

September 2012



Industrial hemp Uganda is a company limited by guarantee. It was incorporated and fully registered to operate in Uganda in April 2012.

The main objective of Industrial Hemp Uganda Ltd is to introduce and promote industrial hemp and its products in Uganda as an alternative source of sustainable income among the local communities in order to improve their livelihood.

## What is industrial hemp?

- Hemp (from Old English *hænep*) is mostly used as a name for low tetrahydrocannabinol (THC) strains of the plant *Cannabis sativa*, of fiber and/or oilseed varieties.
- In modern times, hemp has been used for industrial purposes including paper, textiles, biodegradable plastics, construction, health food and fuel with modest commercial success.
- There are majorly two varieties of *Cannabis*; *Cannabis sativa* L. subsp. *sativa* var. and *Cannabis* subsp. *indica*.
- The major difference between the two types of plants is the appearance and the amount of tetrahydrocannabinol (THC).
- Industrial hemp (*cannabis sativa sativa*) contains below 0.3% THC, while cultivars of *Cannabis* grown for marijuana can contain anywhere from 2% to over 20%.
- The variety grown and promoted by Industrial Hemp Uganda is *cannabis sativa sativa* which has good fibre.



**Hemp growing in Mbale district**



**Hemp Growing in Bulambuli**

### **Why should Uganda engage in production of Industrial hemp?**

Hemp can serve as sustainable natural alternative to the environmental challenges, being beneficial to the people of Uganda in the following ways;

1. Commercial farming. Hemp is in line with poverty eradication plan of Uganda where, the government is encouraging people to get involved in commercial farming. The reason why the government has put projects like National Agricultural and Advisory services (NAADs).
2. Growing hemp is very easy compared to any other cash crop in Uganda due to the following advantages its has;
  - Labor extensive
  - Soil improvement
  - No chemicals use
  - No artificial fertilizer needed
  - Excellent weed control
  - Good crop rotation or year after year production
  - Hemp matures within 4 months

3. Source of Energy for cooking. Of recent there has been lack of energy for cooking and charcoal prices drastically increased from 25.000 to around 80 -100.000(>25 USD) and with reduction of forests, hemp will be the best replacement and saving the few forests that are still surviving.
4. Sustainable products. The alternative natural fibre as a replacement of glass fibre and other fossil based material.
5. Hemp crop yields are high. It produces approx 7,000 kg / ha. The hemp straw consists of 25% fibre, 65% shives and 10% dust.
6. Hemp can do well in relatively dry areas as it requires minimal amount of water as shown in the above table. Therefore, can grow well in all parts of Uganda.
7. Ready market for the produce. There is increased demand for hemp raw materials all over the world and Hempflax industry in Netherlands has agreed to buy all the fibre that will be produced in Uganda.



*A farmer weeding Hemp in Bulambuli*



## WHAT IS HEMP USED FOR?

### 1. *Automobile industrial use*

The fibre in its pressed form for manufacturing parts such as door panels and dash boards. There's a vast and growing market for high quality grade in Europe, the hemp fibres can be exported. Mercedes, BMW and Lotus are using natural fibres. PSA (Citroen, Peugeot) have plans to do so.

To apply Hemp fibres as a replacement of glass fibre the fibres need to have a couple of processes to clean and refine the fibre.

### 2. *Renewable energy*

Like all charcoal, biochar is created by pyrolysis of biomass. Biochar is under investigation as an approach to carbon sequestration to produce negative carbon dioxide emissions. Biochar thus has the potential to help mitigate climate change, via carbon sequestration. Independently, biochar can increase soil fertility, raise agricultural productivity and reduce pressure on forests, though the degree to which results offer long term carbon sequestration in practice has been challenged. Biochar is a stable solid, rich in carbon and can endure in soil for thousands of years.



### 3. *Biomass Pellets*

Pellets are a type of fuel, generally made from compacted sawdust or other wastes from sawmilling and other wood products manufacture, Pellets are manufactured in several types and grades as fuels for electric power plants, homes, and other applications in between.[ Pellets are extremely dense and can be produced with a low moisture content (below 12%) that allows them to be burned with a very high combustion efficiency.



### 4. *Biofuels*

such as biodiesel and alcohol fuel, can be made from the oils in hemp seeds and stalks, and the fermentation of the plant as a whole, respectively. Biodiesel produced from hemp is sometimes known as "hempoline".Hemp is clean burning and non-toxic.

Filtered hemp oil can be used directly to power diesel engines. In 1892, Rudolf Diesel invented the diesel engine, which he intended to fuel "by a variety of fuels, especially vegetable and seed oils, which earlier were used for oil lamps, i.e. the Argand lamp.



## 5. Construction materials

Hemp Bricks / Hemp concrete Hempcrete is a mixture of hemp hurds and lime (possibly including sand, pozzolans or cement) used as a material for construction and insulation. It is easier to work than traditional lime mixes and acts as an insulator and moisture regulator. It lacks the brittleness of cement and consequently does not need expansion joints. It is less dense than concrete and is marketed under names like Hemcrete, Canobiote, Canosmose, and Isochanvre. However, the typical compressive strength is around 1MPa, over 20x lower than low grade concrete.



## 6. Manufacture of Fabric

Hemp fibers can be used in clothing and making other fabrics. Pure hemp has a texture similar to linen.



A sac made from hemp fibre.



Rope made from hemp

## Growing of Industrial hemp in Uganda fits well with the theme, “50 years of creating wealth and growth in Uganda.” as follows:

- Hemp is a first growing crop and matures within 4 months. Some one can grow it three times in a year and hence assured of getting income through out the year.
- Its labour extensive, therefore little investment and more profits.
- It requires very little amount of water ( provided it got enough for the first 4 weeks after planting) for its growth. Therefore, it can grow in almost all parts of the country.
- It has a ready market as its required as a raw material in most countries of the world mainly as fibre and seeds.
- Its highly productive as one can harvest 7 tonnes of fibre per hectare.

## DO YOU WANT TO BE PART OF THIS VENTURE?

If you want to be part of this venture please contact the Industrial hemp Uganda ltd team through the contacts at the bottom of this page.

So far the team is conducting pack trials in the following areas:

1. Kiryandongo,
2. Masindi,
3. Bulambuli,
4. Mbale
5. Rubirizi
6. Namugongo
7. Ziobwe

**Thank you for supporting the introduction of industrial hemp in Uganda!**

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