

Thr Flax Journey – from Seed to Linen

(Nuo Sėklos iki Drobės)

By Danute Mileika, 2021



Growing up in the beautiful countryside of Lithuania, I remember my mother spinning wool during winter days. Flax was no longer grown in the area, but she always loved to tell stories about flax. How she grew and helped process it during her childhood. I can picture the fields of sky-blue flowers swaying in the wind on the rolling hills of the Žemaitija region of Lithuania. There were still many old tools in the attic no longer being used, many of which I would bring down and ask questions about, sparking my mother's memories of her younger years.

Several years ago, while teaching Lithuanian culture at the Lithuanian School in the Boston area, I realized it would be much easier to explain about this special plant "linas" (flax) if I had a real plant. I decided to plant some flax seeds in my garden and hoped I would have a perfect sample for the next school year.

Watching it grow inspired me to research all the processing steps and to try it out, from planting the seeds all the way to making cloth. Luckily, I had my mother's spinning wheel that she had sent a few years before from Lithuania. I realized it was a great time

to not only brush up on my spinning skills but also to venture deeper into spinning and weaving techniques.

About the Flax (Linus) Plant

Hardly any other plant in Lithuanian culture has earned such respect and honor as flax. Lithuanian flax has been grown for about 4000 years. In Latin the name for common flax is "linum usitatissimum" which means "the most useful kind of flax". There is a saying in Lithuanian, "linas mus rengia, maitina ir gydo" or "flax dresses us, feeds and heals us".

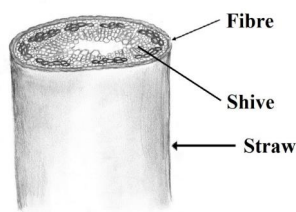


Flax is one of the oldest crops that has been cultivated since the beginning of civilization. The earliest known flax fibers are about 30,000 years old found in the Caucasus Mountains in the Republic of Georgia. The earliest knowledge about flax processing comes from drawings of detailed descriptions of the flax to linen process in Egyptian tombs. Egyptian linen has been dated at about 4400 BCE.

<https://en.wikipedia.org/wiki/Flax>

The flax stem provides a strong and durable fiber, which was used for thousands of years for clothing, bedding, table linens, etc. Linen has always been important part of Lithuanian traditions. Until the 19th century, linen (drobė) was the primary fabric for undergarments, work clothes, and garments worn by peasants as well as battle clothes worn under armor.

Flax fibers have also been used in plumbing for pipe fittings for its absorption and insulation properties.



Flax is a bast plant, meaning it has fibers as part of the stalk (inner bark).

Shives or Boon makes up 65 – 75% of the stem mass.

Shives or Boon is utilized for manufacturing light weight walling material. In the past boon was used for attic insulation or animal bedding that would eventually be spread back on to the fields as nitrogen-rich manure.

Flax seeds are used to make oil and the solids left after pressing the oil are used for high nutrition animal feeds. Flax seeds have recently become part of a healthy and nutritious

diet, rich in omega-3 fatty acids with potential health benefits. Throughout the centuries, flax seeds have been used to ease digestion problems and relieve joint pain.

Flax seeds also have many industrial uses. Linseed oil is used for wood finishing and varnishes and solidified linseed oil is used to make floor coverings such as linoleum and marmoleum.



Flax in Lithuanian Folklore

Flax is deeply rooted in Lithuanian folklore. It was a woman's harvest. So much of a girl's future and preparation for marriage depended on a good flax harvest. It was important to do everything to ensure a good flax harvest. Before Christianity, it was believed that the pagan god Vaižgantas protected the flax harvest. Vaižgantas feast day was celebrated on November 5th, the third day after All Souls' Day.

Here is how Polish historian Jonas Lasickis in 1582 wrote about the Žemaičių gods in the late 1500s (https://en.wikipedia.org/wiki/Jan_%C5%81asicki). He describes the ritual or prayer to the god Vaižgantas for a good harvest. The village girls would assemble. The tallest girl would stand on a bench on one foot, with a jug of beer in one hand and a piece of linden bark in the other and say: "God Vaižgantas, please have my flax grow as tall as I am, do not let us walk naked". Then she would drink the beer and spill the rest out as an offering to the god and scatter flatbread called "sykie" to other gods that might be there. If the girl stood through all of this ritual without falling or wobbling the flax harvest would be good the next year.

There were other ways to "promote" a good flax harvest including taking long sleigh rides (pasivažinėjimai) during Užgavėnės (Mardi Gras) to help the flax grow tall. Also it was important to plant flax on the right day such as a full moon or a day with long clouds in the sky and no wind. In Christian times flax was often planted on the feast day of a female saint like St. Elena, St Petronėlė, etc. In Dzūkija there was a tradition that a spinner slides down the hill on a distaff to ensure a good flax harvest.

There are many songs, games, riddles and tales about flax that describe in detail the process and the hardship. Some are intertwined with hints of youth and love (Aš

pasėjau Linelius, Linelį roviau). Flax is often referred to in a very gentle way, using the diminutive “linelis”.

In ancient Lithuania our ancestors believed that flax was a sacred plant, that it had powers to protect from evil spirits. A folk tale describes how the devil can't withstand the long story of flax processing (Lino kančia arba mūka), which explains the long and labor-intensive process from planting flax seeds to producing linen cloth. Here is one of the tales.

Three girls are going to a village dance (vakaruška) and along the way they see three young men who hear the girls talking among themselves, that if the young men would ask them to marry, they would say “yes”. At the “vakaruška” they dance all evening and the girls notice that the men's feet are strange and their noses have only one nostril. They realize that they are dancing with devils! The girls start running home and the devils follow them. The girls run into an old lady's house. The old lady ties the doorway off with flax fiber and tells devils that she will not let them in until they hear the story of flax. And she starts telling how flax was planted, how it grew, started blooming, got pulled out, dried, rippled, retted, dried again, broken, scutched, was combed, spun, woven, sewn into a shirt.... and more. The rooster starts crowing, the sun rises, the devils lose all their powers and disappear. And the girls are saved!

Let's take a closer look at the flax journey, and how much this ancient fiber plant has to endure to become linen and why in Lithuanian the process is called “Lino mūka” (The Suffering of Flax).

Planting Flax (Linų sėja)



Flax is an annual plant grown in the same way as a grain crop in plots of many plants crowded together. Flax seeds (sėmenys) are planted in May, or the beginning of June in well prepared and fertile soil. about 15g in a square meter to produce tall and slender flax. Flax likes full sun. It is also good to cover it with a netting to prevent birds from eating the seeds. Flax roots are only 4"-5" long, so the field doesn't need to be tilled too deep. In less than two months as the flax reaches full height, the most beautiful and magic moment comes when the flax forms buds and come into bloom. It is like a reflection of the blue sky.



The flax bloom is very short, only one morning – and the next morning another bloom appears. After the 5-petal flower is pollinated it will start to grow seed pods. When the seedlings are young, it is good to keep them weed free and only water when needed.

In about 90-100 days when the lower part of the stem turns yellow, the flax is ready to be harvested.

In the 20th century, different flax varieties for oil and fiber were developed.

Fiber flax grows about three feet tall. It is harvested when the base of the stem begins to turn yellow, and before the seeds are viable.

Flax for oil must come from plants that are fully mature. The coarse stalks have turned yellow and the seed pods rattle. Often the straw from oil flax is used for fine paper products like currency, bank notes, and cigarette paper, or is left in the fields.



Harvesting (Pulling) Flax – (Linarovis)

To maximize the fiber, flax is always pulled (raunami) in handfuls from the soil, then tied into bundles and left to dry. Flax pulling would be done all at once.

Usually, it was the work of young women. They would work in sections (barais). One,

often a bride-to-be, would be a section leader. Her job would be to measure and lead the others in even, straight rows to ensure that she gets a good-looking husband. If the rows do not come out straight, all would laugh, saying, that her husband may not be the best looking (kreivas).





The leader would divide her first handful of flax among the others to tie around their waists so that their backs would not ache at the end of the day from all the bending.

Even though pulling flax was monotonous and hard work, it was a special ritual, a celebration, often poeticized and romanticized in songs like “Lineli roviau”, “Siuntė mane močiutė”. If women had to bring their young children to the field, a grandmother would sing the flax story in great detail to calm a child, such as the song “Vai, Tu Lineli” with its soothing monotonous melody. After the work was done, a celebration with food and games would follow. The girls would make a flower wreath to place on the leader’s head to honor her.

Rippling, Threshing (Linų kūlimas)

There were several ways to remove flax seed pods:



Rippling removes seed pods from dried flax by pulling stalks of flax through a rippling comb.

Threshing (kulti) crushed the seed pods to remove the seeds. Often the seed pods were lightly pounded with a tool called a kultuvė (washing paddle) which was used for washing linen clothes.

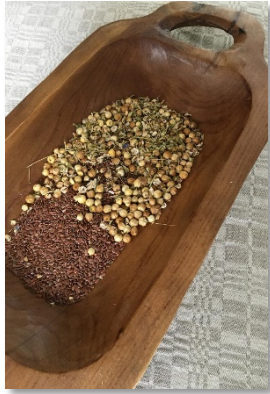


Linų kūlimo talka (A Threshing Bee)
Antanas Žmuidzinavičius, 1926
Nacionalinis M. K. Čiurlionio dailės
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For a small amount of flax, a rolling pin or a piece of wood also worked well.

Once removed, the seeds were cleaned by winnowing - sifting or blowing off the chaff.



In some regions in Lithuania, unripe fiber flax seed pods were rippled in the field, right after pulling.

Retting (Linų mirkymas /Pūdymas)

This is the most important, difficult and mysterious part of the entire flax process. Retting means to rot and weaken the natural pectin so that the flax fiber can be separated from the stalk.

There are two traditional methods of retting:



Dew retting is when the stalks are spread in thin layers on the ground in long rows and left for a few weeks. The dew, the sun and rain will weaken the pectin. To obtain even retting, the stalks need to be turned every few days. The exact retting time will depend on weather conditions. There have to be frequent checks to see how the retting process has progressed.

When a dry stem snaps and the long fiber easily separates from the core in a long strip, the retting is done. Dew retted flax has a gray color.



Water retting is when stalks are submerged in a stream or pond (Linmarka) for a few days. Retting time depends on water temperature. Water retted flax becomes a pale golden color.

Breaking Flax (Linų mynimas)

Flax breaking was done in the fall.



The month of October in Lithuanian is called “spalis”, which means a boon or shive (spaliai) – a hardened part of a flax plant that falls out during breaking.

A flax break (mintuvai) is a tool with a set of intersecting wood blades, often three blades pointing up and two pointing down forcing the flax to break into a W shape.

Flax breaking was usually done after dinner and through the night in the flax barn (jauja or lininė). For breaking flax had to be very dry. Some barns had a stove and special racks to finish drying the flax.





Here is a demonstration by the author of the breaking process on a flax break her husband built based on old designs.

A handful of dry flax stems are placed on a flax break (mintuvai). By moving the upper blades up and down, the brittle stalks are shattered into short bits of shives or boon (spaliai) without damaging the fiber. When the flax is limp, the breaking is done.

Also mechanized production involved flax breaks that cracked dried flax stems between fluted rollers.

Often neighbors would help each other with the process (talka). There would be a few rest periods during the night with jokes and games and the housewife (šeimininkė) would bring food for all the workers.



In Žemaitija, it was a tradition to tease neighbors who hadn't finished their flax breaking by throwing a funny scarecrow dressed in rags called "Kuršis" into the barn. If the person who brought it was caught, he was put to work with no pay or food...

Scutching (Braukimas)



Scutching is scraping out leftover chaff or boon after the breaking by using a wooden scutching knife (brauktuvē)

Between the breaking and scutching, up to 90% of the flax plant is left on the ground, both as boon and short rotted fibers.

Combing (Šukavimas)

Scutching was followed by combing or heckling using a flax comb or heckles, a wooden board with five or more rows of forged nails or wooden spikes spaced evenly apart. In Lithuania mostly wooden spikes were used.





Often two sets of combs were used, first a coarser one with fewer spikes and then a finer one with thinner spikes placed closer together.

A handful of fiber firmly held at one end starting with the tip of the bundle is pulled bit by bit through the rows of teeth, or spikes, splitting and separating the long fiber line from the short fiber called tow (pakulos).

The combing process cleans out all the shive and other debris, leaving the long fibers shiny, lying parallel to each other and ready for spinning.

Tow was also combed and spun into yarn for everyday linens, made into ropes, used for mattress stuffing and other household uses.



A well-heckled, ready for spinning strick of long line flax looks like beautiful hair.

In 1910 French composer C. Debussy wrote a piano composition called "The Girl with the Flaxen Hair".

Spinning (Verpimas)

This ancient craft is surrounded by mythical stories from the ancient goddess Laima spinning the thread of life from a person's birth. It was believed that she takes care of a person's destiny. The Brother Grimm tale of "The Three Spinners" is about a lazy daughter who did not want to do the monotonous spinning that required so much patience. She was helped out with spinning the Queen's flax by three ugly "aunts". One had a swollen foot, the second, an overgrown thumb and the third, a pendulous lip. The lazy girl got to marry the prince, but she had to invite the aunts to her wedding. When the King found out all these deformities were from years of spinning flax, he forbade his beautiful daughter-in-law to spin.

Spinning is an ancient textile art in which fibers are drawn out and twisted together to form yarn to be woven into cloth. In the flax journey spinning is a special time. It becomes LINEN. This is the stage where flax fiber spun into yarn is called linen, which is then used to make linen cloth. There were many musical compositions and songs inspired by this time-consuming and enchanting craft. From Lithuanian folk songs like "Verpsiu, verpsiu" to original songs like S. Moniuszko's "Przasniczka", Goethe's "Gretchen am Spinrade", music by Schubert, and Margaret at the spinning wheel singing a ballad about the King of Thule from the Opera "Faust" by Gounod.

For thousands of years, fibers were spun by hand using simple wooden tools such as a drop spindle (verpstukas) and a distaff (verpstė). Drop spindles were made from solid wood or a wooden shaft with a round whorl made of wood, metal, bone, or even amber.

There were beautiful and varied forms of traditional European distaffs – paddle, bird cage, pole, basket or comb designs. Dressing the distaff is a very important step to avoid tangles during spinning. There were many ways to dress (attach the fiber) to the distaff depending on its style and the length of the fiber.

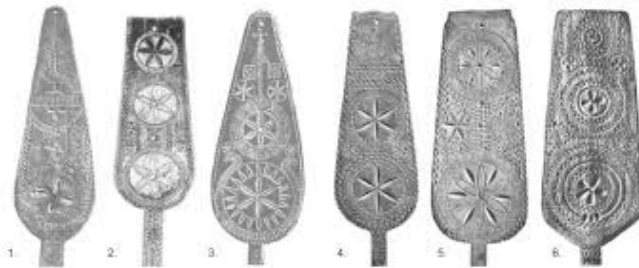
In Lithuania a larger free standing or sit-on paddle distaff is called "verpstė", and was mostly used with the drop spindle. A smaller 30-36 cm one mounted on the spinning wheel distaff is called "prieверpstė".



Mainly paddle sit-on distaffs were used in Lithuania for spinning long line flax.

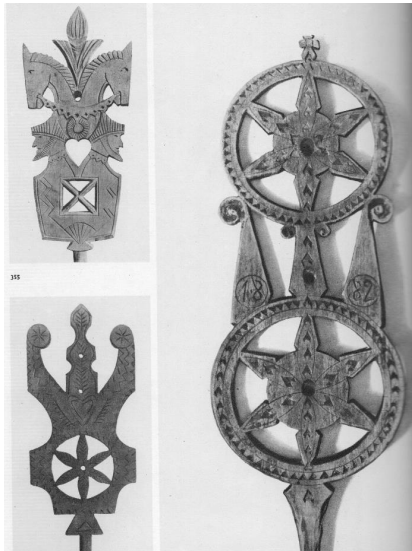
In the photo a spinner (verpėja) is spinning flax line with a drop spindle (verpstukas) from a distaff (verpstė) in Tauragnai, Utenos region, Lithuania.

Sit-on distaffs were constructed in three parts: the paddle (galva) about 40-50 cm long, to which the fiber is attached, the pole to hold it and a board that the spinner would sit on. The fiber was attached to the distaff with twine and pinned with a wooden pick.



The outer side of the paddle was beautifully carved with symbols of the sun, stars, birds and plants. According to ethnologists, the decorations are thought to have not only aesthetic beauty but also mythical meaning.

Women of all classes would spend their winter evenings spinning. The distaff used in spinning was the medieval symbol of women's work. Today it adds charm to the Lithuanian home as a wall decoration.



Often a beautifully carved distaff was a courting gift, a sign of love. Spinning on the gifted distaff meant “yes” to marriage.

Samples of “prieverspstės”.



A sit-on paddle style distaff “verpstė”, 19th century

From Anykščiai region, Lithuania

The single-flyer German spinning wheel without a foot treadle dates back to the 15th century. In 1533, a citizen of Braunschweig in Lower Saxony, Germany, is said to have added a foot treadle, which allows the spinner to have both hands free to spin. During the 16th century a treadle wheel with flyer was in common use, and gained such names as the Saxony wheel and the flax wheel. The spinning wheel doubled the productivity of spinning, as the spinner did not need to stop spinning to wind up the yarn and it eventually replaced the drop spindle.

It is believed the spinning wheel reached Lithuania through Prussia in the 17th-18th century. In about 1765 the poet K. Donelaitis mentions a spinning wheel (vindas) with the foot treadle in his poem “Metai” (The Seasons) where girls gathered together to spin, and had so much fun telling stories that they forget to do the job:

Nes, kad verpt reik, jos taip daugel pasakų vėp, (When it is time to spin, they tell so many stories)

Kad jau ir ranka kuodelį pešt užsimiršta, (That their hand forgets to draft the flax tow)

Ir besijuokiant koja vindą sukt pasiliauja. (And from laughing the foot forgets to treadle the wheel).

At first only manors and estates could afford to have a spinning wheel. As time passed it became affordable to most spinners. Horizontal and upright (parlor or castle) style wheels were used in Lithuania. The spinning wheel was used not only to spin, but also to ply together multiple strands of yarn into one.

Spinning wheels were made mostly of linden, ash, alder or oak wood by craftsmen called “ratelninkai”.

The spinner is spinning on an upright Russian wheel using a sit-on paddle distaff in Sudainių village in the Šalčininkai region of Lithuania (photo by J. Dovydaitis)

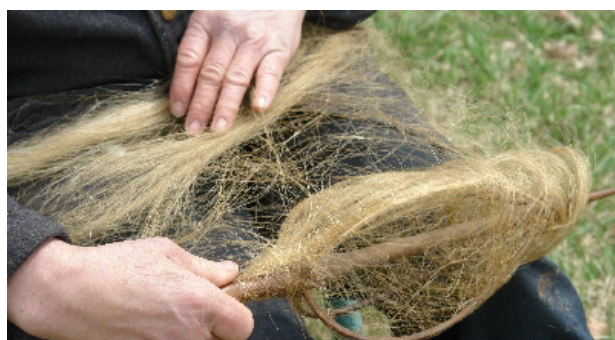




Here are some 19th century spinning wheels from the author's personal collection. The light colored one in front is her mother's spinning wheel from Žemaitija, Lithuania, where it is called "kalvaratas". It has a simple wheel-mounted distaff (prieverspstė), used to attach flax or wool for spinning.

Next is a dainty upright parlor wheel from Rokiškis, Lithuania. In the back is a bigger Scottish McIntosh spinning wheel with line flax attached to a simple distaff (bird cage style) made from a tree branch.

Here is a 19th century spinning wheel restored to working condition with the bird cage distaff for spinning flax from Panemunė, Rokiškis region, Lithuania.



Dressing a bird cage distaff is wrapping the spread flax fiber by turning the distaff.

Long line flax fiber can be spun into very fine and strong thread used to weave fine linen. Line flax only needs to be twisted enough to provide strength. Flax thread spun with moist or dampened fingers will be smooth, glossy and strong. Dry-spun yarn will be rough, uneven and hairy. In past times a spinner would simply spit on her fingers to keep the thread moist.

Short flax fiber or tow (pakulos) can be combed or carded separately and spun using a tow distaff or spun from the spinner's lap in the same manner as wool, to be used as weft thread.

After spinning, the linen yarn is wiry and stiff. After winding into secured skeins, the yarn needs to be boiled and washed in a soapy solution before using. It will continue to soften and become whiter with every wash.

Weaving (Audimas)

Cloth or fabric made of linen yarn is called "drobė" (audeklas). Linen fabric in various forms has always been an important part of Lithuanian celebrations such as weddings, baptisms, special family events and holidays.

A young bride would have been in "big trouble" if she did not have sashes (juostos) as gifts for the wedding party or a linen towel (rankšluostis) for the matchmaker, to save him from a mock trial for all his exaggerated stories.

Linen towels (Rankšluosčiai) from the author's collection



Sashes (juostos) woven by the author.



As winter days got longer and the spinning was done, girls and women began weaving. It started with warping the loom, a very time-consuming process requiring concentration. Actual weaving is the enjoyable part.

Girls would learn the art of weaving very early. At about ten years of age, they would start with simple weavings like sashes, plain weavings (dvinytis) and move on to more complicated multi-shaft weavings. Linen was especially important in a girl's preparation for marriage. She would spin and weave all the cloth necessary for her future use. In her dowry chest (kraičio skrynia) she would store sashes and bolts of cloth for towels, tablecloths, bedspreads and bed sheets in preparation for married life. Girls knew, that until they filled at least a few dowry chests, no matchmakers would visit.

Hard-working, talented girls and housewives, who get all their spinning and weaving done on time, were honored and respected. In his poem "Metai" written in 1765 (The Seasons) K. Donelaitis writes:

Jums garbė, kad vindas jūsų, sukriai besisukdams, (Honor to you, for your spinning wheel is turning fast)
Pakulų bei linų kuodelį nupeša greitai. (The flax tow pulling fast)
Jums garbė, kad staklės prieš pavasarį trinka (Honor to you, for your loom clatters before spring)
Ir šaudyklė su šeiva šokinėdama tarškia. (And the shuttles and bobbins bouncing rattle)
Jums garbė, kad audeklėliai jūsų nuausti (Honor to you for your woven linen)
Ant margų lankų kaip sniegs pavasario blizga. (Sparkle like snow in spring on the colorful plain)

Like any other work-related task in Lithuanian culture, weaving is also accompanied by many beautiful songs, like "Ausk, močiute, drobeles", "Staklės naujos", where they describe the work process and the girl's preparation for marriage.

All village girls knew how to weave, but not all were master weavers. Often there was a gifted weaver in the area who could weave more complicated patterns and help set up

the loom. In the 18th century, at the estates where flax was grown, there were weaving workshops with male weavers called “atkočiai”. They specialized in weaving fine multi-shaft cloth called “atkočinė” for table linens, “nuometai” (a traditional head piece from the Aukštaitija region), and bed sheets. Besides linen yarn, wool and cotton were often used in weaving.

In the 19th century full-frame looms became available throughout Lithuania and a weaving school was established in Vilnius.

At the beginning of 20th century Jacquard looms with punched cards (often considered a predecessor of the modern computer) was being used, enabling the weaving of very complicated patterns as each thread could be controlled separately.

Newly woven pure linen cloth is stiff and needs to be finished. It would be washed and spread out in the sun to bleach or boiled with washing soda or homemade lye to bleach. To make sure that all the lye was rinsed out, the cloth would be repeatedly rinsed and beaten with a washing paddle (kultuvė). Linen fabric becomes softer with wearing and washing over time.

A “kočėlas” (mangle) was used to smooth flat linens like bed sheets. (From the author’s collection.)



An embroidered linen pillowcase from the author’s personal collection.

Today any bedding or tablecloth is often called “linen”, even if it is made of cotton or synthetic fiber. A true linen cloth is woven from linen yarn, and its qualities have been praised and valued for centuries. It is absorbent, dries quickly, is very comfortable, wicks away both moisture and heat and makes delightful summer clothes and bedding. It is warm in cold weather.

In recent years natural pure linen has become more popular again for home use such as bedding, towels, and garments and is valued for its quality and durability.

Even after linen is sewn into clothes and worn for many years, the flax journey doesn’t stop there, it continues.



Just like H.C. Anderson in his fairy tale “The Flax” writes:

“Years passed away; and at last the linen was so worn it could scarcely hold together. “It must be ending very soon,” said the pieces (of linen) to each other; “we would gladly have held together a little longer, but it is useless to expect impossibilities”. And at length they fell into rags and tatters, and thought it was all over with them. For they were torn to shreds, and steeped in water, and made into a pulp, and dried, and they knew not what besides, till all at once they found themselves become beautiful white paper.”

“Each time I (Flax) think the song is ended; and then something higher and better begins for me.”

We can see from all the steps in growing, harvesting and processing flax into linen that it is a labor-intensive effort. It was fundamental to Lithuanian existence and the well-being of its people. While it involved mainly women, it affected everyone daily – from the fields that were planted to the barns used for harvesting and the spinning wheels that were part of the daily routine, especially in winter. The very appearance of the Lithuanian people was determined by the usefulness of the plant. Not only were they clothed by it, but they benefited from the seeds and oil. It was indeed **linum usitatissimum**.



This quilt “Linų rovėja” (A Girl Pulling Flax) was made by artist Ina Nenortas from Boston

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