varieties from the mandatory requirement to sample and test for THC, as it was found that these varieties consistently produce plants with a THC content far below 0.3% THC irrespective of stress conditions.

C. Drug Abuse Potential of Industrial Hemp


8. In the absence of clinical studies on the drug potential of commercial hemp varieties, a desktop study by F. Grotenhermen and myself, "Reassessing the Drug Potential of Industrial Hemp", 2002, provided an extensive review of botanical, agricultural, and toxicological issues. It evaluated the extensive literature on the metabolism and toxicology of cannabis and cannabinoids and yielded the following conclusions.

- (a) Individuals could not realistically smoke enough material from hemp plants that comply with the 0.3 THC limit to obtain enough THC to produce even the most minimal psychotropic effect.
- (b) In industrial hemp, the non-psychoactive CBD is the predominant cannabinoid and often occurs in a CBD/THC ratio of more than 8:1. Several studies have shown that even CBD/THC ratios of 2:1 in both smoked and ingested Cannabis considerably reduce the subjective high rating of the same amount of pure THC, further impairing the already low psychoactive potency of industrial hemp.
- (c) Anecdotal reports from individuals who tried smoking industrial hemp confirm that these varieties are not suitable for recreational drug use. Occurrence of undesirable side effects, such as painful coughing and headaches, were widely reported.
- (d) This is consistent with findings from several studies that indicated that the effects of smoking Cannabis with a THC content of as high as 0.5–0.9% become indistinguishable from those of smoking a placebo.

9. In summary, our findings strongly support the conclusion that industrial hemp with a THC content of less than 0.3% has no practical potential as a crude marijuana substitute for personal consumption or the commercial illegal conversion into a high-potency drug. These findings agree with the positions of the governments in Canada and the EU that their commercial hemp programs provide sufficient protection from such use.

I hereby declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my present information, knowledge and belief.

Executed on September 12, 2007

A handwritten signature in cursive script, appearing to read "Gero Leson", is written above a horizontal line.

Gero Leson