UNIVERSITY OF WYOMING
EXTENSION

NORTHEAST EXTENSION CONNECTION

July-September 2014
Volume 11, Issue 3

IN THIS ISSUE

The True Cost of Breeding Your Mare

By Chance Marshall
Profitable and Sustainable Agriculture Educator

During the spring and summer it is pretty common to see pastures that have acquired a brand new addition. Newborn foals can be exciting, fun, and enjoyable. Perhaps seeing these babies year after year has made you consider breeding your mare and bringing a new addition to your corral or pasture? There's plenty of reasons that people use to justify breeding their mare but make no mistake, there are ample factors that must be considered before diving into the breeding process. If this is you, now is the time to start considering if breeding that mare is right for you and developing a well-thought out plan.

Before you even begin to consider details such as breeding combinations and stud fees, there are a few things that you must consider. First, determine if your mare is a good breeding candidate. Two major considerations to start with are; 1. physical conformation and 2. disposition. While no horses are perfect, a breeder should be mindful of their mare's faults and weaknesses. There's no use in breeding mares with poor conformation and a bad attitude only to make more horses with poor confirmation and a bad attitude. Second, you should also ask yourself questions such as; where will the foal be born ? Where will it live? Will I be able to provide a clean and protected environment for the foaling process? Will the mare and foal have room for exercise ? Third, from a personal standpoint you should determine if you will have the extra money to fund the project and the ability to commit the necessary time for the next several years.

The one-time stud fee represents only a portion of the overall costs but is likely the most apparent. Price ranges can vary drastically anywhere from $250-$5000+ which can be dependent on the breed, age of the stallion, and performance. Due to the overall time and money investment, it is imperative that you invest in the best sire genetics that can still be considered feasible for your budget. If you plan to cut corners with your stud fee, you should re-think if this is right for you. To quote an old thoroughbred breeders' mantra, "Breed the best you have with the best that you can afford."

Another potentially large financial expense is related to the services of a reliable veterinarian. In order to have a successful pregnancy, a good reproductive vet will need to closely monitor your mare's ovarian cycle via ultrasound ($75 - $100 per scan) for a number of days prior to artificial insemination. Following her cycle closely is absolutely necessary to determine when to have semen collected ($100-$150), shipped overnight ($75 - $200 depending on destination), and plan the most effective time to inseminate ($50). You must decide whether you want the vet to come to you ($200 - $250 per visit) or whether you are willing to pay board at their clinic (roughly $25 per day) for a time dependent on how quickly she ovulates. Regardless of whether you choose to breed your mare via AI or "live cover", you will be responsible for a booking fee ($100 - $800) to reserve your spot in line for the stallion's services in the upcoming breeding season (often deducted off stud fee).

After all of this, let's hope that she's pregnant! As soon as 30 days following breeding until later pregnancy, at least 1-2 visits to the vet will be necessary to determine a successful and ongoing pregnancy ($70 -$100 per visit). A high plane of nutrition will be essential for both the mare's ability to foal without difficulty and for the developing fetus. Additionally, feed costs will rise as a result of increasing nutrient demands from the growing fetus and colder winter temperatures.

If all goes according to plan for about the next 340 days (11 months), the new foal will be born. Following delivery of that foal, it is a good idea to have your vet perform a wellness-exam of both the mare and the foal to ensure they are in good shape. Even if they both appear healthy, it is important to confirm that the mare was able to pass all of the placenta, the foal is adequately nursing, and to ensure that the foal doesn't show any signs of limb abnormalities or infections. Another relatively common complication following parturition is "Broodmare Colic". With the sudden internal absence of the foal, torsion of the mare's colon is a possibility. Intestinal torsion coupled with the uterine contractions needed to expel the placenta are the likely causes and therefore, mares should be monitored for colic symptoms following foaling. Any of these conceivable complications has the potential to significantly increase costs of your breeding venture.

Besides the foaling process, there are a few additional costs that should be considered. During gestation at months 5, 7, and 9, it is strongly recommended that mares receive a dose of a Pneumobort HSV-1 booster vaccine. To prevent rhinoneumonitis which can lead to abortion. If the foal is a colt, more than likely, he should be gelded ideally within the first year of his lifetime ($300). It is also a common practice to vaccinate the foal at 3 months of age. If you plan to register the foal with a breed association such as AQHA, those costs should also be included ($50 – $150).

The bottom line is that breeding your mare requires a serious investment of your money, time, and mental toughness. Without horse slaughter as an option in the U.S., the number of unwanted, neglected, and abandoned horses are climbing rapidly. Before breeding your mare, you must make the responsible decision of whether your mare is a suitable candidate and if you have the disposable income and time to "do it right", otherwise, you are simply contributing to the problem. However, if you believe your mare is a good breeding candidate and you are prepared, then I truly wish you luck, enjoyment, and success!

LEND ME YOUR EARS: Corn-on-the-cob

By Vicki Hayman
Nutrition and Food Safety Educator

Few things say "summer" better than corn-on-the-cob.! Fresh corn-on-the-cob is in season from May to September and goes with most meals. When you bite into the ear of corn, the kernels explode with sweet liquid, giving your taste buds a delightful treat.

When buying corn, the outer green covering called husks, should be bright green and fit snugly around the ear of corn. Immature corn will have blond tassels, and mature ears will have dark brown tassels. Peek into the husks to see if the kernels are in tight rows and plump.

The key to good corn is getting it quickly from the garden or market to the table. If this isn't possible, store the ears in a plastic bag with holes punched in it.

How To Shuck Corn:

1. Peel away the outer leaves until you only have one thin layer of inner leaves remaining around the ear.

2. Peel back the leaves at the tip of the cob just until you can see the top few rows of kernels.

3. Grasp the tops of the leaves and the tassel together in one hand. Grip the bottom of the ear of corn with your other hand.

4. Pull the leaves and tassels straight down in one firm tug. Pull all the way to the bottom, inverting the husk and the cob.

5. Gather the leaves and silks in one hand and snap them off at the base of the ear of corn.

6. Run your fingers over the cob and pick away any remaining silks.

7. Once the husk and silk have been removed from the corn, it is "shucked."

Common condiments and seasonings for corn-on-the-cob include butter, salt, and black pepper. Seasonings and flavorings that compliment or enhance the taste of corn include bacon, basil, cayenne, chili or chipotle powder, chives, cilantro, diced jalapenos, garlic, honey, horseradish, marjoram, onion, oregano, parmesan, rosemary, and tabasco or chili sauce. Be creative and experiment with different flavor combinations!

Here are some great ways for cooking corn-on-the-cob:

Boiled Corn: Boiling is an easy, time-honored method for cooking ears of corn.

Boiling Water: Fill a large pot half way with water. If desired, add sugar to the water to sweeten it more but **never add salt!** Salt will toughen the corn, so wait to salt it *after* you have cooked it. Bring the pot of water to a boil. Boil the shucked corn for 5-10 minutes or until desired tenderness.

Cold Water: Place the shucked corn in a large pot. Cover it with COLD tap water. Cover the pot. Bring the pot to a boil. Once the pot has reached a boil, the corn is cooked.

Fried Corn: Pan-frying works well with thawed corn from the freezer and is a great way to reheat cooked corn.

Fried Shucked Corn: Heat a small amount of butter in a pan over medium heat and add the corn. Sprinkle with flavorings or seasonings and cook until corn is hot, turning ears frequently.

Grilled Corn: The only important question is whether to grill the corn in the husk or shucked.

Un-shucked: Pull back the husks to remove the corn silk and then pull the husks back over the corn. Soak ears in cold water for at least 30 minutes. Grill the corn for 15 minutes or until tender, turning ears frequently.

Grilled Corn con't:

Shucked #1: Soak shucked corn in cold water for one hour before cooking. Drain and brush it lightly with olive oil. Cook the corn for 10 minutes or until tender, turning occasionally.

Shucked #2: Place each ear of shucked corn on a piece of aluminum foil. Add flavorings and seasoning before sealing the foil. Grill for about 15-20 minutes.

Microwaved Corn: This method is good when you are cooking only 1 to 3 ears of corn.

Shucked #1: Place the shucked corn in a microwave safe dish and add 2 Tablespoons of water to the dish. Cover the dish with plastic wrap and leave a small opening in the corner. Microwave the corn on high until tender.

Shucked #2: Wrap each ear of shucked corn in a moist paper towel. Microwave on high until tender, turning it halfway through cooking.

Un-shucked: Try it - you'll be amazed! Place un-shucked corn in the microwave, setting it on high for 5 minutes per ear. After cooking, use heavy oven mitts or kitchen gloves to remove it from the microwave. Cut 1 inch off the large end of the cob with a sharp knife. Shake the cob out of the husk. If it doesn't release fairly easily out of the husk either by shaking or pulling, then it should cook a little longer.

Slow Cooker Shucked Corn: Slow cooking is a healthy, easy way to make corn-on-the-cob.

Foil: Put an ear of corn in the middle of a piece of foil. Add flavorings and seasonings then seal the foil. Place corn in the slow cooker, seam side up and cover. Cook 4-6 ears on high for 2 hours or low for 4 hours. For 8-10 ears, cook on high for 3 hours and on low for 5 hours.

No Foil: Brush inside of slow cooker with olive oil or coat with cooking spray. Season shucked ears of corn. Put corn in the slow cooker and cover. For 4-6 ears, cook on high for 3 hours or low for 5 hours. For 8-10 ears, cook on high for 4 hours and on low for 6 hours.

Smoked Corn: This is a great way to cook corn when you already have the smoker fired up for other foods.

Un-shucked: Soak whole ears of corn in cold water for 4 hours. Rub the outside of the ears with oil and place on the smoker. Smoke ears for about 2 hours.

Oven Roasted Corn: Baking corn in the oven is perfect for times when you are cooking many ears.

Un-shucked: Preheat oven to 350 °F. Cut off the corn silk hanging out of each ear. Place the un-shucked corn directly on the oven rack or on a cookie sheet. Roast for 30 minutes or until the corn is soft. Cut off both ends of the cooked corn, and remove the cob from the husks and silk.

Shucked: Place 1 to 4 shucked ears on heavy foil. Add flavorings and seasoning; then seal the foil. Place the packets on a baking sheet and cook at 425 °F for 20 minutes or until tender.

Fresh corn-on-the-cob is a summertime favorite, and you can cook it in a variety of ways. It's a delicious vegetable that can be enjoyed on its own or as a side dish to other foods. It is perfect for a barbecue, cookout, picnic, or for a summer meal treat. Enjoy!

(Sources: www.epicurious.com; www.startcooking.com; *www.fns.usda.gov; whatscookingamerica.net)*

Cent$ible Nutrition News from Sheridan County

Safe Handling of Foods

With summer and picnic season upon us many of us are grilling out, going on picnics, and camping. This is a great time to review safe handling of foods to prevent foodborne illness, or known to most of us as food poisoning. We sure don't want to ruin those summer activities with sickness.

By Sandy Koltiska
Cent$ible Nutrition Educator

There are four simple steps to Food Safety:

#1 Clean: Wash your hands with warm water and soap before and after handling food and after using the bathroom, changing diapers and handling pets. If soap and water is not available try using antibacterial wipes or hand sanitizer.

#2 Separate: Don't cross-contaminate. Cross-contamination is how bacteria can be spread. When handling raw meat, poultry, seafood and eggs, keep these foods and their juices away from ready-to-eat foods. Always start with a clean scene. Pack plenty of utensils, dishware and dish cloths if you are going on a picnic.

Never place cooked food from your grill on a plate that previously held raw meat.

#3 Cook: Food is safely cooked when it reaches a high enough internal temperature to kill the harmful bacteria that cause illness. To be sure bacteria are destroyed, cook fish, pork chops and steaks to 145 degrees F; ground beef to 155 degrees F; and poultry, stuffed meats, or precooked foods to 165 degrees F.

#4 Chill: Cold foods must be kept at 40 degrees F or lower to prevent bacterial growth. Cold temperatures slow the growth of harmful bacterial.

If eating take-out foods such as fried chicken or barbeque beef, you must eat these foods within two hours of pick-up or you must buy them ahead of time and chill them well before packing them into the cooler.

To be safe this summer, keep hot foods hot and cold foods cold. Wash, wash, wash…your hands, your utensils, AND your produce—even fruits like cantaloupe and watermelon.

Helping Wyoming Families Eat Better for Less

What is a 'Natural' Food?

By Kentz Willis
Nutrition and Food Safety Educator

What does 'natural' mean to you? Is corn natural? How about corn chips? Corn syrup? What if the corn was genetically modified/engineered (GMO/GE)? And finally, is natural food healthier?

Food marketing claims, such as natural, are cheap and effective methods to boost product sales. Natural remains a very popular claim, appearing on 14% of new products introduced in the US last year. Many consumers choose foods with claims such as natural in their effort to make healthful food choices.

So what does natural really mean? It depends on who you ask. Unlike the term 'organic', which is clearly defined and regulated by the USDA, natural does not have a standard definition pertaining to food claims. In fact, there are three federal agencies overseeing food and drink products that may be making natural claims, and they all have slightly different ideas on what it means to be natural.

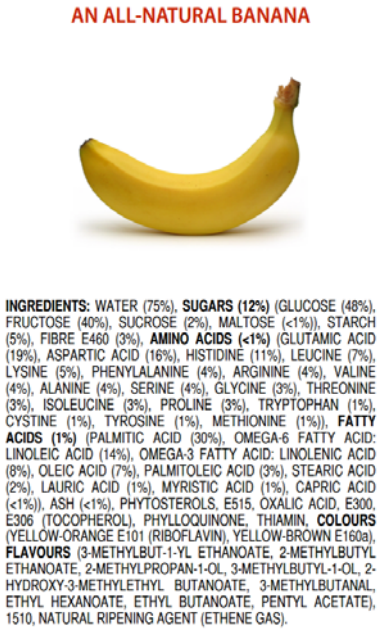
The FDA, which regulates most of our food supply, does not have a formal definition of natural. Their stance is that most foods have been processed to some degree and it is difficult to define a food product that is natural. The FDA has not objected to the use of the claim natural if the food does not contain added colors, artificial flavors, or synthetic substances.

The US Department of Agriculture (USDA) is slightly closer to a definition, stating that meat, poultry, and egg products labeled as 'natural' must be minimally processed and contain no artificial ingredients.

And finally the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), which regulates our alcoholic drinks. Similar to the FDA, the ATF doesn't define natural, but does list a few recommendations against additives or deviations from standard processing practices.

Pretty confusing, right? The take-home message here is that the natural claim doesn't tell you the whole story about the production and processing of a food. In fact, corn, corn chips, corn syrup, and GMO/GE corn can all be labeled natural under the current rules.

At this point you can probably guess the answer to the final question in my opening paragraph. Unfortunately, even if natural were more strictly defined it would be difficult to demonstrate that natural food = healthier food. In the wrong dose all natural substances can cause ill effects. Even water, which is essential for life, will cause death if we drink too much.



Many consumers are making efforts to eat healthfully and food claims such as natural can further confuse an already difficult decision. Stick with fresh, minimally processed foods and you shouldn't have to worry about the confusing food claims. For more information on healthful food choices visit www.choosemyplate.gov.

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Hay Quality & Livestock Needs

By Blaine Horn
Sustainable Management of Rangeland Resources Educator
Educator

Rangeland livestock producers know that winter rangeland forage usually does not contain enough crude protein to meet the needs of their beef cows or sheep ewes and often not enough energy, especially if the cows and ewes are lactating. Those producers that graze their livestock on rangeland over the winter and early spring will provide them a protein supplement in order to overcome the crude protein deficiency in the forage. Depending on the protein supplement it might also furnish enough additional energy to make up for any shortfalls in the forage. However, there are ranchers that feed their livestock hay in lieu of having them depend on rangeland forage during this period and for them it could be worthwhile to know what the quality of the hay is that they are feeding.

My reason for bringing this up is that the first cutting of alfalfa has been completed and most grass hay fields, if not all, have been harvested by the time you read this. The hay crop looks to be a good one in this region, at least as far as tonnage goes, so there should be a good supply of hay this year although the price may still be high due to drought conditions in other parts of the country. But will the quality of the hay be sufficient to meet the nutrient needs of the livestock it is to be fed to? You won't know without a forage quality test.

Many factors can impact the quality of hay, especially its crude protein content, some are: Maturity of the plants when the field was swathed; field fertility, in particular nitrogen for grasses (both annual and perennial); growing conditions during the transition from vegetative growth (all leaves) to reproductive growth (stem elongation and seed head development). The more mature the plants are when they are harvested the lower the quality of the hay will be. Low soil nitrogen will result in not only lower hay yields but also hay with a low crude protein content. Warm temperatures can result in the plants growing fast which will often result in a greater stem to leaf ratio whereas if temperatures are cool during this period the plants grow slower and as a result the stem to leaf ratio is lower. Leaves are what contain the nutrients livestock need not so much the stems. However, soil moisture during this period will also influence how fast the plants grow and resultant nutrient content. Needless to say, hay quality can vary greatly not only among fields but also from year to year.

Why would it be important that livestock producers know the quality of the hay they feed their critters?

Winter feeding costs are generally the greatest annual cost of production in range livestock operations. These costs are not just those associated with the feeding of harvested forages and supplements but also potential loss in income if livestock performance is compromised due to their nutrient needs not being met.

Cows and ewes deprived of adequate crude protein and energy could end up in low body condition (< 5 for cows and < 3 for ewes) by birthing which can result in them breeding back late or not at all. Fewer calves and lambs

due to open dams means less income and non-uniform calves and lambs can be harder to market.

Although usually not as costly, providing more crude protein and/or energy than a cow or ewe needs can potential reduce profits as well. Besides the extra cost of providing a higher quality feed than necessary, if cows or ewes are in too high a body condition (> 7 for cows and > 4 for ewes) at birthing they can have a difficult partition as well as breed back problems.

What are the crude protein and total digestible nutrient (TDN) requirements of beef cows and sheep ewes?

A beef cow requires 8% and 10% crude protein in her diet during late gestation and in early lactation, respectively, and a sheep ewe 9% and 15%. Thus, if they are fed hay during these production stages it needs to contain at least this level of crude protein otherwise a protein supplement would need to be furnished; an additional cost. To satisfy a beef cow's TDN needs during these production stages the hay would need to contain 53% and 58% and for a sheep ewe 53% and 60%, respectively.

What affect does plant maturity at haying time have on forage quality?

Alfalfa that is harvested for hay prior to full bloom will contain an adequate amount of crude protein and TDN to satisfy the needs of a beef cow and sheep ewe at all production stages. However, if it is put up at full bloom or later the TDN content of the hay might not be sufficient to meet their needs, especially if in early lactation.

Grasses generally do not contain as much crude protein as alfalfa or other legumes (sainfoin, clovers, etc.) but if they are harvested for hay by late bloom they will usually contain an adequate amount to meet the needs of a beef cow at all stages of production but possibly not a sheep ewe nursing twins. Whereas if the grass is not hayed until seed development then it might not contain enough crude protein to satisfy the needs of a cow or ewe in late gestation let alone in lactation and the TDN content could be insufficient as well.

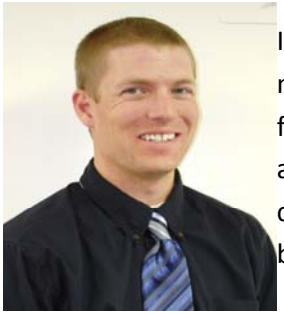
What forage quality analysis should be performed?

To determine the TDN content of a hay it needs to be analyzed for its Acid Detergent Fiber (ADF) content. If the hay is from alfalfa, smooth bromegrass, or a small cereal grain this analysis can be done by Near Infrared Spectrometry (NIRS). However, if the hay is from perennial grasses such as meadow brome or one of the wheatgrasses it would be best to have the ADF content determined via chemical analysis. A chemical analysis will usually cost more than a NIRS procedure but the results will be more reliable. The other quality components to have the hay analyzed for would be crude protein and minerals.

By knowing the quality of the hay to be fed your livestock a balanced ration can be formulated to meet their nutritional needs. Although there is a cost for forage quality analysis it is minor compared to the potential loss of income due to open dams and/or late birthers.

Many County Extension Offices have a forage probe you can borrow to sample your hay and information on how to properly take a sample as well as where to send them for analysis. We can also interpret forage/feed analysis results and provide suggestions on balancing rations.

How to texture soil and why it is so



By Brian Sebade
Sustainable Management of Rangeland Resources Educator

It is no secret that soil is one of the most important pieces for a successful garden, ranch, or farm. Soil acting as a critical piece is not a new concept as was succinctly expressed by Franklin D. Roosevelt, "The nation that destroys its soil destroys itself." While soils might not appear to be interesting, they are actually quite complex. Soils contain different chemical, physical, and biological components. These components are determined by the five soil forming factors (time, parent material, topography, climate, and vegetation).

Soil Particle Size Categories

To help synthesis and organize the physical structure of soils the U.S. Department of Agriculture developed a figure known as a soil triangle. The soil triangle separates soils into different groups based on the percentage of particle sizes within a particular soil. There are three general size categories for particles within a soil. These sizes are sand, silt, and clay. Sand is the largest particle size category ranging 2 to 0.05 mm in diameter, silt is the next largest at 0.05 to 0.002 mm in diameter, and clay is the smallest particle size at 0.002 to 0.0002 mm in size. The percentage of particle sizes within a soil is called the soil texture and is important information because each soil texture holds certain characteristics and properties. Sandy textured soils for example can hold less water compared to clay soils. However sandy soils generally provide more accessible water to plants than clay soils.

Why Care?

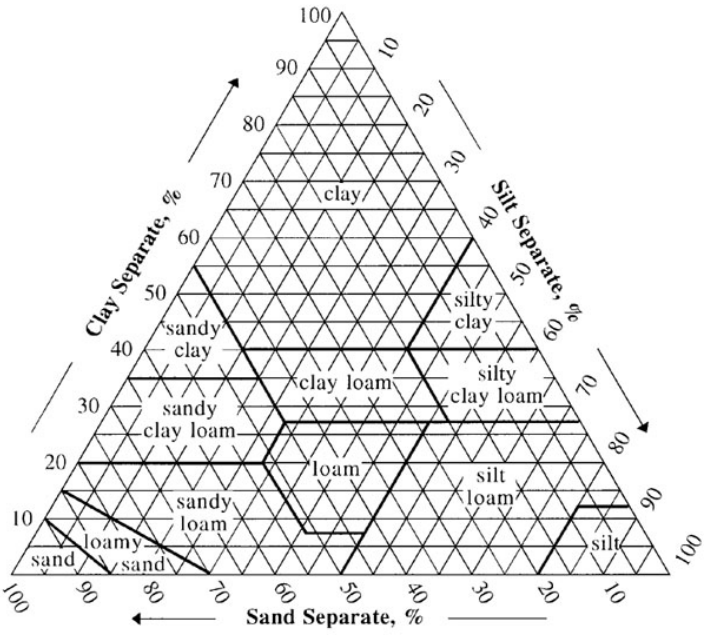
A good example for soil texture meaningfulness is comparing needle-and-thread grass, *Hesperostipa comata*, with green needlegrass, *Nassella viridula*. Both grasses are native to Wyoming and grow best during the early part of the growing season. While similar, needle-and-thread grass generally will only grow in sandy soils whereas green needlegrass generally occupies clay soils. If you have a bare hill side and want to seed native plants it would be important to know your soil texture and if your seed mix will flourish in that soil texture.

How to Determine Soil Texture

There are several ways to determine the texture of your soil. Most often we are concerned with the A horizon of the soil or the top soil layer. This layer of soil is located just below the litter and organic material on top of the soil.

One method is taking a soil sample and having it analyzed at a soil testing lab. This method will cost a little bit of money and wait time, but is the most accurate. You will most likely also get other information regarding the pH and nutrient levels of your soil. Local University of Wyoming Extension offices can direct you to the nearest lab.

A second method is using the web soil survey. A free program courtesy of Natural Resources Conservation Service. This is a quick online service, but only makes generalizations for a small specific area. This program uses electronic soil survey maps that allows the user to draw an area of interest to obtain soil texture and other information.



The soil texture Triangle from the USDA is an important tool to determine soil texture.

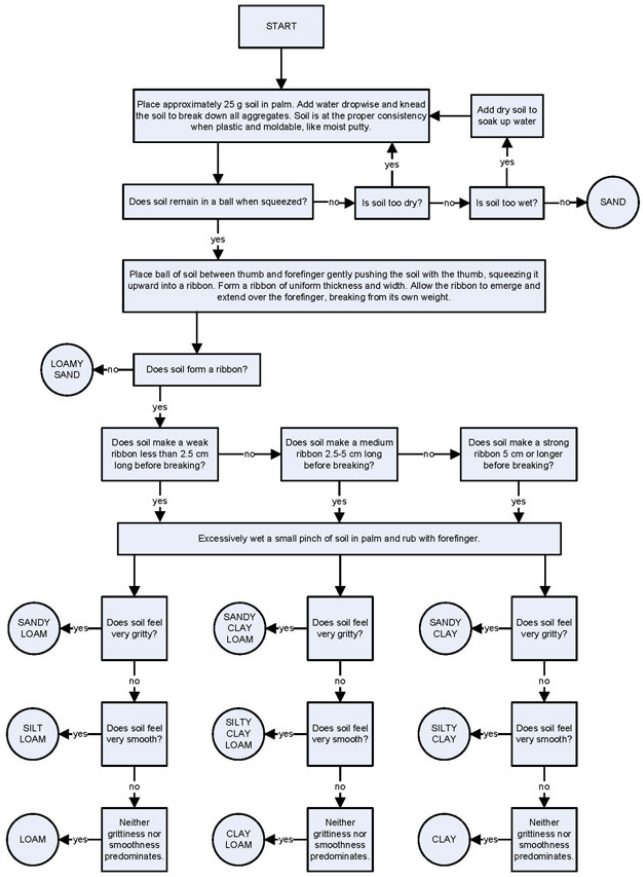
The particle sieve method is yet another method that can be used to determine soil texture. For this method the soil sample will need to be dried and broken apart. Then a set of sieves is used to separate the dry soil. Because silt and clay particles are so small the sieves will only accurately collect particles to 0.05 mm (remember sand particles are 2 – 0.05 mm). The remaining particles are then placed in a cylinder of water and dispersing agent. A mathematical relationship is used to calculate the percentage of clay and silt in the sample based on how fast the particles settle. Once separated and timed the percentage of each particle size within the total soil sample can be used with the soil texture triangle. The method is technical and takes practice to become proficient.

Squeezing the moist soil between the thumb and forefinger will create a ribbon to help figure out what soil texture you are dealing with.

The last method is the hand texturing method. The hand texturing method is quick and simple to use and only requires a small amount of water, a handful of soil, and a hand texturing guide. While not as accurate as sending a sample to the lab, with the right amount of training and practice, it can be a very reliable and useful method. The hand texturing guide is a product from the U.S. Department of Agriculture. To hand texture, mix and roll a small amount of soil and water into a ball. Once wetted all the way through squeeze the soil between your thumb and fore finger to make a ribbon. The length and grittiness of the ribbon will determine the soil texture. For sandy soils the individual sand particles can be seen when wetted in the palm of the hand.

Final thoughts

Soils may not get a lot of praised aesthetic reviews, serves a crucial function in the natural world we know. Understanding the soil texture at your property will provide a solid base for making smart decisions related to planting, watering, and plant variety selection. Hopefully, it can even provide you with money savings strategies over the long and short term management of your property.



A hand texturing guide can be used for the hand texture method. This table is produced by the USDA.

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Northeast Extension Connection

A quarterly newsletter from Campbell, Crook, Johnson, Sheridan and Weston County Extension

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Crook County *307-283-1192: Brian Sebade - Sustainable Management of Rangeland Resources; Sara Fleenor - 4-H/Youth; Trish Peña - Cent$ible Nutrition*

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Sheridan County *307-674-2980: Scott Hininger - Profitable and Sustainable Agriculture; Kentz Willis - Nutrition and Food Safety; Sandra Koltiska - Cent$ible Nutrition; Elizabeth Shaffer - 4-H/Youth*

Weston County *307-746-3531: Vicki Hayman - Nutrition & Food Safety; Stacy Madden - 4-H/Youth; Trish Peña - Cent$ible Nutrition*

Issued in furtherance of extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Glen Whipple, director, University of Wyoming Extension, University of Wyoming, Laramie, Wyoming 82071.