GOAT PRODUCT GUIDE FOR YOUTH
Introduction

Goats are wonderful animals that survive in a wide variety of climates all over the world. They produce an AMAZING amount of useful products. How many goat products can you think of?

This Guide will help you learn more about the different products goats give us. Some of these products, milk and meat for example, come straight from your goat. People have to make some of the other goat products by further processing them. Some examples of these are cheese, soap and sausage. We call these products “Value-added products” because the change that occurs from processing them often means you can sell them for more money than you could sell the original product. Sometimes processing these products involves chemical reactions that seem almost to magically change the original product. This Guide will help you learn more about the SCIENCE behind this “MAGIC”.

Goat Milk

Just like cow milk, goat milk is used to make many dairy products. It can be drunk fresh, canned or made into cheese, ice cream, yogurt and even fudge. Milk contains the six basic nutrients including water, protein, fat, carbohydrates, minerals and vitamins. Cow and goat milk are similar when it comes to the amount of these nutrients they contain. However, goat milk is different from cow milk in special ways.

The fat in milk is called butterfat or cream. If you have ever had the opportunity to milk a cow and put the milk in a refrigerator to set, you will find that it separates into two layers. The top layer will be a very thick layer of cream that can be made into butter or ice cream
easily. This is because cow milk is not naturally “homogenized”. “Homogenized” means that the fat is mixed so well into the milk that it does not readily separate and rise above the rest of the milk. With the exception of cow milk, most milk including milk from goats, humans, horses and sheep IS naturally homogenized. However, if you put goat milk in a shallow pan in the refrigerator some of the butterfat will rise to the top of the pan. You can scrape this off as cream to whip into whipping cream or shake to make butter. Cream separators are also be used to separate goat milk from the cream. Most cow milk you buy in a store has been mechanically “homogenized” to break up the cream into very small globules. This way the cream stays mixed into the milk in your refrigerator rather than separating into a cream layer.

The fat in milk contains many fatty acids. The composition of these fatty acids is different for human, cow or goat milk. Capric acid, caprylic acid, and caproic acid are all fatty acids that get their names from Latin words for goat (capra – she goat, caper – he goat). Goat milk fat contains more capric, caprylic, and caproic fatty acids than cow milk. These particular fatty acids are easy to digest and break down fast. This is why goat milk is sometimes the preferred milk for invalids and orphan animals and also why it may have a shorter shelf life than cow milk if not handled carefully. These fatty acids add important flavors to goat cheeses.

Carbohydrates are the major source of energy your body depends on. The main carbohydrate in milk is lactose. Lactose is milk sugar. In order for people to digest this sugar, their bodies need to produce a special substance or enzyme called lactase. Almost all people produce lactase when they are babies. However, depending on your genetics, your body may lose the ability to produce lactase as you get older. If this happens, you become “lactose intolerant” and your stomach may get very upset when you drink milk. Luckily for us, there are
some bacteria that also produce lactase and eat lactose for food. These bacteria convert the milk sugar into lactic acid. The lactic acid can help change milk into products such as cheese or yogurt. People with lactose intolerance can usually eat some of these bacteria-fermented dairy products.

Raw milk straight from your goat will contain lactose-eating bacteria. However, milk is also a good source of food for other microorganisms. Some of these microorganisms are germs that can spoil the milk or even make it harmful for you. Because of this, milk is often rapidly heated to a very high temperature to kill the microorganisms without affecting the taste of the milk. This process is “pasteurization” and requires the milk to be heated to a minimum of 161°F (72°C) for a minimum of 15 seconds.

Some people are allergic to cow milk. A food allergy occurs when your immune system overreacts to a particular protein in the food and makes you sick. You might break out in hives or symptoms might be as severe as vomiting, stomachache, diarrhea or worse. There are two major groups of milk protein: casein and whey protein. Usually people are allergic to one of the forms of casein proteins. Goats have many of the same casein proteins as cows. However, in some breeds and individual goats not all the casein proteins are expressed. Therefore, not all people who are allergic to cow milk are also allergic to goat milk although most are.

There are lots of good things about casein proteins though! When casein is mixed with enough acid (for example vinegar, lemon juice or lactic acid) and/or a special enzyme called rennet, it curdles to form curds and whey. The next section will describe how to make cheese from curdled milk.
Many people who cannot drink cow milk are not lactose intolerant or allergic to the milk. Instead, they have digestive problems from the fat in the cow milk. Because goat milk is naturally homogenized and has a slightly different composition of fatty acids than cow milk, some people who cannot drink cow’s milk have no problems drinking goat milk.

Milk and dairy products sold for drinking or eating need to come from an inspected dairy. Any processing plant or dairy that pasteurizes fluid milk or makes milk into other dairy drink/food products must be licensed and regularly inspected.

Official dairy goat lactations are usually expressed by the terms of 1) days in milk, 2) total pounds of milk produced, 3) either the pounds or percentage of butterfat produced and 4) either the pounds or percentage of protein produced.

For example if a dairy doe has a lactation of: **304 days  2513 lb.  88 lb. (3.6%)  73 lb. (2.9%)**

This means that in 304 days of milking (i.e. at 304 days in milk) she milked a total of 2513 pounds of milk yielding 88 pounds of fat (fat percent = 3.6%) and 73 pounds of protein (protein percent = 2.9%). One gallon of milk weighs about 8.6 pounds. How many gallons are in 2513 lbs. of milk? About how much milk on average did this doe give each day? It would be good to know her age and what sort of management she was getting to decide if she is a good milker or not.

**Goat Cheese**

Cheese is made by coagulating (changing from liquid to solid) some of the proteins and fat in milk. We also call this “curdling”. Casein proteins in milk will curdle when milk is acidified to a pH of 4.6. This chemical process is called “acid coagulation”. This acidity can be reached in
two ways: 1) add acidic products like vinegar, lemon juice, or citric acid to the milk in the presence of enough heat OR 2) Warm up milk and add a lactose eating bacteria to it.

We call this second method “inoculating” (infecting) the milk with a bacterial “culture” or “starter”. Dried cultures can be bought and stored by freezing. Lactobacillus bacteria is the main type of bacteria used for cheese making. It digests the milk sugar (lactose) and turns it into lactic acid to acidify the milk. Lactobacillus cultures or starters are used to make yogurt, kefir, buttermilk, and many types of cheeses.

Another way that casein proteins curdle is by being exposed to an enzyme called rennet. An enzyme is a substance that speeds up a chemical reaction. Rennet occurs naturally in the stomach of all nursing mammals. Coagulation by rennet causes the casein proteins to form smoother and firmer curds than those formed by acid coagulation alone. Most cheeses are made by using both acid AND rennet coagulation. Some plants and bacteria also produce substances similar to rennet that will curdle milk.

If milk is heated to a high temperature in the presence of enough acid even the whey proteins in it will be forced to curdle. This is how cheeses such as ricotta and queso blanco are made.

Most types of lactobacillus bacteria require some warmth to survive and grow. If they like medium temperatures of no more than 90°F, we call them “mesophilic bacteria”. If they need hotter temperatures than 90°F, we call them “thermophilic” (heat loving) bacteria. Different types of cultures are used to make different cheeses.
There are many different types of cheeses in the world. The type of coagulation that is used to make them affects what kind of cheese you get. The type of starter you use to make cultured cheeses will also affect what kind of cheese you get. We can make fresh cheeses with soft curds or we can make hard cheese. We can make hard cheese by forming the soft curds into a round, flat shape (traditionally called a “wheel”) and squeezing it in a cheese press to take more moisture out. We then rinse the wheel in a “brine” (a brine is a solution of salt and water) and store it in a cool place. Sometimes we even store it in a “cheese cave”. We let the cheese ripen and harden for several months. This is called “aging” the cheese.

**Some interesting cheeses:**

**Chévre**: The word “Chévre” is the French word for “goat”. This fresh soft cheese originally made famous in France is the most marketed goat cheese in the US. It is made with specific mesophilic cultures and very little rennet. Chévre cheese can be used similarly to cream cheese and served plain, seasoned with herbs or sweetened with fruit jams.

**Feta** comes originally from Greece. It was traditionally made from either sheep or goat milk or both since Greek farmers often ran their milking ewes and does together. Feta cheese is unique in that it is a semi soft cheese that is often aged for at least a month. However, instead of being put in a cheese press to make it hard and then aged in a cool place to preserve it, it is preserved without a lot of pressing by storing it in a salt brine. The brine keeps germs from developing in it and also gives it a distinctive salty taste.

**Gouda** was originally from the city of Gouda in the province of South Holland in the Netherlands. This Dutch cheese is traditionally pronounced as “how-da”. It is a semi-hard
cheese known for its smooth, creamy texture and low acidity. The low acidity is caused by “washing the curds” while making the cheese. This means that the curds are not left in warm whey to develop more and more acidity. Instead, a third of the whey is removed and replaced with more and more water. This important step removes some of the lactose so only some lactic acid is produced by the lactobacillus bacteria the milk is inoculated with.

**Blue Cheese:** We call cheeses that have had specific types of beneficial Penicillium molds added to them “Blue Cheeses”. Can you guess what antibiotic is made from another beneficial type of Penicillium mold? Answer – Penicillin! This mold gives the cheese a very distinct flavor and also helps prevent harmful bacteria from growing on the cheese. Most blue cheeses have a blue/green veining throughout the cheese. These veins are caused by a process called “spiking” where stainless steel needles are pushed into the wheel of cheese to introduce oxygen and encourage the mold to grow.

**Gjetost:** This traditional Norwegian cheese can be pronounced “yay-toast” or “yed-oost”. The cheese is brown in color and has a distinctively sweet taste due to “caramelization” of the milk sugars. When a sugar like lactose is heated up enough, water is released from the sugar and the sugar molecules form into new compounds that have a brown color, thicker consistency and very aromatic yet sweet taste. We call this process which results in “browning” of the sugars, “carmelization”.

Gjetost is made from the whey left over from making other cheeses. Whey is an excellent source of lactose. The whey is simmered down in a pot or pan to evaporate the high moisture in it. As the lactose (remember that lactose is milk sugar!) begins to caramelize, the
color of the cheese turns to a dark amber color. At this point, the cheese is removed from heat and cooled in stainless steel molds.

*Bûche*: The name of this French goat cheese means log and refers to the shape of the cheese. The cheese is a special type of chévre that is inoculated with a mold called *Geotrichum candicum* as well as with a traditional chévre culture. The curds are drained in a cylindrical mold which gives the cheese its log shape. The logs are then rolled in wood ash before being put in a “cheese cave” to age for several days or weeks. The ash reduces the acidity of the cheese and helps the *Geotrichum candicum* mold to develop into a soft bluish grey layer on this soft cheese.

Cheddar originated in England but is now popular throughout the world. It has a distinctive “sharp” taste that gets stronger the longer it is aged.

To make cheddar, a special process called “cheddaring” is done. After the curd has set, the curds are cut up and then pressed together into slabs. The slabs of curds are stacked on top of each other. The weight of stacking the slabs of curds on top of one another presses out even more moisture. Then the slabs of curds are cut up again, pressed into slabs again and stacked again and again. The slabs continue to get drier and also more acidic. The process is complete when the acidity of the whey is between 5.1 and 5.3 and the desired moisture level is obtained. At this point the curd mass is broken into small pieces and mixed with salt. This stops the cheese from getting any more acidic.

Mozzarella and Oaxaca are examples of stretched curd cheeses or string cheeses. For these cheeses, the curds are left in warm whey to become even more acidic. When the curds are
finally acidic enough they are put in hot whey or water and kneaded just like you would knead dough to make bread. The curds turn shiny and start to become elastic. The cheese is stretched into a long rope and the “rope” is wrapped around itself to form a smooth ball. When melted, for example, over a big pizza, these cheeses reveal their “stretch”.

Swiss cheese is the name used in North America for “Emmental” type cheeses. Emmental originated in Switzerland. “Swiss” cheeses are riddled with holes known as “eyes”. In the U.S. we tend to use this as the main characteristic of “Swiss” cheeses regardless of where they originate from. For example, Jarlsberg is considered a Swiss cheese even though it comes from Norway.

In Swiss cheeses, lactobacillus bacteria AND a bacteria called Propionibacterium shermani are both added to the milk. As the cheese ages, the P. shermani bacteria consume the lactic acid produced by the lactose eating bacteria and release carbon dioxide gas. The gas forms bubbles that leave holes or “eyes” in the cheese. Swiss cheeses that do not develop holes are called “blind”. The acetate and propionic acid also produced by the bacteria as it consumes lactic acid give Swiss cheeses their nutty and sweet flavor.

Cultured Milk Products

Yogurt and kefir are types of “cultured” milk made by warming up milk and inoculating it with several yogurt or kefir bacteria cultures. Yogurt must contain both Lactobacillus bulgaricus and Streptococcus thermophiles in order to be considered a true yogurt. It often includes additional strains of lactobacillus bacteria. Kefir generally contains more bacteria strains than yogurt and is fermented longer. Unlike yogurt, it also contains beneficial strains of
yields. It is usually thinner than yogurt and is considered a cultured drink. It may be somewhat carbonated because of the presence of yeasts and sometimes \textit{P. shermani}. If you drain yogurt or kefir to get enough liquid out, you can make a kefir or yogurt cheese.

\textbf{Goat Milk Candy}

Cajeta is a Mexican candy or caramel made by adding extra sugar to the goat milk and then caramelizing it. It is similar to Dulce de Leche which is generally made with cow milk. Goat milk can also be made into several different types of fudge. Some goat milk fudges also have chévre added to them for added flavoring.

\textbf{Goat Soap and Lotions – still in the works!}

\textbf{Goat Milk Frozen Desserts – still in the works!}

\textbf{Goat Meat}

Goat meat is a delicious meat that is used for many ethnic dishes. Meat from young goats is tender and flavorful. Older goat, particularly male goat, has a coarser texture but is far less pungent than mutton, with a flavor similar to beef.

Goat meat is a healthy meat choice because it is lean and rarely “marbles” (marbling is when fat is deposited as flecks within the muscle; this fat cannot be trimmed off). Instead, goat fat is deposited around the internal organs (visceral fat) and under the skin (subcutaneous fat) to provide energy and protection against starvation. During meat processing, the visceral fat is removed with the internal organs while some of the subcutaneous fat is removed with the hide. The rest of the fat is easy to trim off.
Goat fat generally contains a higher percentage of cholesterol than chicken or beef fat. However it is lower in saturated fats (the “bad” fats) than even skinless chicken breast. This excellent ratio of polyunsaturated to saturated fats makes goat meat a very healthy choice of meat to eat. Like other lean meat cuts, most cuts of goat are traditionally cooked at low heat or with moisture or marinating.

Most people who raise meat goats market either suckling kids or weaned market kids.

**Suckling Kids:** Other names for suckling kids include hothouse kids, Easter kids, cabrito (Mexico), capretto (Italy), and katsikia (Greece). They are unweaned kids ranging from about 4 to 12 weeks old. A good suckling kid is growthy and plump, looking like it has consumed lots of milk and very little coarse forage. Dairy replacement kids or orphan kids raised on a minimum of milk and showing noticeable rumen development are not ideal. The meat should be relatively light in color. The cabrito and capretto markets ideally prefer kids 18 to 25 lbs live weight while Greek markets tend to prefer kids weighing 30 to 45 lbs.

**Market kids:** Market kids are weaned kids with no adult teeth (all milk teeth). “Feeder” kids are very lean market kids in demand for feedlots. “Muslim kids” is a generic term for moderately lean market kids and refers to the preference of many ethnic customers for goats with no surplus fat. Heavier, larger kids are sometimes called “restaurant” or “finished” kids.

There is also a market for cull does, yearling and 2 year old wethers and even mature bucks. Older cull does and bucks may be called “curry” goats because of their popularity for slow cooking into a stew or curry to feed a plentitude of people. The method of cooking them
counteracts the toughness of older meat. However, excessively fat or bony goats are undesired for most markets.

Because goats are often used for curries or stews, the carcasses are often prepared by cutting all the meat (often including bones) into 1 to 1 ½ inch chunks. This is often done on a band saw. However, the carcass can also be cut up similar to a lamb.

**Goat Carcass Breakdown:**

![Goat Carcass Diagram]

**Primal Cuts:** When processing a whole carcass, the animal can be broken down into smaller parts to make handling easier. These smaller segments are called *primals* and they can be further divided into subprimals and then retail cuts. Like lamb, a goat is commonly broken down into five primals: shoulder, rack, loin, breast/foreshank and leg.

**Shoulder:** The shoulder of the goat will account for almost one-third of the entire carcass weight. The shoulder is generally one of the tougher primals of a goat due to its high collagen content and shorter muscle fibers. Connective tissue is the tissue that supports and binds the other tissues of a body. Some examples of connective tissue are cartilage, tendons, ligaments, bone, and blood. Collagen is the main structural protein in connective tissue. Collagen is tough but when broken down by water molecules (hydrolysis) it becomes a flavorful gelatin. Shoulder roasts, blade chops, and stew meat originate from this primal.

**Rack:** The rack of the goat contains the ribs as well as the fore-end of the *longissimus dorsi* muscle, which makes this primal a high-value meat cut. The meat on the tips of the ribs can be
removed, a process known as *Frenching*, in order to improve the appearance of the cut. Rack-roast, rib chops, and crown roast originate from this primal.

**Loin:** The loin of the goat contains the hind-end of the *longissimus dorsi* as well as the tenderloin. The loin extends from the thirteenth rib of the animal to the anterior (front) of the pelvis. The flank muscle is generally removed from the loin cut. Loin chops, loin roasts, and the tenderloin originates from this primal.

**Breast/Foreshank:** These two subprimals are removed together on the carcass using a cut that goes from the lower shoulder to through the last rib, remaining parallel to the spine. The foreshank is full of connective tissue and is generally a tougher muscle due to its constant motion. However, the collagen in it also contributes to excellent flavor. The breast contains the sternum, as well as the lower portion of all thirteen ribs. Boned and rolled breast, Denver ribs, and riblets all originate from this primal cut.

**Leg:** The leg of goat contains the sirloin, the entire hind leg, as well as the hind shank. The leg muscles are large and lean due to constant motion. Leg of goat can be prepared bone-in or boneless, which almost always includes the removal of the hind shank. Sirloin steaks, sirloin roasts, leg roasts, leg steaks, and kebabs can all originate from this primal.

*Selling goat meat:*

Goats must be butchered at a USDA licensed slaughterhouse under USDA inspection if you plan to sell individual retail cuts of meat. Both the live animal and the resulting carcass must be inspected. Goats can be butchered and processed in NYS “custom exempt” slaughterhouses
without federal inspection only if they will be consumed solely by the animal’s owner, family, employees, and non-paying guests. Such meat must be stamped “Not for resale.”

However, the goat can be sold to the new owner over the phone or by email and delivered to the custom exempt slaughter house by the original owner with cutting instructions from the new owner who is the actual consumer. This is called “freezer trade” and is a common practice in New York. You can also sell the goat to a consumer who is experienced at butchering and let them butcher the goat at your farm. In both cases, the consumer cannot resell the meat to anyone else.

Tips for cooking goat

a. Goat meat is low in fat. It can get dry and tough if cooked at high temperatures and under dry conditions.

b. The forequarters contain connective tissue called collagen. Collagen is very chewy but breaks down to a delicious gelatin. Cuts from the forequarter can be marinated prior to cooking or cooked slowly by moist heat to make very tasty stews and curries.

c. The hindquarters contain less collagen. They are tenderer but be sure not to overcook them or they can lose their flavor and become dry. They are good for roasting and braising.

d. The tenderloin is the underside of the loin. This muscle does not get much exercise and is the tenderest part of the goat. It is probably the best part of the goat to cook fast (grill, broil, pan-fry) and serve quickly! Enjoy!!
Goat Fiber

In addition to producing milk and meat, some types of goats are raised for their fleece or fiber. Sheep produce wool fiber. The two major types of fiber produced by goat breeds are cashmere and mohair.

Cashmere: Just like all goat breeds produce milk and meat, most breeds also produce a fine fuzzy undercoat (cashmere) that grows in the winter as well as their regular coat of smooth shiny hair. We call the shiny hair “guard hair” because it guards or protects the cashmere and keeps it from splitting in the winter cold.

Most of the highly productive breeds of cashmere goats originate from Central and Eastern Asia. For example, the Liaoning goat in China can produce as much as 2 pounds of cashmere per fleece. However, these goats cannot be imported into the US. Instead, there are no designated breeds of cashmere goats in the U.S. Rather, over the years we have selectively bred for goats that yield more cashmere by importing feral goats from Australia chosen for cashmere and identifying individual dairy goats and Spanish meat goats that produce noticeable amounts of cashmere. Some of our goats can reliably produce a ½ lb. of fiber per fleece but most cashmere goats produce 2 to 4 ounces of cashmere each year. The Cashmere Goat Association is setting up a database to identify individual goats that meet a specific set of criteria regarding fiber and sound, functional conformation.

Cashmere fiber is tightly crimped (rather than wavy), soft, and lacking luster (sheen). In order to be considered cashmere, industry standards require that the fiber be at least 1 ¼ inches long with an average diameter of less than 19 microns. This is very, very thin. For
example, a human hair can range from 17 to 181 microns in diameter. The crimpiness of the fiber gives it “loft” and enables garments made of cashmere to provide warmth without weight.

Cashmere is famous for its warmth, softness and lightweight. During the 15th century over 60,000 artisans were employed in the Indian subcontinent making “Kashmir” shawls and scarves for export throughout the known world. Today, luxurious dress suits, sweaters, dresses and even blouses are still made from cashmere.

Raw cashmere (also called greasy cashmere) is a combination of the soft cashmere as well as the coarse outer guard hairs. Goats produce cashmere only part of the year and the growth is dependent on changes in day length. Cashmere grows from the longest day of the year (summer solstice, ~June 21st) until the shortest day of the year (winter solstice, ~Dec 21st). We generally harvest cashmere in the early spring before the goats naturally shed it by combing out the fleece or shearing it. Combed fleeces generally contain less guard hairs than sheared fleeces but take more time and labor. The greasy cashmere must be washed (this process is called “scouring”) to remove dirt, dander and vegetation matter. The guard hairs must be removed from the actual cashmere. Otherwise, the fiber will be itchy and not have the valuable properties of cashmere. We call this process of removing the guard hairs “dehairing”.

Dehairing can be done by repeated hand carding to allow the dense hairs to fall away from the softer cashmere or by sending the fleece to a commercial mill that has a dehaireing machine. A standard cashmere scarf weighs about 6 ounces so it takes about 3 cashmere goat fleeces to make one scarf!
Mohair: Mohair comes from the Angora goat (Angora fiber comes from Angora rabbits!). Angora goats originate from Turkey and were first imported into the US in 1849.

Mohair is a soft, long, luxurious fiber with a rich “luster” (sheen) that is used in clothing, carpets, blankets and upholstery. Mohair is different from sheep wool in that it has smoother and larger scales, leading to its slippery feel, luster (the smooth scales reflect light better than rough scales) and strong resistance to felting. Mohair does not have a crimp like cashmere; however, the individual fibers can stretch out almost a third of its length due to its elasticity. This elasticity made mohair ideal for making western string girths or cinches for saddles. Mohair also wicks away moisture well and holds brightly colored dyes better than other natural fibers.

Although Angora goats come in many colors, most are white because the commercial industry prefers white for ease of dyeing, etc. Unlike cashmere goats which produce a small amount of relatively short fiber, Angora goats can produce up to 25% of their body weight in mohair in a year. The fiber grows very fast, about ¾ inch per month. Because mohair grows so quickly, Angora goats are usually sheared twice a year to maintain quality. Young goats can be sheared when 6 months old and produce the most high-value fiber due to its soft, silky texture. Mature goats produce about 8 to 16 pounds of mohair each year.

Mohair does not have to be “dehaired” like cashmere. However the fleece still needs to be “scoured” to remove dirt, vegetation, and any “goaty” scent. Just like wool, the mohair is often carded at a mill to make it into long, narrow bundles of fiber called “roving” that can then be spun into yarn.
Angora goats have been crossed with other breeds to produce Cashgora (cashmere x angora), Pygora (pygmy x angora) and even Pycazz (pygora x cashmere) goats. Although these goats generally give more fiber than cashmere goats, the fiber is often coarser, longer and more variable than cashmere. It is not as desirable for the garment trade and you will usually get a lower price per ounce but you will also get more of it per goat. In addition, these special fibers are often very popular with hand spinners and knitters.

Goat Hides and Leather

Goatskins can be made into top quality leather, drumheads and even parchment. Processing hides takes several steps. The fresh hide is “fleshed” (scraped to remove any meat and fat), and “salted” to “cure” the hide (the salt draws out the moisture in the hide so that bacteria cannot survive on it and spoil the hide). Then the hide is stretched. Lye or other chemicals are used to make the hair and hair roots “slip” (fall off). These cured hides called “rawhide” can then be changed into leather by “tanning” them. Tanning is a chemical process where tannic acid or other chemicals preserve the skin by permanently changing the protein in the skin into a stable substance very resistant to spoiling.

In the mid 1800’s, Gloversville, NY was known as the leather capital of the US. Nowadays, only a few full-line tanneries still operate there. Countries like the US that protect their citizens by regulating the use and disposal of the potentially polluting chemicals used in tanning find it hard to compete profitably with countries with more relaxed regulations.

Goat leather in the US is manufactured into gloves (from fancy white kid gloves to work gloves), and high quality shoes, purses, pocket books and clothing. Most of the goatskins are imported
from Africa. However, as the popularity of goat meat increases in the US, local tanneries may start to utilize local skins.

Over two thousand years ago people started making specially prepared rawhide from goats, sheep and calves into writing “paper” for the creation of books, etc. This special material is called “parchment”. The original pages of our Constitution, Declaration of Independence, and Bill of Rights were written on parchment. You can still see them in the rotunda of the National Archives Museum in Washington, D.C.

Drumheads for African and Indian style drums commonly come from goat hides. Some drumheads come from tanned hides while most are rawhide.

**Goat Hair**

Around the world, you can find breeds of goats with longer guard hairs. Historically these guard hairs were made into paintbrushes and calligraphy brushes or, when long enough, even woven into purses, bags and rugs. Today, many paintbrushes are still made from goat hair.

**Goat Manure**

Goat manure can be composted and packaged to make an odorless, easy to handle garden fertilizer. The average mature goat produces almost 2500 pounds of manure (including bedding material) per year! A sample of the manure can be analyzed through cooperative extension at a soils lab such as Dairy One to give your customers a clear idea of its fertility.
Summary

This is the first draft of the guide. We hope you have enjoyed reading it and have learned more about some of the things we get from goats! We will work on improving this booklet for 2019!