

FLAX TRIAL AT HENGIBSTURY HEAD VISITOR CENTRE 2017

Flax, *Linum usitatissimum*, is a member of the genus *Linum* in the family Linaceae - also known as common flax or linseed. Cultivated in cooler regions of the world, it produces both food and fibre. In the west textiles made from flax are known as linen and include bed sheets and table linen. Fibres are two to three times stronger than cotton, though less flexible. Other uses of flax are twine and rope, canvas and webbing, as well as being a raw material in high-quality paper such as banknotes, cigarette paper and tea bags. The oil extracted from the seed is linseed oil and is used both as a nutritional supplement and an ingredient in wood finishing products. Cultivated plants grow up to 1.2m with tall slender stems, glaucous slender leaves and pale blue flowers with five petals, the fruit a round dry capsule 5-9mm in diameter containing several glossy brown seeds.

Spun, dyed and knotted wild flax fibres dating to the Upper Paleolithic, 30,000 years ago, have been found in present day Republic of Georgia. There is evidence that flax was first domesticated in the Fertile Crescent 9,000 years ago. Use of the plant spread as far as China and India, Switzerland and Germany by 5,000 years ago. Cultivation was extensive in ancient Egypt, evidenced by paintings on temple walls, linen wrapped mummies and Egyptian priests who only wore linen, a sign of purity. Linen was traded around the Mediterranean by Phoenicians and Romans; in the middle ages the industry centred on Flanders and much later production flourished in North America until in the early 20th century when cheap cotton and rising production costs resulted in 90% of the world's output being produced in northern Russia, since when more modern fabrics have come to the fore.

Growing and harvesting

Flax is best sown in a block rather than a long row. It needs to be grown close together to produce good fibre and so that plants can support each other. Soil should be well cultivated, weeds removed and raked to a fine tilth; seeds should be sown thinly, covered with thin layer of soil. The optimum time for sowing is the last two weeks of March.

Flax is ready to harvest at about 30 to 35 days after flowering, when the stalks are turning yellow but still show some green in them. From seed sowing to harvest takes approximately 100 days. The longer the flax plants are left, the coarser the fibre. Conversely, if harvested a few days after flowering, a very fine flax fibre is produced. When ready, plants should be pulled up, maximising fibre length, keeping seedpods in one direction, roots in another. The flax should be tied in bundles or stooks and left upright to dry. To harvest seed, leave a small patch of flax in the ground until the seedpods are brown and dry. Traditionally a flax ripple would be used to remove seed but a plastic comb could be used to comb seeds away from the plant. Seeds are ripe when the capsules are yellow and just splitting. Commercially, if a crop is grown for its seeds, a combine harvester would cut either just the head of the plant, or the whole plant. The flax straw, if not required for linen, is typically burnt, being slow to decompose, or possibly sold for biofuel.

Flax fibres are part of the inner bark giving the plant mechanical strength. This type of fibre is known as bast fibre (nettles, hemp and jute are other examples of bast fibres). These fibres are stuck together with a 'glue' formed of pectins and lignins (fibrous material). To prepare flax for spinning, several processes are necessary.

Retting

First, fibres must be extracted from the stems in a process known as retting in which micro-organisms and moisture dissolve or rot the cellular tissues and loosen the fibre. Water retting involves immersing the flax in water. The fibre usually rets in about five days. Dew retting involves spreading the flax on grass, turning once a week, watering in dry weather. This process takes 3-6 weeks and produces a darker, more silver fibre than water retting, which tends to produce a more golden colour.

Commercially, flax fibres would be prepared mechanically, but there are simple hand methods to produce flax ready for spinning.

Breaking

After retting, the woody core, or boon, needs to be broken into small pieces in a process called breaking. The flax must be dry before it can be broken and it may take retted flax several weeks to dry properly. If correctly retted and dry enough, the inner core will break with a snap rather than bend. Bunches of flax fibres are beaten with the side of a wooden mallet, the flax turned constantly into a sausage shape to help keep fibres together, until the beaten flax becomes more flexible.

Scutching

Bundles of flax are held firmly in one hand and the index finger and thumb of a gloved hand is pulled through the fibres to remove any woody parts, leaving the flax fibres smooth and silky.

Heckling

The flax fibres are combed removing any remaining woody pieces, leaving fibres straightened and cleaned, ready to spin. Bunches of flax fibres resemble blonde (flaxen) hair.

The finished flax is placed on to a distaff, basically a rod or staff, to hold the fibres in place while spinning into yarn.

With limited space in the wildlife garden at Hengistbury, a very small area was sown on 12th April 2017. A little seed was scattered onto cultivated soil and covered thinly with soil. Germination rate was approximately 50% with seedlings appearing by mid May. Soon after mid June the flowers began to open, pale blue with five petals, producing seedpods like round capsules a few weeks later, gradually ripening from green to gold. Ripe seed will be collected for future sowings and it is hoped to harvest the flax crop and follow the processes detailed above to try to produce a sample of spun yarn.