

The Flax and Needle Festival, Vallée du Dun, 3-5 July 2015

Visit to the *Terre de lin* museum in Fontaine-le-Dun and pulling up flax at the château de Silleron (Angiens)

Different varieties of flax are used to produce oil or obtain textile fibres. The text below refers to the plant used for textile fibres.



Graine de lin



champ de lin



capsules de lin

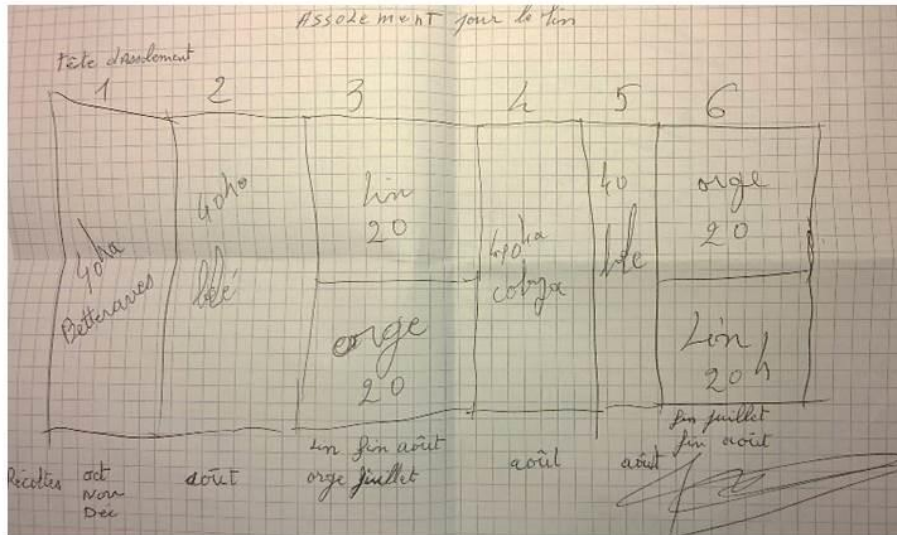


fleur à cinq pétales

Flax seeds flax field flax capsules five-petal flower

Crop rotation and sowing

Flax needs to be grown in rotation with other plants. It is grown alternately with sugar beets, barley, rape seed, wheat, peas etc. and returns to the same plot every six or seven years.



Assolement pour le lin selon A. Mauduit.

Flax crop rotation according to A. Mauduit.

The seeds are sown in March at a rate of 2,000 seeds per square metre.

Growth

The plant emerges in 10 days. It should not be over-fertilised. It needs to mature for 110 days in an optimal climate, with at least 90 days of growth. It needs plenty of water and is sensitive to wide variations in temperature. It is both demanding and fragile. In dry regions it needs to be irrigated. In 2015, the crop emerged during a cold spell so the flax was therefore relatively short. The five-petal flowers appeared towards mid-June. They only last one day and close at night to form a seed capsule. Each petal produces two seeds.

Harvesting

The flax is pulled up, not cut, as the fibres stretch right down into the roots and the aim is to extract the longest possible fibre. It is ready to be pulled when the leaves have fallen from 2/3 or even 3/4 of the stem. This usually takes place at the start of July.

In the past, the flax was pulled up manually. It was men's work. They took hold of a large handful and pulled it up with a twisting motion. A *boisselé* (the area needed to yield a bushel, variable according to the location but which generally corresponds to 12.7 ha) was allocated to each worker. This surface corresponded to a bushel of flax or the amount of flax seeds needed to resow the *boisselé*. The worker was paid for the number of *boisselés* harvested.

It would take a family one week to pull up the flax from one hectare. Machine harvesting was introduced in the mid XXth century and today the same surface area can be harvested in just thirty minutes. The crops on the edges of the fields are pulled up to leave room for the machines to pass.

Mechanical flax harvesting



Arrachage du lin mécanique

Drying

The flax pulled up is green and handfuls of flax are arranged into sheaves which allows the air to circulate to dry the plants out.

Four sheaves formed a chain. The flax is bundled and the bundles arranged in groups of ten. They are positioned vertically with one bundle covering the others at an angle to protect them against the rain.

They are left for 8 -10 days and then positioned into a large reel, with the heads of the sheaves facing outwards. In short, this stage involves creating increasingly large formations of flax.

Flax harvesting and (traditional) sheaving by Antoine Mauduit



Arrachage du lin et mise en javelle (à l'ancienne) par Antoine Mauduit

The flax fibres are located around a cellulose stem. They therefore need to be separated from the stem which is why the flax is left in the fields for retting. During this process As a result of alternating rain and the sun, micro-organisms degrade the pectins which bind the fibres to the straw (stem). This takes anywhere between two weeks and two months depending on the weather. It is highly unpredictable, if it doesn't rain the retting cannot take place. The stems rot away and the flax is turned half way through the process. The seed capsules are recovered and crushed to remove the seeds which are then sorted and reused for sowing. Once the flax is ready it needs to be processed very quickly or the quality of the fibre will be compromised.

Ground retting only came into use in 1965. Before this, and still today in some parts of the world, water retting in tanks was used. The bundles are immersed in water heated to 37°C and the process takes just 48 hours. The flax swells with water. This technique is very labour intensive. Ground retting is much more economical, but there is a greater risk that some of the harvest will be lost (in 1981, 43% of the harvest had to be burned).

Flax laid out in a field for retting.



Lin étalé dans le champ pour rouissage.

Scutching

After retting the flax is gathered towards the end of August, start of September. It is gathered into rolls with the stems all pointing in the same direction. Each grower stocks their own flax. The different lots are separated out and processed in turn by the cooperative (*Terre de lin*).

In the past, the Belgians came to Normandy to buy flax after retting. The development of a scutching plant which allowed the flax to be processed locally considerably improved yield.

Flax prior to scutching



Lin avant teillage

Scutching involves extracting the fibre by separating it from the anas. The stems are ground using rollers. Up to the end of the XIXth century scutching was done using a manual wooden grinder.

From 100 kg of flax, it is possible to obtain:

- 25 kg of long fibres, i.e. 25% (bast fibres)
- 10-15% tow or short fibres due to mechanical errors
- 50% of anas (straw, used to make bales)
- Seeds and capsules
- 4-5% of dust (topsoil)

Anas tow or short fibres long fibres (bast fibre)



anas



étoupe



et fibre courte



fibre longue (filasse)



The last person capable of demonstrating manual scutching passed away several years ago.

Heckling

The Seine Maritime region produces 60% of global flax fibre production. The fibres are then pulled through heckling combs. Heckling involves passing the fibre through finer and finer combs. The fibre is stretched into a sliver or ribbon.

Today, around 30% of flax production is heckled. The slivers are coiled and stored in containers. Each container contains around 1,000 metres of sliver and weighs around 40 kilos. The heckling is carried out according to the clients' specifications.

Spinning

There used to be flax spinning mills in the north of France (Lille, Roubaix, Tourcoing) up until the 1950s and 1960s. Today they are closed and there is only one left in the Vosges. The flax line fibres are sent to China (80%) and Italy (20%) for spinning. In Normandy, working the flax is a cooperative venture. It takes 5 - 7 years to train someone. The mechanisation of the process has totally transformed social interactions and knowledge of the manual techniques for pulling up and sheaving the flax is gradually being lost.

Thanks to Jean-Marc Hemeryck, former Director of the *Terre de lin* cooperative and plant, and Antoine Mauduit, retired flax grower who not only provided us with a detailed explanation of traditional flax work but also invited us to his home to continue our fascinating discussion.



Text by Cécile Michel, with Kalliope Sari, Caroline Sauvage, Marie-Louise Nosch, Angela Sheng, Sophie Desrosiers, Susanne Lervad and Brigitte Lion.