

Climate change series

Focus on changing crops: growing hemp

Name: **Dan Squier**

Region: **Essex**

Grows: **Hemp in a rotation with wheat and rape**

Size: **580 Ha**

No. of farm/office staff: **2 farmers and 2 support staff**

Background: **Dan farms with his brothers and they have been on this farm for four generations**



How long have you been growing hemp and why did you start?

We first included hemp in our rotations in 1999. We noticed the market for food crops becoming worse and wanted more options. There was a local company in the area that required hemp and it fired my imagination. It also seemed to have good gross margins.

As a crop, how is hemp used?

There are two parts of the crop, the fibre and the shiv or hurds, which are used for manufacturing a variety of goods. The fibre has a number of different industrial uses including being mixed with resin to be moulded to make car parts. For instance, BMW uses

hemp fibre to build some of its dashboards and door liners. It is contributing to the effort to make cars recyclable. The fibre can also be used to make mats for protecting produce, similar to bubble wrap. It can also replace fibreglass based insulation for homes. The shiv is used as horse bedding and there is a growing market in sustainable building materials. When mixed with a lime mortar mix, the shiv can be used to build walls and roofing to create a sustainable, well insulated building in which carbon is sequestered. In the normal construction of a three bedroom house, roughly 200 tonnes of CO₂ are emitted. With a house build using hemp based materials, about 80 tonnes of CO₂ can be absorbed. Also, a light weight boarding is being developed.



How is it grown?

Hemp is sown in spring, around the end of April. This helps to spread the workload. It is sown using a standard seed drill. By August, it will have grown to between three and four metres high. It is green when it is cut and consequently this is good for the soil structure. It can be cut using a forage harvester, and we have a contractor who comes in to do the cutting. It is left for two or three weeks to dry in the field and in September it is baled and dried and stored in the barn.



What benefits have you seen from including hemp in your rotations?

The inclusion of hemp helps to break the resistance of black grass to chemical control in cereals and OSR cycle. Hemp requires fewer inputs compared to wheat and OSR. We put 100kg of nitrogen, maintenance levels of P and K, and pre-sowing pesticides. Other than that, the crop doesn't require any further agrichemicals.

Who processes the hemp?

We are part owners of Hemcore Ltd. in Essex which runs a processing plant. Hemcore is building a new plant with increased output in North Suffolk where the hemp can be processed and packaged and then sold on to the end users. We anticipate needing over 25,000 acres of hemp in order to meet our demand in three years time.

How can growing hemp help with climate change?

It is estimated that hemp requires about half the amount of nitrogen fertiliser as an equivalent crop of wheat. We have noticed a positive effect on the soil structure. Many of the products that are made from the hemp composites can be used to replace petroleum based products, thus locking carbon into newly manufactured goods.

Are there any unique challenges to growing hemp?

To begin with, the harvesting processes needed streamlining to include the use of big bales. Also, in order to grow hemp you must first obtain a license from the home office that outlines the location and area of hemp being grown and how many farmers will be working with the hemp. This must be done annually. CSL is also required to take samples from each field in order to measure the THC (the potential narcotic) content. However, the variety of cannabis we grow now has virtually zero drug content. Farmers must also notify their local police as to the location of their fields which grow hemp.

Where do you see yourself going from here?

We are developing further harvesting processes to end up with a two pass operation in the field. We are also developing the use of fibre-based bale twine that can be processed with the fibre. It will replace the plastic based twine that can interfere with processing.

What advice would you give to those growing hemp?

Hemp is suited to a wide range of soil types. It is essential to store it dry. Pigeons can also be a real problem in the cotyledon stage of growth.

**FARMING
FUTURES**

For news, events, and links to stories about how other farmers are managing climate change on their farms, please visit: www.farmingfutures.org.uk

With thanks to: ARF, BBRO, BPC, BPEX, Carbon Trust, CLA, Defra, EBLEX, Forum for the Future, HDC, HGCA, MDC, NFU, PGRO and UKCIP