

Fiber Plants



People have been using plant fibres for thousands of years in order to make clothing, rope, paper etc. Whilst all land plants contain fibres they are usually too short or too weak to be used for anything other than paper-making, but there are well over 100 species suitable for growing in temperate climates that produce long and relatively strong fibres. These fibres vary greatly in their physical properties and can supply us with cloths ranging from fine and silky to coarse sackcloth or ropes strong enough to berth large ships. We will describe a few of these fibre plants in more detail and, will confine the list to the perennial species. However, we must mention Flax (*Linum usitatissimum*), a well known fibre (and oil) producing annual which can be grown successfully all over Britain.

We'll start this list with a few native plants. Our

common Stinging Nettle (*Urtica dioica*) probably deserves an article to itself since it has so many uses. Apart from its wildlife value, it can supply us with food, medicine, liquid fertilizer and compost material. It also produces a good quality fibre suitable for cloth, indeed it has in the past been cultivated for this purpose. It prefers a rich soil and is more than capable of fending for itself so doesn't really need to be cultivated. Almost any species of nettle can be utilised for fibre.



The Hop (*Humulus lupulus*) is often cultivated as a herb or a flavouring for beer. Found wild in hedgerows, it responds very well to generous treatment in the garden, looking especially ornamental in early autumn. Tender young shoots in spring are very nice cooked. The stem fibres are used to produce a coarse cloth.

Those people with more space could grow our native Lime Trees (*Tilia cordata*, *T. x. europaea* and *T. platyphyllus*). The fibre is found in the inner bark and is best from trunks 6-12 inches in diameter so a 10 year coppice rotation is probably the best way of growing these trees. The fibre can be used for cloth or ropes. These trees produce the nicest edible leaf that we've as yet found on a tree. Only eat young leaves, which can be produced from April to October on coppiced plants, they are mucilaginous without any strong flavour. A refreshing herbal tea is made from the dried flowers, the fresh flowers are a magnet to bees and a mixture of fresh flowers and immature fruits is said to make a delicious chocolate substitute.



Moving into S Europe, Spanish Broom (*Spartium junceum*) is a medium sized shrub growing in dry situations amongst rocks and shrubs. Easily grown in a sunny position and well-drained soil, this plant has become naturalized in S Britain. The stem fibres are a hemp substitute being used mainly for coarse fabrics, cordage and paper. The stems are very pliable and can be used in basketry.

Going much further east we find in China one of the very finest and strongest fibres, Ramie (*Boehmeria nivea*). This member of the nettle family is probably only suitable for the warmer southern part of Britain, it is a herbaceous perennial and requires a rich well-drained soil. It prefers conditions of high humidity and fairly high rainfall so might need irrigation in dry years. The fibres from this plant are the longest known in the plant world. Their tensile strength is seven to eight times that of silk or cotton and this is actually improved by wetting. Cloth made from this fibre is said to be moth-proof, it is also used for making very strong ropes and nets.



The Paper Mulberry (*Broussonetia papyrifera*) is a small deciduous tree whose range extends from China to the tropical South Sea Islands and yet it is hardy in Britain if given a warm position and a fairly rich soil. When grown for its fibre it is usually coppiced on an annual basis (though perhaps less often if grown in our cooler climes). To make cloth from this plant the bark is usually cut into strips about 4 x 12 inches and laid out flat on a smooth wooden surface. It is then beaten with wooden mallets, the more it is beaten the thinner and finer it becomes. Size can be increased by overlapping other strips of bark and beating them together. Depending upon the degree of beating the resulting cloth can range from a thick material suitable for sacking to the very finest gossamer thin clothing. This plant also produces a delicious fruit but only a very small proportion of the structure is actually edible which makes it too fiddly to be very worthwhile.



Moving on to New Zealand in this journey around the globe, New Zealand Flax (*Phormium tenax*) is found growing wild in lowland swamps and on low ground. A member of the Lily family, so completely unrelated to our native flax plants, it is easily grown in most soils and is so tolerant of maritime exposure that it can be grown as a screen and windbreak near the coast. The fibre is found in the long leaves and it can be used to make fine cloth and ropes. There is some difficulty, however, in preparing these fibres due to the presence of a gum in the leaves. The residual leaf pulp can be



fermented to make alcohol for fuel, a fast brown dye is produced from the flowers, a strip of leaf can be used as an emergency garden tie and the whole leaf is used in basketry.

Finally to N. America where there are a number of fibre plants. Indian Hemp (*Apocynum cannabinum*) - not related to Marijuana - is a herbaceous perennial growing in moist or shady places and is easily cultivated in most soils in sun or shade. The fibre, obtained from the stems in early to late autumn, is very strong, does not shrink and retains its strength in water. It is used mainly for sails, twine and garden nets. Two other members of this genus *A. androsaemifolium* and *A. venetum* produce a similar though slightly inferior fibre.



Along the Pacific west coast of America grow a number of Iris species (*I. douglasiana*, *I. macrosiphon* and *I. purdyi*) whose leaf fibres produce a beautifully strong and pliable rope. Traditionally the N. American Indians would take just one fibre from each outside edge of the leaves, though I know of no reason why all the fibres could not be used. The Indians would have needed thousands of plants by their method in order to produce any quantity of rope. Usually found wild on grassy slopes, these beautiful plants are easily grown, preferring rich well-drained lime-free soils in sun or semi-shade.



The Milkweeds (*Asclepia* species) are also very good fibre plants - see our leaflet [The Milkweeds](#).

Obtaining the fibres from the plant is usually a fairly straightforward though smelly and labour intensive process. We don't intend to go into any great details having no experience of the extraction process. The basic principle however is to encourage the softer parts of the plant to rot so that only the stronger fibres remain. This is usually done by either immersing the plants in water or tying them up in bundles outdoors for the dew and rain to work on them. Once the softer parts start to rot the fibres are separated and cleaned and are then ready for use. At least it sounds easy, though we would advise you to read up on the subject before trying it.

Database

The database has more details on these plants: [Apocynum androsaemifolium](#), [Apocynum cannabinum](#), [Apocynum venetum](#), [Boehmeria nivea](#), [Broussonetia papyrifera](#), [Humulus lupulus](#), [Iris douglasiana](#), [Iris macrosiphon](#), [Iris purdyi](#), [Phormium tenax](#), [Spartium junceum](#), [Tilia x vulgaris](#), [Urtica dioica](#).

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