



K-STATE

Research and Extension

Walnut Creek District

District Newsletter

June, 2018

Message of the Month

Heading into the summer months, means swimming, harvest, and of course fair. Don't forget to come spend time at our County Fairs. Not only is it about supporting 4-Hers, it is an opportunity to volunteer, and even enter an exhibit in Open Class.

Lane County Fair
Ness County Fair
Rush County Fair

July 18-22, 2018
July 225-28, 2018
August 1-4, 2018



LANE COUNTY
144 S Lane, Courthouse
PO Box 487
Dighton, KS 67839
Office: 620-397-2806
Toll Free: 866-755-1654
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Erin Petersilie
Family &
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NESS COUNTY
503 S Pennsylvania Ave
Ness City, KS 67560
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Robyn Deines
4H & Youth

Chris Long
Ag & Plant Sciences

RUSH COUNTY
702 Main St
PO Box 70
LaCrosse, KS 67548
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Toll Free: 800-460-9079
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Jared Petersilie
Ag & Livestock

Water Questions

by Jared Petersilie, Ext. Agent, Walnut Creek Dist; Justin W. Waggoner, beef systems specialist, Garden City

Most producers fully understand the importance of water. Water is an essential nutrient for all animals and after all, providing an adequate supply of clean, fresh, water is the cornerstone of animal husbandry. There are very few things that compare to the feeling of finding thirsty cows grouped around a dry tank on hot day. Water is important, and in situations where the water supply is limited or we are forced to haul water, one of the first questions we find ourselves asking is “how much water do those cows need”?

The old rule of thumb is that **cattle** should consume 1 to 2 gallons of water per 100 lbs. of bodyweight. Accurately determining the amount of water cows will voluntarily consume is difficult and is influenced by several factors (ambient temperature, moisture and salt content of the diet, body weight, lac-

tation etc.). Water consumption increases linearly as ambient temperature increases above 40° Fahrenheit such that cows require an additional gallon of water for every 10 degree increase in temperature. Additionally, lactation also directly increases the amount of water required by beef cows. The table below summarizes the daily water requirements of beef cows of several different body weights, milk production levels and ambient temperatures (Adapted from Spencer, 2016).

	Average Daily Temperature, °F			
		40	65	90
Cow weight, lb.	Milk Production, lb./d	Gallons of Water/day		
1100	0	8.2	10.8	13.4
	10	10.5	13.1	15.7
	25	12.8	15.4	17.9
1300	0	9.2	11.8	14.3
	10	12.2	14.8	17.4
	25	14.5	17.1	19.7
1500	0	10.2	12.7	15.3
	10	14.0	16.5	19.1
	25	16.3	18.8	21.4

While **goats** require less water than cattle, they do need water and require additional supplies when lactating or coping with hot weather. A 110-pound goat will require 1 to 3 gallons of water per day, depending upon diet, intake, and weather -- toward the lower range in winter and the upper range in the hottest days of summer. A lactating goat will require an additional 1 quart of water for every 1 pint of milk produced. If a goat is producing 5 pints of milk at peak lactation while raising twins, 2.5 gallons of water are required each day. If goats are eating green material, a substantial part of their water re-

quirement can be met by water contained in the plant material. However, if dry feed such as hay is consumed, water must be supplied to meet the requirement.

Water should be kept clean to encourage intake. This usually involves regular cleaning of the waterer. It is important that the area around the waterer not be muddy as this environment can spread foot rot and internal parasites. Placing some rock or gravel around the waterer can help keep feet dry and reduce disease problems. Water cleanliness is especially important for bucks on high-grain diets. Their water needs to be shaded in summer and warm in the winter to encourage intake and reduce the risk of urinary calculi.

A mature, idle **horse** (500 kg) will require between 10 and 12 gallons of water per day, depending on environmental and/or physiological conditions.

Pregnant mares require about 10 percent more water than nonpregnant mares. Lactating mares require 50 to 70 percent additional water to replace the water used in milk production. The water requirement for horses subjected to hard work will double due to water lost through sweat and respiration. Increases in ambient temperature will also cause the horse's water requirement to double.

Before and during prolonged exercise, horses should be encouraged to consume as much water as possible to prevent dehydration. Following exercise, horses should be cooled down before drinking or have free access to water. Water consumed in large amounts by a hot horse after exercise can lead to colic, laminitis, or founder.

Another question that often comes up related to water is “how much water will my tank hold?” The capacity of circular stock tank may be calculated using the equation below.

Circular tank capacity, gallons =

$[3.14 \times \text{radius}^2 \text{ (inches)} \times \text{depth (inches)}] / 231$

Using this formula a 12 foot stock tank with 24 inch sides would hold 1691 gallons of water, which is enough water for approximately 85, 1300 lb., lactating beef cows, producing 25 lbs. of milk/day on 90°F day.

The third question that often follows is how much tank access is required for a given number of cows. A minimum of 15 inches of linear trough space per head is recommended and at least 10% of the animals in the pasture should be able to drink from the tank at once if the distance to the tank is relatively close. In a larger pasture, where cattle are traveling longer distances to water, providing linear trough space for 30% of the animals in the pasture is suggested to allow more animals to access the tank at once and avoid over-

crowding. (Pfof et al., 2000). The circumference of a round stock tank may be calculated using the equation below.

Circular tank circumference inches = 3.14 x diameter (inches)

A 12 foot diameter round stock tank (144 inches) provides 452 linear inches of drinking space, and would provide drinking space for a maximum of 30 head (15 inches/head).

As we can see by working through these calculations, the amount of linear drinking space provided by a tank, rather than capacity or volume of the tank, often determines the number of tanks required for a pasture or grazing site.

Water is important. The daily water requirements of beef cows, goats, and horses in this article are estimates and water consumption varies greatly during the summer months when the temperatures exceed 90° Fahrenheit. Therefore, these recommendations are minimum guidelines. There are a number of excellent resources available on the web, regarding livestock water requirements and water site development

References

Spencer, C., Lalman D. Rolf, M., Richards, C. 2016, Estimating water requirements for beef cows. Kansas State University MF3303. <https://www.bookstore.ksre.ksu.edu/pubs/MF3303.pdf>

Pfof, D., Gerrish J, Davis M., Kennedy M., 2000. Pumps and watering systems for managed beef grazing. University of Missouri-Columbia Extension Guide EQ380.

Kansas Range Short and Midgrass School

Ringneck Ranch
Tipton, Kansas
August 7-9, 2018

K-State Ranching Summit

KSU Alumni Association
Manhattan, Kansas
August 15, 2018

KSU Stocker Field Day

KSU Stocker Unit
Manhattan, Kansas
September 20, 2018

ASI Family and Friends Reunion

Stanley Stout Center
Manhattan, Kansas
October 12, 2018





When are Baked Goods Done?



Gently touch the top and it should bounce back



Use a timer to follow recommended recipe baking time



Use an oven thermometer to check oven accuracy



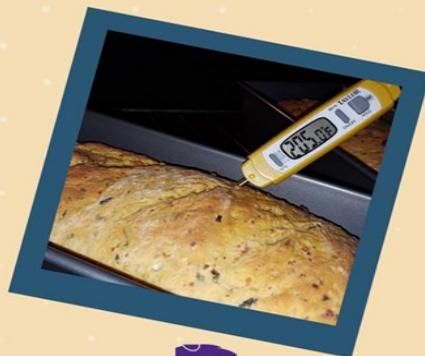
Insert a toothpick or skewer into the middle to check for stickiness



Take the Temperature!

Suggested Final Temperatures

- Layer cakes - 205-210°F
- Pound cake - 210°F
- Jelly roll cakes - 190-195°F
- Muffins - 210°F
- Quick bread - 210°F
- Yeast bread - 195-210°F
- Bundt cake - 212°F
- Yeast rolls - 190-195°F




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Medicare Basics

If you are looking to go on to Medicare in the next year because you are turning 65, retirement, or because you will be entering your 25th month of disability, this class is for you! We will be going over the different parts of Medicare, how you enroll, and making sure you make the right decisions at the right time. All programs will begin at 7:00 p.m. and will need 6 participants to hold the class.

Rush County Extension	Thursday, August 16
Lane County Courthouse	Tuesday, August 21
Ness County 4-H Building	Thursday, August 23

Using Natural Pectin in Fruit Pie

Some fruit pie recipes need help to get the filling just right. One solution is to add a peeled, grated, and squeezed dry Granny Smith apple which is full of natural pectin.

Apples contain high amounts of high-methoxyl pectin and makes a great gel. In combination with two tablespoons of instant tapioca, the gel should have a pudding consistency. Crush some of the other fruit and combine with the grated apple. This helps release the natural pectin within the fruit cell walls to achieve a good gel.



Summer Ag Adventure Challenge

Posted on May 11, 2018 by Karen Blakeslee

As school winds down, it's time to plan activities for kids. So help them learn about agriculture through the Kansas State Fair Summer Ag Adventure Challenge!

There are 12 agriculture adventure stops listed on the Ag Adventure sheet. You choose **6** of these stops to visit between May 1 and August 15, 2018. You can mail, email or bring your completed adventure sheet to the Kansas State Fair. All adventure sheets turned in by August 15 will receive a KSF Agriculture Fun Pack. Your name will also be put into a drawing for a free Kids Club ticket package to attend the 2018 Kansas State Fair.

Download the [instructions and activity sheet](#) to participate.

Find more information at <https://www.kansasstatefair.com>

Play Is Important

Play is a fundamental need of all children. It helps children obtain skills needed later in life. It can be divided into three different groups; object play, locomotor play, and social play. Let's take a little closer look at all three of these areas and how they are critical in development and help the brain learn survival skills.

OBJECT PLAY

Object play provides children with the opportunity to explore. Children will play with their toys and learn about the different characteristics. They will play with the toys and learn how to manipulate or use the toys in many different ways. Children are often seen repeating their actions and talking to themselves about what they are doing and playing with. As much as we love to help a struggling child with a toy, we need to give them space and time to let them problem solve all by themselves.

LOCOMOTOR PLAY

This kind of play is especially important. This is one of those areas that sometimes gets over looked and is as important as any other skill. Movement is an integrated complex series of multiple systems and is not automatic, rather it is learned. They should be encouraged to run, throw, crawl, climb, swing, and so much more! Locomotor play is critical in learning about body positioning in space, personal space, and coordination.

SOCIAL PLAY

Social play is the interaction between children. This act of working with others is so important in the development of children. A child can pretend to take their friends on trips around the world, manage a bakery, run a store, teach other kids, and so many other unbelievably important experiences. This gives the children the authority to be in charge. They have to negotiate, problem solve, and learn to interact with others in positive ways. Many of us try to help our children by creating organized play groups and signing them up for sports, but the reality is that children just need to play and navigate these social interactions on their own. They need to be able to engage their creativity to develop an emotional connection with their play mates as well as manage the social interactions. Children need to play to learn, it is the foundation of all learning.

Now that your children are home for the summer, or out of school, Here are some suggestions that I have found to be important for quality play:

1. Let children create their own toys and games. Boxes, Blankets and recycled materials are great for Pretend Play
2. Allow and promote movement daily. Children should be encouraged to GO OUTSIDE and PLAY
3. Read, act out, and create stories together with your children., this promotes

emotional growth

4. Discourage excess TV and video games, set a daily time limit and stick to it!
5. Allow children time to explore and problem solve.
6. Have fun, laugh, and Find time to Play with your child!
7. Play is second only to being nourished, protected, and loved. It is a basic ingredient of physical, intellectual, social and emotional growth”

This summer look for opportunities to Play... a couple suggestions for June are participate in the Story Walk in your community, and sign your kids up for Summer Daycamps.

Come out and support the Walnut Creek District 4-H members, during your local county fair:

Lane County Fair July 18-21

Ness County Fair July 25-28

Rush County Fair Aug 1-4



4-H Teaches Life Skills

“4H is a community of young people across America who are learning leadership, citizenship and life skills.”

In 4 H, we believe in the power of young people. We see that every child has valuable strengths and real influence to improve the world around us. We are America’s largest youth development organization—empowering nearly six million young people across the U.S. with the skills to lead for a lifetime.

4 H is delivered by Cooperative Extensions across the nation that provides experiences where young people learn by doing. Kids complete hands-on projects in areas like health, science, agriculture and citizenship, in a positive environment where they receive guidance from adult mentors and are encouraged to take on proactive leadership roles. Kids experience 4 H in every county and parish in the country—through in-school and after-school programs, school and community clubs and 4 H camps.

4 H health, nutrition, and fitness programs help youth understand the importance of eating right, physical fitness, being active and practicing good hygiene. Mastering these basic health principles place young people on the right track to managing their long-

term health.

4 H science programs are available through local clubs, schools and grant-funded programs. Focus areas for 4 H science programs include robotics, rocketry, environmental science, agri-science and veterinary science. The livestock projects are an excellent way to learn about raising, caring for and managing animals. Begin with a calf, piglet or chick and build your own heard or flock as you learn about the livestock industry.

4 H citizenship programs empower young people to be well-informed citizens who are actively engaged in their communities and the world. Youth learn about civic affairs, build decision-making skills and develop a sense of understanding and confidence in relating and connecting to other people. Community Service is a large part of 4H as we pledge our hands to larger service for our club, our community, our country and our world. Clubs and groups are always looking for ways that we can give back to the community, if you have a suggestion, let the local Extension Office know.

As Spring and Summer are upon us, there are several opportunities already on the calendar that your youth can participate in to get a sample of what 4H is all about. Within the next couple of weeks the Lacrosse After School program will kick off the 4 week session of Cultural Foods and Reading, this is available for ALL youth Kindergarten through 5th grade. Also if you are looking for Camping opportunities for your kiddos this summer, we have a few options Day Camp, Overnight Tent Camping at Cedar Bluff and a 3 Night/4 Day adventure at Rock Springs. Summer camp can be a time for experiencing nature and the outdoors, making new friends, and learning life skills. Summer camp is more than just a vacation. Campers learn self-confidence, cooperation with others, and how to live in different communities. Camping teaches life lessons that contribute to children adjusting into their adult years.

For more information how you can Empower your children check with your local Extension Office.



County Fair 4-H Entry Deadlines

Lane - Friday, July 6th

Ness - Friday, July 13th

Rush - Friday, July 13th

NOON and NO LATER!!!

**Absolutely NO Excuses and NO
Entries taken after 12:01pm**

How Healthy is My Tree?

We have had a great deal of tree damage this year due to a lack of moisture and warm temperatures interspersed with sharp drops throughout the spring. This has left many in the area wondering how healthy their trees are and how can they determine the health of the tree in their landscape?



One of the most important clues in determining the health of your trees is looking at the amount of new growth that tree has produced. A healthy tree should have a minimum of 4 to 6 inches of new growth each year. Check branches with the tips in the open and not shaded by the tree itself. Anything less than 4 inches on the majority of branches suggests the tree is under a great deal of stress.

Some might also be asking, how do you tell where the new growth stops? The best answer for this is to look for a color change in the stem. New growth is often greener than that from the previous year. There is also often an area of what looks like compressed growth where growth transitions from one year to the next.

Lastly, and possibly the toughest to notice, look at leaf attachment. Leaves are only produced on current seasons' growth. Therefore, new growth stops where leaves are no longer attached directly to the twig but to side branches. However, pay attention as leaves may appear to be attached directly to last year's growth but are actually borne on short spurs. If you look closely, you can tell the difference.

Keep in mind, all these clues tell you is whether a tree is under stress or not. It does not tell you what is causing poor growth. This year, the most common cause by far is environmental stress caused by the warm and dry winter and spring.

Tree stress is cumulative. In other words, trees may not have completely recovered from stressful conditions that occurred several years ago. The accumulating stress may have damaged root systems. In some cases, root systems were damaged enough that those trees may struggle as we enter summer. Though the roots were able to keep up with moisture demands during the cooler spring weather, they may not be able to, as temperatures rise. Such trees may suddenly collapse and die or loose branches they can no longer support. If possible, water to a depth of 12 inches every couple of weeks that we do not receive rain in order to avoid further stress.

Stress can also bring on insects or disease, with insect damage occurring more often in our area. Identification of the problem will help in determining the treatment options, however regular watering and reduction in stress to the trees can prevent the majority of the issues that might arise.

Helping Roundup (Glyphosate) Products Work

Though glyphosate products (Roundup, Killzall, Pronto Weed & Grass Killer) are non-selective and will kill most plants the spray contacts, these herbicides are not taken up by the roots of nearby desirable plants. This is because the active ingredient is neutralized when it contacts the soil due to being tightly bound to soil particles. Unfortunately, this binding effect can also take place in hard water that is high in magnesium and calcium, which reduces its effectiveness. To avoid this, mix ammonium sulfate with your spray water before adding the glyphosate product. The ammonium sulfate ions tie up the calcium and magnesium ions so that the glyphosate remains at full strength. Also some of the glyphosate will form a compound with the ammonium that weeds will more readily absorb, thus increasing effectiveness.

Note that this binding effect takes place in hard to very hard water, above 7 grains or above 120 ppm. Adding ammonium sulfate to softer water will not help. So if you have your water tested and find you have hard water, how much ammonium sulfate should you add? As a general rule, add 8.5 pounds per 100 gallons. This would equal about 1.4 ounces per gallon or four tablespoons per gallon.



Walnut Creek Extension District
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