

FLAX TO LINEN PROCESS

Below are the stages for Flax-to-Linen. Our program will cover these aspects in varying degrees of detail. For example, we may not have enough fiber to produce an entire spindle, but we will do our best!



Soil Preparation

This should be completed in the first few weeks as growing is better in colder weather. We'll turn over the soil on the northwest (NNW) side of the Tivoli garden space, remove any large rocks, and add organic fertilizer as needed (phosphorus, potassium, and very little nitrogen). We have a maximum of 173.8 square feet to work with which is more than enough.



Planting

This will done in April as flax is a cold weather crop. We should plant in rows because most of us aren't familiar with the appearance of the immature plants. Seeds should be planted 1/2 to 1 inch deep and spaced enough that plants don't crowd each other out, but close enough that the stalks support one another (4 to 6 inches). We have approximately 4,500 flax seeds. Not all of them will germinate, but even if only half do that will be considerable abundance.



Weeding & Watering

Weeding is important during the early growing stages. Watering is important throughout the season. Efforts should be made to apply water very close to the ground so as not to knock the plants over as they have short root systems. Near the end of the season blue flowers (other colors also possible) will form on top of the plants. We should make efforts to keep the vegetation trimmed around the perimeter of our flax bed to insure adequate sunlight. Also, let's all be vigilant about keeping the garden gate closed, so we don't loose our plants to animals, (wild or domestic).

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Harvesting

Flax is an annual plant. The stalks will mature in approximately 90 to 100 days. The proper way to harvest is to pull the stalks up by the roots. It is important to keep the root ends intact or the fibers could be ruined. The root ends must be kept facing the same direction up to and including the spinning process.



Stacking

Stalks will be loosely bound together in sheaves, with twine, and set up vertically (roots downward) to dry in the sun and air for a few days. We can't say exactly how many days; we'll have to play it by ear.



Rippling

Removing the seed pods. There are many ways to do this. One can wrap the stalks in an old blanket and walk on them. Another way is to beat the tops of the plants with a wooden stick. Efforts should be made to save the seeds.



Retting

Flax will be immersed in water for a period of anywhere from 2 to 10 days. This will cause a bacterial process (similar to fermentation) that loosens the outer bark & weakens the inner core, thus releasing the fibers. We may need to periodically change the water if there is a bad smell. Flax should be removed when the outer skin (bark) is loose, but the stalk still makes a snapping sound when broken.

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Drying

Flax stalks will be laid out flat on the ground to be dried by the sun. They may have to be turned occasionally to ensure even drying.



Crimping or Breaking

Flax stalks are inserted into a very simple device called a crimper to break up the bark and cork-like inner core. Dan made a crimper out of a couple of 2X4s in his basement during the summer of 2021.



Scutching

This requires a flat, wide, vertical board and a thin, narrow stick called a scutching knife. The fibers are held, by the root ends, against the board, and scraped by the scutching knife to remove the bark, cellulose, and the cork-like inner core of the stalk.



Hackling (or Heckling)

Fibers are grabbed by the root ends and pulled through a hackle/heckle comb. This comb can be created by driving long nails through a 2X4 which is secured to a base. This process separates the long line fibers from the shorter tow fibers. The tow can be saved to spin a very coarse yarn, used for mulch, or added to the compost bins.

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Forming Stricks & Rolags

Gather the fibers (root ends facing the same direction) by handfuls and gently twist them into stricks that look like braids of hair. This is the traditional way to store linen fiber prior to spinning. Forming stricks is possible under ideal circumstances, but since we have shorter fibers, we will be making rolags. A rolag (meaning “little roll”) is made by carding the fiber and then gently rolling the fiber off the cards.



Spinning

This part will be both fun and a little frustrating because most of us will be learning a new skill, but this whole project is about learning after all.



Part One, Dressing The Distaff

A distaff is a long rod or stick. For our purposes a yard stick will suffice. Sit or stand in front of a table. Place a strick on the table with the root end closest. Take a long ribbon or string and tie the root ends using the mid area of the ribbon. Take the ends of the ribbon and tie them behind your waist. With flat hands, palms down spread the fibers sideways until you have a thin layer or fiber on the table. Place a stick (distaff) on top of the fibers, perpendicular to your body. Roll or fold the fiber over the distaff to form an inverted cone. Use the ribbon to wrap the fibers and loosely tie it. Some spinners place the far end of the stick in a back pocket then sit in an upright chair to hold it steady.

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Part Two, Spinning On A Hand Spindle

With this, we would learn to draw fiber out from the distaff, wet it with a little with water to activate the natural pectin glues, and spin it onto a hand spindle held close to the body by the opposite hand. Traditionally, yarn is formed into skeins by winding it on a device called a niddy-noddy. We may not get enough yarn to do this, and it can just simply be wound around a stick or dowel.



Scouring

Skeins of yarn are soaked with water which is then squeezed out. The damp skeins are less likely to float during the next step. The skeins are then immersed in boiling water (with a drop of Ivory liquid) for about 20 minutes. This will destroy any germs or molds that might damage the yarn, and remove any residual dirt. The skeins are then removed from the water, allowed to cool, squeezed out, and thoroughly dried. A common household radiator will serve as an excellent drying system.



Bleaching (optional)

Traditionally, either the yarn, or finished cloth, is laid out on the ground so the sun removes any natural pigments to leave a white cloth. In modern industry this is done by chemical treatment. This is only necessary when producing high quality textiles for sale.



Dyeing (optional)

This can also be done either with yarn or finished cloth. Perhaps we'll be able to find some natural dye sources at Tivoli or even in our own backyards or kitchens.

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Weaving

We are developing our skills at weaving and will happily share what we've learned over the project. We will have weaving workshops utilizing wool first to learn the skill. We can't predict how much linen yarn we'll get, but anyone who is interested, is free to incorporate what we do get into a weaving project.



Next Year & Beyond

Nature provides us with a multitude of plant and animal fibers for spinning and weaving. One for consideration is the stinging nettle. Nettle use would be a great way to combine the arts of foraging and textile manufacture. What suggestions do you have?

