



2023 Industrial Hemp Fiber Variety Trial

Dr. Heather Darby, UVM Extension Agronomist
Laura Sullivan

2023 INDUSTRIAL HEMP FIBER VARIETY TRIAL

treated as fixed. Mean comparisons were made using the Least Significant Difference (LSD) procedure when the F-test was considered significant ($p < 0.10$).

Variations in yield and quality can occur because of variations in genetics, soil, weather, and other growing conditions. Statistical analysis makes it possible to determine whether a difference among treatments is real or whether it might have occurred due to other variations in the field. At the bottom of each table an LSD value is presented for each variable (i.e., yield). Least Significant Differences (LSDs) at the 0.10 level of significance are shown, except where analyzed by pairwise comparison (t-test). Where the difference

Table 4. The impact of variety on plant characteristics and harvest yield of industrial hemp fiber, Alburgh, VT, 2023

Variety	Plant height cm	Stem diameter mm	Harvest population plants ac ⁻¹	Harvest population plants ft ⁻²	Dry matter yield lbs ac ⁻¹	Dry Matter Yield Tons ac ⁻¹	Bast fiber %	
Bialobrzieski		4.68	805,324	18.5	13,686	6.84	33.6*	66.4

French varieties including Ferimon 12, Fibror 79, Futura 83, and Muka 76, continue to be consistent and reliable performers in our region (Table 4). These varieties also produced some of the highest bast fiber yields in the trial. Fibror 79 has a unique genetic marker that colors the stem and foliage yellow, as seen on the cover page of this report. This is a characteristic that is unique to some fiber hemp varieties and is linked to a more tender and less hearty stalk than some. For these reasons, Fibror 79 had the most severe lodging compared to its more robust counterparts.

The tallest of the fifteen varieties in the 2023 fiber variety trial was Fiber 1 by Kanda Hemp with an average

Figure 2. Plants per acre by variety and year for hemp fiber variety trials in 2021, 2022, and 2023 Alburgh, VT.

Despite the greater dry matter yields in 2023, 2022 generally had higher populations of plants per acre, meaning that 2023's greater yields were attributed to fewer, bigger plants, not more plants. It was visibly obvious to our team that the 2023 trials were significantly taller than in the previous year, as illustrated by Figure 3. We speculate that rainfall may have played a role in the size of the plants for the

Figure 3. Average plant height in cm by variety and year for hemp fiber variety trials in 2021, 2022, and 2023, Alburgh, VT.

DISCUSSION

According to the National Hemp Report issued by the USDA in early 2023, the average yield for 2022 fiber hemp was estimated at 3070 lbs ac⁻¹.