

# Evaluating Hemp Grain and Fiber Varieties in the Interlake

**Project Duration** – 2019

**Objectives** – Assessing different hemp varieties for grain / fiber yield potential in the Interlake.

**Collaborators** – Canadian Hemp Trade Alliance  
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## Results

Plant establishment did not vary when compared among different hemp varieties (Table 1). Plant stand varied from 13.3-17.8 plants per meter row length. Plant height varied among different hemp varieties and CRS-1 and Judy were taller than all other varieties. Similarly, hemp varieties also varied for their maturity and varieties Judy and X59 took more number of days to mature. Hemp variety, X59 had highest grain yield and was significantly higher than Grandi, Katani, CFX-2, and Judy. Judy had the least grain yield.

*Table 1. Hemp plant phenology and grain yield results from grain varieties trial.*

| Variety            | Plant stand<br>(No of plants/1 m row) | Plant height<br>(cm) | Days to maturity  | Grain yield<br>(lbs/acre) |
|--------------------|---------------------------------------|----------------------|-------------------|---------------------------|
| Grandi             | 17.8a                                 | 118b                 | 105b              | 947b                      |
| X59                | 15.8a                                 | 127b                 | 111a              | 1202a                     |
| Katani             | 15.7a                                 | 118b                 | 103bc             | 938b                      |
| CFX-2              | 15.6a                                 | 131b                 | 105b              | 966b                      |
| CRS-1 (check)      | 13.5a                                 | 150a                 | 101c              | 1060ab                    |
| Judy               | 13.3a                                 | 158a                 | 110a              | 706c                      |
| <b>P (at 0.05)</b> | <b>0.185</b>                          | <b>&lt;0.0001</b>    | <b>&lt;0.0001</b> | <b>&lt;0.0001</b>         |
| <b>CV (%)</b>      | <b>16.6</b>                           | <b>6.4</b>           | <b>1.6</b>        | <b>10.2</b>               |

*Different letters in each column denotes statistically significant differences among varieties.*

*Table 2. Hemp plant phenology and fiber yield results from fiber varieties trial.*

| Variety            | Plant stand<br>(No of plants/1 m row) | Plant height<br>(cm) | Days to maturity  | Fiber yield<br>(lbs/acre) |
|--------------------|---------------------------------------|----------------------|-------------------|---------------------------|
| Altair             | 16.6                                  | 186b                 | 108c              | 7798ab                    |
| CRS-1              | 16.3                                  | 157c                 | 107c              | 6900b                     |
| Petera             | 13.5                                  | 207ab                | 121a              | 8942ab                    |
| Silesia            | 8.2                                   | 216a                 | 111b              | 10217a                    |
| <b>P (at 0.05)</b> | <b>0.014</b>                          | <b>&lt;0.0001</b>    | <b>&lt;0.0001</b> | <b>0.04</b>               |
| <b>CV (%)</b>      | <b>24.2</b>                           | <b>6.6</b>           | <b>1.2</b>        | <b>17.0</b>               |

*Different letters in each column denotes statistically significant differences among varieties.*

Plant establishment did vary among different hemp fiber varieties and variety Silesia had less plant stand. Silesia was also the tallest variety among fiber varieties tested, whereas CRS-1 had the shortest plants (Table 2). Fiber variety Petera took significantly more number of days to mature. Hemp varieties differed in fiber yield and CRS-1 had the lowest fiber yield.

## **Project Findings**

The test hemp varieties differed in grain / fiber yield at Arborg site. Grain yield ranged from 706 – 1202 lbs/acre for different varieties tested. For making hemp variety decisions, Interlake producers could use these testing results. These results can also be found in Seed Manitoba.

## **Background / Additional Resources / References**

The Canadian Hemp Trade Alliance (CHTA) is a not-for-profit organization, which represents over 260 growers across all 10 provinces as well as numerous processors, distributors, developers and researchers involved in Canada's rapidly growing industrial hemp industry. This current project was funded by CHTA and it looked at separate grain and fibre varieties of hemp how they perform in Interlake region.

## **Materials and Methods**

*Experimental Design* – Randomised block design with four replications.

*Treatments* – Six hemp varieties in grain trial and four varieties in fiber trial (See Tables 1 & 2).

*Plot size* – 9.12m<sup>2</sup>

*Data collected* – plant stand, plant height, lodging, days to maturity, grain and fiber yield

### ***Agronomic info***

*Stubble, soil type* – Fallow, heavy clay

*Fertilizer applied* – Soil nutrient levels (lbs/acre): N – 51, P<sub>2</sub>O<sub>5</sub> – 28, K<sub>2</sub>O – 740

N – 70lbs/acre and P – 40lbs/acre were applied at seeding.

*Pesticides applied* – Brotex 240 @ 0.5 L/acre on June 19

*Seeding/harvesting date* – May 22 / Sept 17