

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 (No of plants/1 m row)	Plant height (cm)	Days to maturity	Grain yield (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
P (at 0.05)	0.185	<0.0001	<0.0001	<0.0001
CV (%)	16.6	6.4	1.6	10.2

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 (No of plants/1 m row)	Plant height (cm)	Days to maturity	Fiber yield (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
P (at 0.05)	0.014	<0.0001	<0.0001	0.04
CV (%)	24.2	6.6	1.2	17.0

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 – 9.12m²

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, P₂O₅ – 28, K₂O – 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