

Title of Project: Industrial Hemp Project

Report Title: Interim Final Report

Report Covering Period: April 1, 2000 to March 31, 2001

Organization(s): BC Grain Producers Association

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Objectives:

- Determine the suitability and yield of early and medium-early maturing varieties of industrial hemp (low THC <0.3%) as a crop in the Peace River Region of BC.
- Develop agronomic practices suitable for this crop under Peace River conditions such as seeding rates, fertility levels, and seeding dates and their influence on yield and quality of seed.
- Make the information obtained available to farmers and other interested parties in the form of fact sheets, news releases and reports, so informed decisions can be made in production and marketing.

Accomplishments: *(in the project year 2000)*

- Required licenses from Health Canada, land approvals, RCMP documents, etc were obtained. (Joint license holders: J. Dobb and K. Clark)
- Small plot trials of seeding date (4), seeding rate (4) and variety (9) grew well at research sites near Dawson Creek and Fort St John (variety trial only). Another trial of hemp suitability for silage (2 varieties, 3 harvest dates) was also undertaken.
- A report of info from the previous two years of trials was prepared and distributed through BCMAFF offices, agricultural service outlets and growers' meetings.
- The same information has been converted for presentation through the BC MAFF web site. It was freely available by the end of June, and the web address http://www.agf.gov.bc.ca/croplive/plant/forage/pr_n_crp/pr_n_crp.htm has been distributed to growers and through an electronic hemp newsletter.
- Plots were staked and labeled for field tours and maintained in an appropriate manner for observation, monitoring, weed and pest control and data collection.
- Following the destruction of the Dawson Creek hemp trials by hail on July 14 a modified protocol and reduced version of the hemp silage trial using guard plots at the Ft. St. John variety trial was developed.
- Samples were collected for the modified silage trial and sent to Alberta for nutrient analysis which was previously arranged at no cost.
- Industrial hemp sampling licenses were obtained for both research and commercial hemp fields and samples were collected for THC analysis for regulatory purposes. All samples from research plots were below the 0.3% THC limit ranging between <0.05 and 0.23 THC.
- Four commercial fields in Central BC were sampled for regulatory purposes.
- Seed harvest at Ft. St. John was attempted. The earlier theft of maturing tops about August 18 caused some second growth development but this occurred too late in the season to produce harvestable seed.
- Plots at both test sites were mowed to dispose of residual hemp material.

Tasks in progress:

- Preparation of a three year summary report.

Extension and Demonstration:

- Reports written and distributed as above.
- Plot maps were prepared for tour groups or individuals.
- Information on the project presented, and contacts made with others in hemp industry/research at:
Northern Alternatives Conference March 25, 2000, UNBC Prince George;
BC Institute of Agrologists AGM May 5, 2000 UNBC Prince George;
Northern Agriculture Symposium Oct. 4-6, Prince George; and, BC Peace Field Crops Industry planning meeting Nov 27-28, Ft. St. John.
- Previous years' information distributed on a web site as described above.
- Farmers and professionals from other provinces toured the plots.
- Continuing contact with others in hemp industry/research. Advised on crop rotation and management on the expansion and establishment of some organic hemp farms.

Finances:

Total approved project funds	\$23,450.00
Income from Levy council, PRAD 2, Investment Ag.	\$21,385.00
Total Expense	\$11,310.00
Net Income	\$10,075.00
Holdback request	\$ 0

Variations from original work plan, schedule or budget:

- An assessment of hemp for silage and the effect of harvest date on silage quality was added. Due to the loss of the Dawson Creek site from a severe hail storm on July 14, this trial was modified and relocated to Ft. St. John where existing guard plots at the edge of the variety trial were used. Arrangements for nutrient analysis were made at no cost to the budget.
- Soil tests at the research sites indicated none were sufficiently deficient in nutrients to allow a valid fertilizer trial. The variety trial at Dawson Creek was repeated at a later seeding date on the plot site originally planned for the fertility trial (anticipating more even emergence).
- About August 18, persons unknown removed the developing seed heads of all 4 replicates of the most mature variety (Fin 314) at the Ft. St. John site, and the most mature heads of some other varieties. While there was some subsequent recovery, the timing of this destruction followed by cold wet weather in September did not allow for any significant seed harvest or yield determination. There was still sufficient plant material after some recovery to obtain samples for valid THC determination.
- Budget expenditures were below expectations for several reasons:
 - a) The seed was donated for the trials in 2000
 - b) The severe hail storm devastated the Dawson Creek site.
 - c) The theft of hemp plant tops at Ft. St. John eliminated the opportunity of obtaining any valid yield data.
 - d) The effect of b and c was to reduce lab analytical requirements, the cost of harvesting, seed processing, data processing and analysis and the consultant's time and travel.

Summary comments, conclusions:

- The severe hail storm, the second in three years at Dawson Creek and the theft of hemp tops at Ft. St. John has had a devastating impact on obtaining multiple year data on which to base recommendations. Nevertheless, some useful information has been obtained to provide some guidance to interested growers.
- It appears there can be a seedling vigor problem with some varieties (even with excellent germination tests) under cool dry soil conditions resulting in poor and spotty emergence. Other varieties were less affected. Further investigation is required on this problem. Also, a cold temperature germination test might be useful in identifying low seed vigor lots.
- Soil temperatures should be above 6°C for a few days to allow for germination and emergence. In 2000 better emergence was obtained with early seeding when the soil was warmer than later seeding when soil temperatures had dropped. In 1999, late May seeding was the best. Once emerged hemp appears to have a good tolerance to spring frost.
- Limited testing suggest that the early maturing, short strawed, high yielding variety Fin 314 would be the most suitable seed variety of those tested under Peace River conditions. There are other varieties for dual-purpose use or fibre use which can be grown in the Peace Region but are later maturing.
- The hemp plots at Ft. St. John withstood driving wet snow and rain in September as well or better than most conventional crops.
- Results from analysis of the hemp sampled for silage purposes indicate it was not an especially attractive silage source under the circumstances that existed at Ft. St. John in 2000. Although results from a preliminary trial in the Alberta Peace in 1999 were more promising, this use for silage is not currently permitted under the industrial hemp regulations.

Attachments: none. Detailed financial statements available on request