Thai Sericulture: Making Thai Silk

Description

This post was updated on Jan. 8, 2019.
Raw Thai silk hangs on a rack near Khon Gan. Most raw silk in Thailand is produced by small farmers in Isaan (Northeast Thailand).

The process of making Thai silk is called Thai sericulture. In Thailand, the rural silk weaving villages produce their own raw silk and make their own silk threads and yarns. That’s right—not only do they hand-weave silk fabrics, but they also raise silkworms and produce raw Thai silk.

Read on for a full explanation about the art of Thai sericulture and silk yarn making.

Some Background Info

When I go on a “silk safari” to Khon Gan, Surin, Khorat, or any of the dozens of isolated silk weaving
villages spread across Isaan (Northeastern Thailand), I often say that the purpose of my trip is to buy silk. But that's not really true in the strictest sense.

A better explanation for my silk safaris is that my purpose is to buy Thai silk fabric, not raw Thai silk. The following simple equation speaks to an inherent truth about silk fabric:

**Quality silk yarn + Expert Weaver = Quality Silk Fabric.**

You can't really appreciate or understand the quality of a bolt of Thai silk fabric without knowing something about the raw silk it was woven from. After all, raw silk is no more equal in quality than diamonds, lumber, granite, cars and almost everything else in life. So regardless of a weaver’s skills, if she doesn't use quality and appropriate silk yarns, she will never weave quality silk fabric.
A thai hybrid white silk cocoon being harvested in the village of Ban Phon. White cocoons produce the finest silk filaments.

One Sarong = 2500 Silk Cocoons

The breeding and rearing of silkworms to produce silk cocoons is called sericulture. It's useful to understand sericulture by the following facts: It takes about 600 silkworm cocoons to yield enough yarn to weave a scarf. It takes roughly 2500 silkworm cocoons to weave a sarong. It takes about 4,000 cocoons to produce enough silk fabric to make a woman's two-piece business suit.

Although sericulture primarily concerns itself with the rearing of silkworms, I will go beyond sericulture and also detail how silk yarn is made from these cocoons and the different grades of silk yarn and their
specific use in creating silk fabric.

A year ago, I wrote a blog post entitled “Buying Thai Silk in Thailand” which delved into the world of silk weaving and how to judge a bolt of silk fabric for quality and above all else, authenticity. This blog post about Thai sericulture, is a companion piece. You simply can’t fully understand Thai silk fabric without a basic understanding of raw silk and silk yarn.

The video below, produced by the Queen Sirikit Museum of Textiles, is a wonderful overview of the entire traditional Thai sericulture process, including the making of silk yarn and mudmee weaving.

A Brief History of Thai Sericulture

Silk was first found in The Kingdom 3,000 years ago.

Everyone knows that silk was discovered by the Chinese around 2600 B.C. Empress Shiling Ti was relaxing under a mulberry tree, enjoying a cup of tea, when a silk cocoon dropped from the tree into her tea. She watched the silk cocoon begin to unravel in her warm tea and so silk was discovered. Or so the story goes….

By 2000 B.C. Chinese sericulture was well developed and silk quickly became a much sought-after commodity. Chinese traders established and expanded a whole network of silk routes to Eastern Europe and Indochina to satisfy demand. One particular route went through modern day Thailand to a port on the Andaman Sea for export by boat to India. Most historians generally agree that silk and/or sericulture came to present-day Thailand by these ancient Chinese trading routes.

The Mystery of Thai Silk Origins
A basket full of Thai hybrid white silk cocoons.

Just east of Udon Thani in Northern Thailand, lie the excavated ruins of Baan Chiang which date back to approximately 1,500 B.C. Anthropologists discovered silk threads at this site and dated them as being 2,000-3,000 years old.

How silk thread came to Baan Chiang is a mystery. (Remember that 3,000 years ago, China had been involved in sericulture for roughly 1,500 years already!) Did Chinese traders bring it? Did sericulture already exist in what is now Northern Thailand and the inhabitants produced their own silk thread? No one can answer those questions.

For the next 2,850 years the story of Thai silk is cast in a dim twilight with only a few historical facts to guide us. Yes, silk was woven in Siam (the name for the country until 1939) during this long period, but the fabric was of poor quality. For many centuries, China and India imported their superior quality silk to Thailand.
In the 1860s, Thai silk reappears in the historical record. Siamese King Rama V began to encourage sericulture and even started a silk production facility close to Bangkok.

In 1932, the Thai government again tried to encourage silk production by starting a silk yarn factory. This attempt at jump starting the silk production failed due to inferior silk worms that produced very low grade silk filament. In 1941, the government again attempted a production facility, but it also failed for the same reasons.

By the 1950s, Thai sericulture and silk weaving were all but dead in Thailand. Only a small amount of families were engaged in producing their own silk and the knowledge of generations past was quickly being lost. But the 1950s proved to be a pivotal decade for Thai sericulture as the silk industry began a ferocious comeback thanks to two individuals—Jim Thompson and Queen Sirikit of Thailand.
Jim Thompson showing a bolt of brocaded Thai silk to Queen Sirikit. Bangkok circa. 1960. (Photo attribution unknown)

Jim Thompson

Jim Thompson, who would later be known as the “Thai Silk King” founded the Thai Silk Company in 1951. Although he and his weavers lived in Bangkok, he established a commercial sericulture business in Khorat (Nakhon Ratchasima) to supply his weavers with quality silk yarn.
The Thai Silk Co. made a commitment to quality with both a high quality sericulture facility and demanded high quality from his weavers.

The greatest contribution Jim Thompson made was that he created an international demand for Thai silk fabric. Thai silk was featured in major women's fashion magazines and Thompson was interviewed by newspapers around the world. The costumes of the smash-hit Broadway play, *The King and I* (banned in Thailand) featured Thai silk. Within a few short years Thai silk fabric was becoming known as one of the finest fabrics in the world—thanks to Jim Thompson.

When Thompson’s Thai Silk Co. began making profits, other Thais noticed and began to copycat his business with success. Thompson didn’t care that competitors were copying his silk fabrics and often said that the competition merely helped expand the market and he would simply sell more. He was right.

I wrote a detailed blog post about Jim Thompson that you can find here.

Queen Sirikit

A youthful Queen Sirikit. Her Kingdom never had a queen more beautiful. (Photos: The Queen Sirikit Museum of Thai Textiles)
At almost the same time that Jim Thompson was building his silk empire, Queen Sirikit also took great interest in Thai silk. The Queen would often visit the silk weaving villages of Isaan and encourage the villagers to produce both raw silk and Thai silk fabrics.

She gave royal acknowledgements to weavers who produced the finest fabrics. She also designed a series of traditional Thai silk dresses which set the standard for traditional Siamese haute couture.

While Jim Thompson was creating an international demand for Thai silk, Queen Sirikit was creating a domestic demand.

I have been to many rural silk weaving villages throughout Isaan and almost all accomplished weavers will have a photo of themselves with the Queen showing off a bolt of their finest Thai silk. Queen Sirikit rallied both silk weavers and sericulturists to improve quality and produce more. The Queen saw Thai silk not only as a cultural treasure, but also as a way to improve the village economies in the poorest part of her Kingdom.
Above all else, Queen Sirikit gave charisma to Thai silk. Whether she was appearing at formal Royal events or high society social occasions, fashion mavens marveled over her Thai silk outfits.

The result of Jim Thompson’s and Queen Sirikit’s work in the 1950s-1960s was to save the Thai silk industry. The resurgence of Thai silk today and its claim as the finest fabric in the world would have never happened without these two titans of Thai silk.
The Modern Thai Silk Economy

In 2016 Thailand produced 712 metric tons of raw silk, which is a slight increase from past years. That makes Thailand the 4th largest producer of raw silk in the world. (China of course is by far the world’s largest silk producer with a 2016 output of 160,000 metric tons!)

At a 2017 silk producers convention in Bangkok, the Thai Secretary of Agriculture stated that the Thai gross domestic product for the silk industry was $4 Billion baht ($125 million U.S.) annually.

1. Global Silk Production (in Metric Tonnes)

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Global Silk Production (Source: Sericology 2017). Thailand ranks 4th in the world, but China dominates production.

Although Thailand produced a record amount of raw silk in 2016, the country still has to import raw silk or finished silk yarn to meet its domestic demand. But Thailand is also an exporter of raw silk. Of the 712 metric tons of raw silk produced, Thailand will export approximately 100 metric tons. Which of course leads us to the obvious question as to why Thailand would both import and export raw silk? The
answer is simple: Raw silk is not created equal in quality.

Thai sericulture does not produce enough *quality* raw silk to make enough *quality* silk yarns to meet demand. The 100 metric tons of raw silk exports consists of low grade raw silk. Thailand imports approximately 150 metric tons of either high quality silk cocoons or high quality finished silk yarns.

Because of the shortage of quality raw silk, the Thai government began to stimulate sericulture through education, agricultural outreach programs at a local level, and scientific research into breeding better silkworms and better yielding mulberry trees. As a direct result of these programs, Thai sericulture has improved in quantity and quality over the last 15 years.

Thai Sericulturists: Who are they?
The bulk of Thai sericulture is done by village folk. Many silk weaving villages in Esaan (Northeast Thailand) make silk and silk yarns for their own use.

97% of raw Thai silk is produced in Isaan (Northeast Thailand), specifically the provinces of Sisaket, Khon Gan, Mahasarakham and Khorat. These are the poorest areas of Thailand.

Approximately 100,000 (20,000 families) people work in either sericulture, weaving or both. In the small silk weaving villages, the villagers often will produce their own silk, make their own yarn and weave it into fabrics.

Of the roughly 700 metric tons of raw silk produced in Thailand, approximately 500 metric tons is produced by small farmers whose main occupation is rice farming. Sericulture is a secondary income
source. These farmer/sericulturists provide the raw silk to local village weavers and their cooperatives to make silk yarn from.

Why is almost all raw silk produced in Isaan? Easy question. Because the mulberry tree thrives in the soil and climate of Isaan. And mulberry leaves are the only food that silkworms eat.

Generally, the amount of mulberry under cultivation, dictates how much silk a sericulturist can produce. A farmer with 6-7 rai (1 acre = 2.5 rai) of cultivated mulberry can earn roughly between 150,000-300,000 baht annually from sericulture.

Thai Commercial Production of Silk Yarn

A commercial silk reeling machine.

Almost all the silk produced in Thailand is made into silk yarn of various qualities within Thailand. Very few silk cocoons are exported from Thailand to other countries for the commercial production of yarn.

In 2013, Thailand produced 660 metric tons of raw silk. Of that 660 tons, approximately 500 tons was made into yarn by villagers who produce silk by hand (no machines). But 160 tons of raw silk was produced and sold to commercial yarn producers in Thailand.

Currently there are 3 commercial silk yarn producers in Thailand: The Thai Silk Co.; The Chul Thai Silk Co. and The Khon Gan Silk Reeling Co., Ltd. These companies contract with Thai sericulturists/farmers to rear high quality silk cocoons (bivoltine cocoons) and then purchase the entire cocoon yield for yarn production.

Bivoltine silk cocoons (white cocoon) produce the best quality and longest silk filaments of all the
various types. What’s crucial to bivoltine cocoons, is that their silk filament is strong enough to be unwound (the process is called “reeling”. ) with machinery without breaking. But the problem with bivoltine cocoons is that a higher expertise of sericulture is needed to successfully rear them. Therefore most Thai farmers only rear yellow cocoons because of its simplicity.

Machine reeled bivoltine silk is regarded as the finest quality. This is the type of silk Thailand must import because the current production of 160-200 tons annually doesn’t satisfy Thailand’s demand. Thailand uses over 320 metric tons of bivoltine silk and so has to import this grade of silk, while exporting some of its lower grades.

The Mulberry Silk Worm: *Bombyx Mori*
The silkworm bombyx mori produces over 90% of world silk. It’s also referred to as mulberry silk.

There are many types of silk produced around the world by different types of silk worms and other creatures. There’s Tasar silk, Eri silk, Muga Silk, Anaphe silk, Fagara silk, Coan silk and even spider and mussel silk! But the most plentiful and best quality silk is called Mulberry silk and it’s only produced by the silkworm bombyx mori.

It’s called mulberry silk because bombyx mori only dines on the leaves of the mulberry tree. Almost 100% of silk produced in Thailand is mulberry silk. Worldwide, mulberry silk accounts for 90% of total silk production.
Different types of silk. On the left is bombyx mulberry silk. Mulberry silk accounts for almost 100% of silk produced in Thailand and accounts for 90% of global production.

The bombyx mori silkworm comes in many varieties including a variety native to Thailand. There are three basic varieties of bombyx mori in Thailand and each produces a unique silk filament:
1. **Polyvoltine**: This variation of bombyx mori is native to Thailand and spins the Thai yellow cocoon which is easiest to propagate and rear. The cocoons are small and yield approximately 300 yards of silk filament. These cocoons can only be hand reeled as their filament is not strong enough for machine reeling. Polyvoltine cocoons yield a bumpy, uneven filament, that while considered a lower grade filament, is excellent for Thai style weaving of textured silk fabric such as dupioni.
2. **Poly-bivoltine**: These are Thai hybrid silkworms that have been bred by crossing a polyvoltine silkworm with a foreign bivoltine silk worm. It also spins a yellow cocoon. Polybivoltine filaments can be either hand or machine reeled and the yield is 600-800 yards of silk filament.

3. **Bivoltine**: These silkworms are the highest quality of bombyx mori and originated in China and Japan. This silk worm spins a white cocoon of very smooth and even filament. These cocoons are always sold to commercial silk yarn producers who use machines to produce silk yarn. Bivoltine silk yarn is used almost exclusively for the warp (vertical yarns) in weaving.

**Life of a Silkworm**

![Silkworms dining on mulberry leaves. Silk weaving villages grow their own mulberry.](image)

From the point of view of a sericulturist, the life cycle of a silkworm starts with a female silk moth laying its eggs. She usually lays 300-500 eggs at a time. It takes about 9-10 days for the eggs to hatch into silkworms.

The tiny silkworms are then transferred to wicker baskets with fresh mulberry leaves for feeding. A
Silkworm needs to be fed 4-6 times a day. They will remain in these wicker feeding trays for 20-30 days where its body weight will increase almost 10,000 times from when it was first hatched.

Mulberry is the exclusive food of bombyx mori. The quality of the silk cocoon is directly related to the quality of mulberry leaves that the silkworm eats.

The mature silk worm will now be placed in a “mountage” where it will spin its cocoon. A mountage can come in different designs. They are all small enclosures, like a little cubby-hole, big enough for the silkworm to spin its cocoon. Just add some mulberry twigs and the silk worm will feel at home and get to work. It takes about 3 days for the silkworm to complete its cocoon.

“Mountages” come in all shapes and sizes. Usually a circular wicker basket is used, but any type of cubby hole where the silkworm can spin its cocoon will suffice.
Another style of moutage, simple wire mesh will suffice. Shhhhh! Silkworms at work.

Within days after the cocoon is completed, it is harvested. At this point it is known as a “fresh” cocoon because the silkworm inside (it’s actually now in its pupae stage of metamorphosis.) is still alive. But not for long. The pupae inside the fresh cocoon must be killed before it metamorphasizes into a moth and leaves the cocoon thereby destroying the continuous silk filament. If the pupae is not killed within 5 days of completing the cocoon, it secretes an enzyme that bores a hole in the cocoon by which the pupae turned silk moth will exit. This hole in the cocoon severs the continuous filament of the silk thereby destroying its value.

The pupae inside the cocoon is killed by steaming or heating the cocoon. The pupae is then recovered as the cocoon’s silk filament is reeled.

Bon Appetit!
In Thai sericulture, the dead pupae are not discarded. Thais love to eat them as a snack. They’re also used for animal food, cosmetics, and fertilizer.

Mulberry
A small patch of mulberry in the village of Ban Phon (where Praewa silk is woven). In Thailand, growing mulberry is always part of sericulture. Without mulberry leaves for the bombyx silk worm to eat, there would be no bombyx sericulture. The bombyx mori silkworm only eats fresh mulberry leaves—nothing else.

Like everything else in sericulture, mulberry leaves are not equal. Some are better than others for feeding. In fact, the quality of the mulberry leaves fed to the silkworm is directly related to the quality of silk cocoons produced. Good mulberry = healthy cocoons.

The amount of raw silk a sericulturist can produce is directly dependent on how much mulberry is planted. Thailand currently has approximately 24,000 hectares of mulberry under cultivation. (1 hectare = 2.5 acres) It is grown almost exclusively in Isaan.

A mulberry tree will produce usable leaves in its second year and after 10 years the tree is uprooted and another planted in its place. While mulberry trees are native to Thailand, great strides have been made in the last decade in increasing leaf yields and tolerance to disease. These new strains of better mulberry trees to increase leaf production, is the backbone of increasing Thailand’s annual raw silk production.
production.

How Silk Yarn Is Made

After harvesting a cocoon, the first step in yarn making is to “reel” silk filament which is a single silk strand of the cocoon. In Thailand, yarn production is often done manually, especially at the village level.

There are two basic types of silk yarn: reeled silk yarn and spun silk yarn. Reeled silk yarn is superior in quality to spun silk yarn and costs more.

Reeled silk yarn is made from the continuous filaments of the silk cocoon. These filaments can range
in length from 300 yards to over 1500 yards. Reeled silk yarn is far stronger than spun silk and its luster (the reflective value) is far greater.

Spun silk is made from discarded silk filament fragments, and damaged cocoons where the filament is broken. The very short pieces of silk filament are spun together much like cotton to create a thread. The shorter the silk filament, the less luster and strength a silk yarn will have.

If you’re contemplating buying a bolt of quality Thai silk fabric, it should be woven from reeled silk yarn, not spun!

Reeling Silk Filament
Manually reeling Thai silk. Boil the cocoons and soften the serecin gum and silk strands can be reeled.

Once the cocoons are harvested and the pupae inside killed, its ready for the reeling process. Reeling can be done either by hand, using a hand cranked reeling machine, or using a power reeling machine, depending on the type of cocoon.

First, a batch of cocoons are put in a pot of hot water to loosen the gummy substance, called serecin, that holds the cocoon’s silk filament together. Silk filaments will soon begin to loosen and come free in the hot water.

The reeler uses a brush or comb to collect the loose filaments from between 6-20 cocoons and gathers them together to form a single silk thread. A single filament of silk is far too small and weak to use as thread. A reeler must combine 6-20 filaments together to create a usable silk thread which has a similar diameter as a human hair. Remember, a single silk yarn is made from at least two and often 4-6 silk threads.
Filament from 8-20 cocoons is reeled into a single thread of silk.

The reeler first guides the silk filaments through an eyehole of his reeling machine and if reeling manually, begins to gently crank her reeling wheel, collecting the multiple filaments. The sticky sericin that kept the filaments together as a cocoon have only been loosened and softened by the hot water, not cleaned away. So as the filaments are reeled from their cocoons, the sericin cools and rebinds the 6-20 filaments into a single thread.

If a filament breaks during reeling, the reeler quickly attaches the ends together with a twist and continues reeling.

*Here are two very good videos that will show you how silk is reeled using simple manual reeling wheels*
The First Twist

Once this initial thread of 6-20 filaments is reeled, it is then usually twisted for strength and integrity.

Remember that the only thing holding the filaments together at this point is the sticky serecin and eventually all the sticky serecin will be washed away from the silk filament. So this initial thread must be twisted so it stays together after the serecin is gone. Also, twisting the thread makes it stronger and harder, but decreases its luster.

Twisting can be done either manually or by machines. Generally, the less twist to a thread produces a silk yarn with more luster and therefore higher quality. But if the initial thread is not twisted, it would fall apart when the serecin is washed away.

At this point, you have a “usable” silk thread which is sometimes called a “dumb single”. But you can’t weave with a dumb single unless you want to weave a type of some other specialty. This dumb single is simply to thin and not strong enough for a loom.

Doubling
This silk has been reeled and bleached. It still needs to be doubled and twisted before a weaver can use it.

Doubling is the intertwining of two or more silk threads into a single silk yarn. Quality silk yarns are often composed of 2-6 individual threads, and some yarns may use 10 or more threads in the doubling process. The intertwining is done by the same twisting process that I explained above either by hand or machine.

The doubling process creates a silk yarn that is now strong enough to weave with. The amount of dumb singles used to make the yarn and the amount of twist is determined by the type of yarn being made. The yarn may be twisted again after doubling for added strength, hardness and integrity.
At this point let’s review how many silk filaments are needed to make a hypothetical silk yarn: If 12 filaments were used to make a dumb single thread and then 4 dumb singles were used to make a given yarn (4-Ply), then 48 filaments would be contained in a single yarn.

If you hang around silk yarn makers or weavers, you may hear the old-fashion term “thrown silk”. Thrown silk is nothing more than silk thread that has been doubled and/or twisted.

**Scouring**

Scouring is the process by which the sticky sericin is permanently removed from the silk filament. It is done after the silk yarn is doubled and twisted. It’s usually the last step in the silk yarn making process. Scouring may also include bleaching the reeled silk, especially for Thai yellow cocoon filament.

Usually the silk is boiled for several hours to remove all traces of sericin. The silk yarn will now be very lusterous and soft. Unfortunately, the removal of the sericin decreases the weight of the silk yarn by 25%! And silk yarn is sold by weight, not length.

Because the yarn and been twisted and doubled, it will keep its integrity and strength even though the sericin has been removed.

**Dyeing**
Dyeing is not really part of the process in the making of silk yarn. Silk yarn is often sold undyed and the weaver will eventually dye the fabric, or the yarn seller will dye the yarn to the color the buyer wants.

**Good Yarn-Bad Yarn: A Weaver’s Perspective**
The quality of the silk yarns a weaver chooses to use are fundamental to the quality of the fabric she'll weave.

Of course a weaver chooses the silk yarns that she uses on her loom, but her choice is constrained by functionality. In other words, is the silk yarn chosen by the weaver proper for its use on her loom?

Example: You have many shoes in your closet that you can choose to wear. But if you’re going for a hike in the snow, choosing your sandals to wear would be a poor choice.

Silk yarns are specifically made for 3 purposes: For use as the warp (the vertical yarns on a loom); For use as the weft (the horizontal yarn that is carried back and forth by the shuttle); a sewing yarn.

**Warp Yarns**

The warp yarns of silk weaving are the most important and should be the best quality.

Warp yarns are called *organise* yarn and are specifically made for warping a loom. These yarns are often twisted hard for strength. They are the smoothest of all silk yarns and don’t have slubs (bumps and roughness) so the warp weave will be smooth and strong. Only the finest grades of silk yarns are used for the organise/warp. The finest warp yarns come from bivoltine silkworms although you can also warp a loom with silk yarn from poly-bivoltine cocoons.

There is a shortage of quality organise silk yarn in Thailand, and so 160 metric tons of bivoltine...
organise/warp yarn (or the bivoltine cocoons) is imported into Thailand annually.

Weft Yarns

Weft yarns are known as tram yarns and a weaver has greater flexibility than with the warp. Polybivoltine and polyvoltine silkworms produce filament that yarn makers use to produce the tram/weft yarns. Bivoltine silk filament is generally not used for the tram.

Silk yarn is sold in skeins and by weight. Lower left photo: Drawings of skeins of silk from India. (Circa 1800)
Grading Silk Yarn

Silk filament can be bumpy and rough, or it can be smooth and consistent in diameter. Smooth and consistent is deemed superior in the world of silk. Bivoltine cocoons have the smoothest and most consistent filament. That’s why it’s considered the best and costs the most. (A skein of bivoltine silk yarn, enough to make a small scarf, will cost about $35 (US).)

Polybivoltine (Thai hybrid yellow cocoon) is somewhat rougher and bumpy. But it is still good enough to make either organise or warp yarn.

Polyvoltine (Native Thai yellow cocoon) is the roughest and bumpiest of silk filament. The silk weaving villages in Isaan who also engage in sericulture, produce all their silk yarns, both organise and tram, from this little native silkworm cocoon.

Commercial yarn makers would never make organize yarn from the polyvoltine silkworms as it’s too rough. But for the many weaving styles and Thai silk fabrics (especially dupioni style fabrics) polyvoltine organise yarn gives great character and texture to a bolt of fabric.

Grading Silk Filament
This photo shows a single silk thread which is composed of 8-20 individual silk filaments.

As mentioned above, the smoother the filament the higher grade of silk. But a single filament can be from 300-1500 yards long and the filament of a single cocoon does not stay consistent.

The smoothest and finest part of the silk filament is the inner layer and makes up about 1/3 of the total length. This part of the silk filament is often known as “Mai Noi” or 1 Thai. This part of the filament is used to make the warp yarn. This is the best silk filament.

Next in order is when the yarn makers (especially village yarn makers) combine the inner layer filament (Mai Noi) with filament from the rough bumpy outer layer. This type of silk yarn is called “Mai Loei” or 2 Thai and is used for tram/weft only.
Lastly, when only the filament from the outer layer of the cocoon is used, the result is the roughest and bumpiest silk yarn. This is called *Mai Leub* or 3 Thai. This is definitely a weft/tram yarn.

**But is Bumpy Silk Yarn Bad?**

*Photo above: “Bumpy” (uneven) silk yarn. Silk slubs can be easily seen on bottom of the photo. You can see the “bumpy” weft yarn used to weave this piece inside the wooden shuttle.*
So what exactly happens when a weaver chooses to use a bumpy, rough yarn especially for the tram/weft? Answer: She’ll weave a stunning bolt of Thai silk with its signature characteristics of rough, slubby texture!

Put simply, a silk yarn made from rough, bumpy filaments will produce a fabric that has lots of bumps and texture such as dupioni silk. The fabric’s bumps, nits, and knots are called slubs and are the result of using yarns that have rough and inconsistent diameters. Fashionistas, silk enthusiasts, and consumers love “bumpy” Thai silk.

The only type of Thai silk fabric where slubbing is a real no-no are the brocades. Other than brocaded Thai silk, slubbing and rough texture are considered good attributes of a bolt of Thai silk, even with mudmee silk.

So from a weaver’s perspective, silk yarn must be capable of the job given to it, especially for the warp. The yarns she chooses must always be sufficient to accomplish the desired fabric texture she is weaving.

**Dupioni Silk Yarn**

Dupioni Silk is a fabric known for its rich texture of bumps, slubs, knots and nits. Classically, it is woven from Dupion silk cocoons, although a weaver could use a different bumpy yarn and accomplish a similar texture.

A dupion silk cocoon is a cocoon that either has two silkworms inside, or two cocoons have melded together much like Siamese twins joined at the hip. For reasons beyond me, dupion cocoons yield the roughest and bumpiest silk filaments and are therefore best for weaving textured silk fabrics.

Although dupion silk yarn is the roughest, I’ve never heard anyone say that dupioni silk is a lesser quality silk. In fact, it’s one of the most sought after fabrics in the Thai silk world. So although we commonly say that the smoothest silk yarn is the best, it’s really a question of which silk yarn is best for the job.

**The Queen Sirikit Institute of Sericulture**
Queen Sirikit showing off a few of her Thai Silk National Dresses. The Queen Sirikit Museum of Textiles is a must see when in Bangkok. (Photo attribution: Queen Sirikit Museum of Thai Textiles)

For many years, Thailand has attempted to increase silk production and specifically increase the amount of high quality silk yarn being produced in the country. The Queen Sirikit Institute of Sericulture was officially established in 2005 to help small scale silk producers and weavers throughout Thailand, but especially in Isaan, increase such production.
The Institute has regional outreach offices that give local farmers/weavers support for producing and weaving silk. For instance, the Institute was instrumental in developing better mulberry trees and will give this enhanced stock to small producers at no cost.

The Institute has also been instrumental in developing better hybrid silkworms that are easier to rear and whose cocoons yield more and better quality silk than the older yellow cocoon varieties. The Institute also educates it’s silk farmers and weavers in marketing their products.

The Royal Peacock Mark

As mentioned earlier, Queen Sirikit strove to improve the quality of silk and silk weaving in her Kingdom. Her Institute developed a grading system for Thai silk fabrics called the “Royal Peacock Mark. It includes the following four classifications:

1. **Royal Thai Silk-The Golden Peacock Mark**: The fabric must be handwoven and the silk used for both warp and weft is indigenous reeled Thai silk and the silk yarns made by hand. (No yarn made by a commercial yarn maker, whether Thai or foreign is permitted.)

2. **Classic Thai Silk-The Silver Peacock Mark**: The fabric must be handwoven and the silk used can be either reeled indigenous silk or machine reeled silk yarns. But if machine reeled, the reeling motor cannot exceed 5 horsepower. (This last requirement is to ensure that the highest marks are for
traditional Thai silk weaving.

3. **Thai Silk-The Blue Peacock Mark:** The fabric can be either hand woven or machine woven. The fabric must be 100% silk, but the silk yarns can be commercially made and imported into Thailand.

4. **Thai Silk Blend-The Green Peacock Mark:** Any kind of loom can be used and the fiber content of the fabric must be predominately silk, but other fibers such as cotton may also be used. The fiber content of the fabric must be displayed showing exactly how much silk and other fibers were used.

The problem with the Peacock Marks is that a bolt of Thai silk (or finished apparel) often carries no mark. Most Thai silk in the weaving villages, while they may comply with the different rules of classification, simply don’t put tags on their bolts of finished silk fabric.

**In Honor of the Queen**

The Queen’s Institution of Sericulture is the culmination of her life work of advocating on behalf of silk farmers and weavers. Without the Queen’s work, especially in the 1950s-1960s, Thai silk production and weaving would probably have faded away into a footnote of history. Instead, Thai silk is known as the finest fabric on earth.

**Final Thoughts**
Praewa silk along with skeins of high quality silk yarns produces in Ban Phon, Thailand.

This overview of sericulture, raw silk and yarn making is meant to give you a further appreciation of woven Thai silk fabric.

You cannot understand a bolt of Thai silk without understanding the silk it was made from. If a cabinet maker, regardless of skill, chooses plywood for his project he will be forever limited in quality. But if he chooses mahogany, teak or oak, his cabinet will be of much better quality than the plywood counterpart. And so it goes with silk fabric.
The fact that small, rural villages in Esaan produce their own silk and silk yarns should make us value their end product, woven Thai silk, even more.

**Category**

1. The Thai Fabric Chronicles

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