

Evaluating Hemp grain and fiber varieties for yield

Project Duration – 2018

Objective – Assessing different hemp varieties for grain / fiber yield potential.

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Results

Grain yield results are available through the SEED Manitoba guide (2018). Hemp varieties differed in grain yield in Arborg (Table 1) and CRS-1 had the highest grain yield. This variety also had taller plants (at maturity) as compared to all other varieties tested. X59 took 100 days to mature and this maturity period was significantly higher than for Katani, CFX-2 and Grandi.

Table 1. Hemp growth and grain yield results from Arborg grain varieties trial.

Variety	Plant height (inches)	Days to Maturity	Grain yield (Kg/ha)
CRS-1	47.9b	97.3ab	1222.5b
Katani	39.7a	94.0a	1147.9ab
CFX-2	41.1a	94.8a	1166.9ab
X59	39.2a	99.8b	1087.5a
Grandi	41.5a	95.0a	1084.4a
LSD (p value)	3.3 (<0.001)	3.5 (0.019)	93.1 (0.04)
CV (%)	5.2	2.4	5.3

Hemp fiber varieties did not differ in plant height at maturity (Table 2). However, Silesia and Anka took significantly more number of days to mature, when compared with other varieties. The varieties Silesia, Anka and Altair produced less grain yield than varieties CRS-1, Joey and Canda did. However, Silesia produced significantly higher fiber yield.

Table 2. Hemp growth and grain/fiber yield results from Arborg grain/fiber varieties trial.

Variety	Plant height (inches)	Days to Maturity	Grain Yield (Kg/ha)	Fibre Yield (Kg/acre)
CRS-1	55.8a	96.3ab	1150.7d	1237a
Silesia	64.9a	101.3d	565.1a	1843b
Joey	59.6a	95.8a	1192.2d	1058a
Anka	61.1a	99.3c	845.2b	1262a
Canda	56.8a	96.5ab	1157.0d	1301a
Altair	59.3a	97.3ab	975.3bc	1236a
JOEY_FILL	56.7a	98.0bc	1074.5cd	1169a
LSD (p value)	(0.397)	1.93 (<0.001)	134.5 (<0.01)	370 (0.008)
CV (%)	10.1	1.35	9.1	19.3

Project Findings

Arborg site had seen differences in grain / fiber yield among hemp varieties tested. Grain yield ranged from 565 – 1222 kg/ha for different varieties tested in both trials.

Background

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.

There were a number of new developments in Canadian legislation in 2018 with a very direct affect on Canadian hemp growers. The [CHTA website](#) outlines these new developments, specifically the changes in Cannabis legislation as well as Health Canada's revision of Section 56 of the Controlled Drugs and Substances Act (CDSA). These changes now allow hemp farmers to immediately collect and store industrial hemp flower, bud and leaf material, a vital piece which was previously prohibited.

This current trial 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 – Five hemp varieties in grain trial and seven varieties in grain/fiber trial (See Tables 1 & 2).

Plot size – 8.22m²

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 – 28, K – 740

N – 25 lbs/acre and P – 20lbs/acre was applied at seeding.

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

Seeding/harvesting date – May 22 / Aug 30