

Industrial Hemp

TOWN OF

VEGREVILLE

Vegreville has emerged as a global investment destination for processing and manufacturing of highly versatile industrial hemp seed, fibre and cannabidiol (CBD). With long summer days, the region has the proven "Northern Advantage" for growing fibre and the climate and soils are well suited to industrial hemp varieties. The region's high yields of fibre biomass are prized by the companies that want to convert these feedstocks into a wide range of products.

Vegreville is in the heart of a very strong agriculture region with gross farm cash receipts reaching over \$2.9 billion in 2016 and within a 150 km radius has access to close to 6 million cultivated acres.

Source: Federal Census 2016

The Growing Market

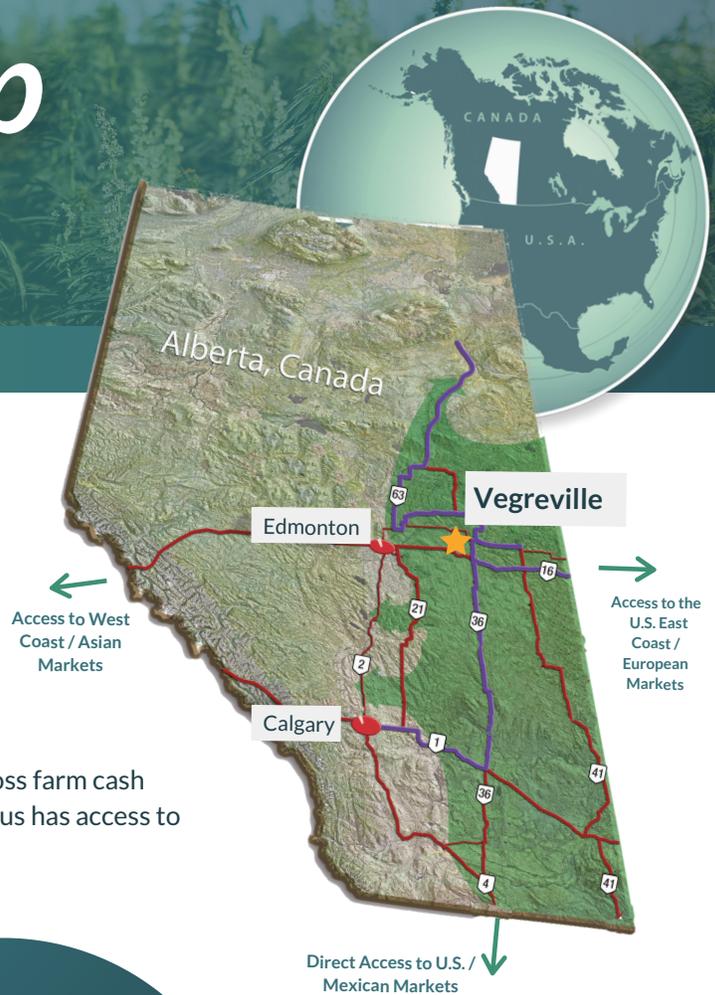
The future of the natural fibre composites (NFCs) market is attractive with opportunities in the automotive, building, construction and textile industries.

The Hemp Fibre Market was valued at USD 4.46 Billion in 2019 and is projected to reach USD 43.75 Billion by 2027, growing at a compound annual growth rate (CAGR) of 33% from 2020 to 2027.

Source: Verified Market Research

Vegreville features:

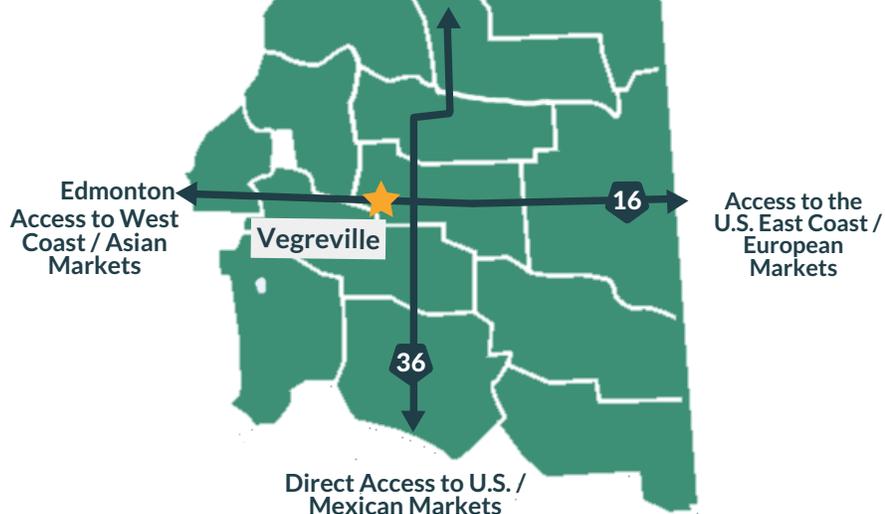
- Industrial hemp research/decortication facilities
- Access to Highway 36 a main north/south corridor connecting to the U.S. & Mexican Markets
- Highway 16 (east/west) corridor connects to the west coast/Asian markets
- Lower operating costs / Shovel ready land



Higher Yields

Longer northern daylight hours in the summertime means that the Vegreville region could grow up to 30% higher yields of hemp stalks than in southern regions of the province.

"6 million cultivated acres within 150km of Vegreville."



Vegreville Region Industrial Hemp Supply

The Northern Advantage

Industrial hemp is adapted to a wide variety of soil and climatic conditions of Alberta. Hemp is a photoperiod (light) sensitive crop. Therefore, in the Vegreville region that enjoys longer days in late spring/early summer the same hemp variety can grow much taller plants and produce 20-30% higher yields of stalks than in the southern regions that receive 2-4 hours less of daylight during this period. This “Northern Advantage” predestinates hemp to be a significant fibre crop in the Vegreville region.

The Vegreville region has the climate and farming capacity to grow hemp. The region has close to 6 million cultivated acres.

Hemp Varieties

Industrial hemp is grown primarily for its seeds and fibres, or in some cases both - “dual-type”. However, seed growers want very tall fibre varieties, while short-grain type varieties are less useful for fibre production due to low straw yields of poor quality. Varieties indicated as grain/dual typically have been grown for seeds, but they also produce significant yields of straw that are acceptable for fibre processing.

Now the opportunity exists for farmers to grow industrial Hemp varieties for CBD.

The global **CBD market size was valued at USD 2.8 billion in 2020** and is expected to expand at a compound annual growth rate (CAGR) of 21.2% from 2021 to 2028. Due to its healing properties, the demand for CBD for health and wellness purposes is high, which is the major factor driving the market growth.

Source: www.grandviewresearch.com

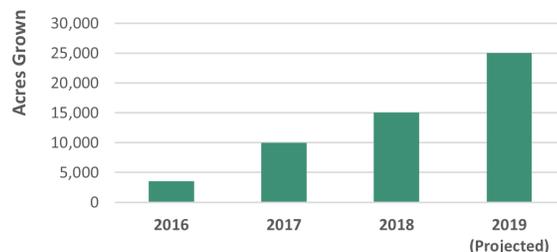
Finola leads Registered Hectareage for Cultivation of Industrial Hemp with 6030.97 hectares in 2020, but other varieties have higher fibre yields:

Summary of Relevant Varieties and Predominant Usage		
Variety	Type	Owner
X59	Grain/Fibre	TerraMax
CFX-2	Grain/Fibre	Hemp Genetics International
CRS-1	Grain/Fibre	Hemp Genetics International
CFX1	Grain/Fibre	Hemp Genetics International
Canda	Grain/Fibre	Parkland Hemp Growers
CanMa	Grain/Fibre	Manitoba Harvest
Altair	Fibre	UniSeed
Anka	Fibre	UniSeed
Silesia	Fibre	Innotech Alberta Uniseed
Joey	Fibre	Parkland Hemp Growers
Painted Lady	CBD	Davis Hemp Farms
Eighty-Eight	CBD	Davis Hemp Farms

Source: Health Canada

Farmers in the Vegreville region have been very innovative in growing and harvesting hemp. They see the potential in placing hemp in their rotation as a profitable crop that also sequesters carbon.

Hemp Acres Grown in the Vegreville Region



Source: InnoTech Alberta and Communities (Numbers are app./subject to change)



There are thousands of known uses for hemp, like Hempcrete. The heating and compressing of hemp fibres can create building materials superior to wood in strength, quality and cost. Hemp is heat, mildew, pest, light and rot-resistant. Hemp fabric is softer, warmer, more water resistant and more durable than cotton. Hemp fabric also uses less chemicals to produce.

Vegreville Region Processing Opportunities

The Decortication Opportunity

The InnoTech facility at Vegreville conducts the majority of the province's research on hemp and is equipped with a decorticator (pilot scale). At present, the fibre it produces through decortication is quickly purchased by companies in Alberta.

The Vegreville Seed Cleaning plant has the capabilities for cleaning hemp seed for advanced hemp seed processing.

Processing Industrial Hemp Seed Protein

Hemp seeds are 25 percent protein. It is a complete protein, containing all 9-essential amino acids that humans must get from food.

The global plant-based protein market is estimated at more than USD \$8 billion and is expected to reach USD \$14.8 billion by 2023 with an expected compound annual growth rate of 5.9%.



Source: Jan Slaski, InnoTech Alberta

The Vegreville Regional Hemp Value Chain

“The Northern Advantage” makes the Vegreville region a natural fit to grow hemp and the economics of shipping hemp also make it a great location for processing and manufacturing.

Feedstock → Decortication → Manufacturing

Locating in Vegreville is Key

The key to processing hemp straw /fibre is the need to be in close proximity to the feed stock, which is in ample supply close to Vegreville.

Hemp transport costs are high because it is bulky. According to Dr. Jan Slaski of InnoTech, “a processing facility should be within 100-150km of the feedstock source.”

Industrial Hemp Value Chain

Hemp producers are capitalizing on all three hemp plant varieties: fibre varieties, dual-purpose and seed. Most of the hemp is grown for fibre/hurd that can be used for textiles, non-woven materials or for construction materials, and all these varieties can be used to extract CBD.

CBD Medical Applications

CBD is a compound that has shown promise in a variety of medical applications including pain relief, nausea reduction, lowering inflammation, relieving anxiety and many other ailments in between.

Growers can sell their hemp flowers and leaves to Licensed Producers (LPs) of CBD. More than 100 companies are LPs in Canada, and they will be buying hemp biomass from growers.

CBD rocketed to the best-selling herbal dietary supplement in natural sales channels ousting turmeric as the No. 1 seller, according to a new report from the American Botanical Council (<http://cms.herbalgram.org>).

Vegreville Manufacturing and Processing Opportunities

Fibre

While growing hemp is a natural fit for the Vegreville region, so is fibre manufacturing. The textile industry is one of the largest hemp fibre markets as it is used in textiles and with its very high tensile strength are desired benefits in bio-composites. The building market has an interest due to hemp's durability, antimicrobial, acoustic and aesthetic properties.

Seed

The nutritional enrichment and beneficial properties of hemp seeds are driving the market. Some of the suppliers and manufacturers of hemp seeds are: Navitas Naturals, North American Hemp and Grain co., Kenny delights, Manitoba Harvest Hemp Foods, Green source organics, CHII Naturally Pure Hemp and GFR Ingredients Inc.

CBD

The key to processing hemp for CBD oil is the need to be in close proximity to the feedstock, which is in ample supply in the Vegreville region. Processing facility should be within a 100 – 150 km of feedstock.



The Vegreville Investment Advantage

Access to Markets

- Highway 36 (located 22km east) is a main north/south corridor connecting to U.S. and Mexican markets.
- Highway 16 (The Yellowhead) connects east-west to the strategic west coast ports and Asian markets.
- Edmonton International Airport is located 60 minutes away via Highway 16 west.
- Major freight and courier services provide daily service.

Land

- Fully serviced/fibre internet connected commercial and industrial land available.

Demographics

- Population 5,708.
- Median age 44.
- Access to the Edmonton market with a population of well over 1.2 million.

Applied Research

- InnoTech Alberta is located in Vegreville conducts the majority of the alternative crop research in Alberta, including industrial hemp and flax fibre.
- For CBD extraction companies, workforce familiarity with solvents and chemical processes is critical. Vegreville offers a workforce that is familiar with these processes.

Education

- 29% of local labour force have education in engineering and related technologies with strengths in management and science.
- 47% of residents have a post-secondary certificate, diploma or degree.
- A higher-than-average proportion of people have apprenticeship/trade certificates and diplomas.

Choosevegreville.com

We strive to provide current/accurate information but it is subject to change. Please contact 780-632-3891 for the latest information. Published: July 9, 2021

TOWN OF
VEGREVILLE

Eastern Alberta Trade
CORRIDOR
We Mean Business