



The Wisest Pursuit



MARSHALL COUNTY RESEARCH EXTENSION

January/February 2016

Important Dates to Remember

January 11: Burn School

January 31: Women in Ag Series Begins

January 18: Conservation Banquet

February 11: Beef Weigh In

Please see yellow pages for more agricultural related programming

Women in Agriculture

WIA classes will be held each Tuesday afternoon from **12:30 to 5:30 P.M.**, beginning **January 31, 2017** and continuing through March 7, 2017. Classes will be held at Marysville City Hall, 209 N 8th St, Marysville, KS.

Women Involved in Agriculture is a six-session course for women with an interest in agriculture business management. Topics to be covered include: True Colors (personality profile), Financial

Management, FSA Programs, Marketing, Quicken, Leasing, Estate Planning, and Communication and Family Dynamics. There is an enrollment fee that covers all class materials and supper at each session.

Space is limited to 25 participants. Women interested in attending may sign up by emailing anastasia@ksu.edu, or by calling the Extension Office 785-562-3531

Range Management Workshop/Burn School

On January 11 there will be a Prescribed Burning Workshop at the Helvering Center in Marysville beginning at 9:00 A.M.- 3:00 P.M. Lunch and materials are included in the cost of \$20.

These workshops are conducted with the cooperation and assistance of several agencies including KSRE, FSA, NRCS, KDWPT, and the National Weather Service. They are designed to help with the understanding the nature and

behavior of fire. Some of the topics that will be covered are reasons for burning, wildlife and prescribed burning, local and state regulations, fire weather, safety, liability, use of burn contractors, planning and conducting a burn. The Flint Hills Smoke Management Plan will be addressed. The workshop is designed to either prepare the participants to begin using prescribed burning or to update their knowledge and abilities.

Storing Potatoes in Cold Temperatures

Potatoes stored below 40 degrees F will not sprout and will remain firm for long periods. However, such storage will often lead to starches being converted to sugars, which will give tubers

an undesirable sweet taste. Placing potatoes at room temperature for 2 to 3 days will allow sugars to be converted back to starches and remove the objectionable taste.

Cold Stress: What is Cold to a Cow?

As we all know there is no typical weather pattern in Kansas. We experienced a mild fall this year and thus far winter has been interesting with warm temperatures followed by rain then brutally cold and windy days. The downside is that we don't know what might happen in the New Year, as we approach what are typically the coldest months of the year. Most cattle producers know and appreciate that cold weather increases nutrient requirements.

However, the obvious questions that come to mind are "What is cold to cow?" and "What increases (energy, protein etc.) and by how much?". Cattle are most comfortable within the thermonuetral zone when temperatures are neither too warm nor too cold. During the winter months cattle experience cold stress anytime the effective ambient temperature, which takes into account wind chill, humidity, etc., drops below the lower critical temperature. The lower critical temperature is influenced by both environmental and animal factors including hair coat and tissue insulation (body condition). The table lists the estimated lower critical temperatures of cattle in good body condition with different hair coats. In wet conditions, cattle can begin experiencing cold stress at 59°F, which would be a relatively mild winter day. However, if cattle have time to develop a sufficient winter coat the estimated lower critical temperature under dry conditions is 18°F.

Estimated lower critical temperatures for beef cattle	
Coat Condition	Critical Temperature
Wet or Summer Coat	59°F
Dry Fall Coat	45°F
Dry Winter Coat	32°F
Dry Heavy Winter Coat	18°F

Cold stress increases maintenance energy requirements but does not impact protein, mineral, or vitamin requirements. The general rule of thumb (for a cow in good body condition, BCS = 5 or greater) is to increase the energy density of the ration by 1% for each degree (Fahrenheit) below the lower critical temperature. The classic response to cold stress in confinement situations is an increase in voluntary intake. However, it has been documented that grazing beef cows may spend less time grazing as temperatures decline below freezing, which reduces forage intake (Adams et al., 1986) and makes the challenge of meeting the cow's nutrient requirements even greater. In many cases, feeding a greater amount of low-quality hay may not provide sufficient energy. Therefore, providing additional energy by feeding a relatively higher-quality hay or grain may be required. More information on cold stress and nutrition may be found in "Beef Cow Nutrition Guide" available at the extension office.

Plants Recommended for Kansas

If you have had trouble finding a listing of plants recommended for Kansas, visit our web page devoted to this topic. We have links to a wide variety of plants including annual flowers, perennial flowers (including breakouts for iris and daylilies), fruit, vegetables, turfgrass, low-

maintenance roses and tree recommendations that are broken out by areas of the state. We also list recommended low water use plants. You can find this page at <http://www.hfrr.ksu.edu/p.aspx?tabid=731>

The Veterinary Feed Directive

What Producers Should Know about Antimicrobial Use in Feed

The use of antibiotics in feed for food-producing animals has come under scrutiny over the past few years. This is largely due to growing issues with bacteria developing resistance to antibiotics that are important in treating human infections. Several classes of antibiotics are used to treat disease in both people and animals. To ensure judicious use of shared-use antimicrobials in feed, the U.S. Food and Drug Administration (FDA) has placed these drugs under veterinary supervision. Effective January 1, 2017, medically important feed-grade antimicrobial drugs will no longer be labeled for growth promotion. Many antibiotics now available over the counter for use in feed will require authorization from a veterinarian in the form of a veterinary feed directive (VFD).

Definition

A veterinary feed directive (VFD) is a written statement authorizing the use of a medically important antibiotic in or on the feed. (This includes milk and milk replacer.) The order contains contact information for the veterinarian and client, location of the animals, order approval date, expiration date, name of the drug, type and number of animals fed, indication for the drug, level of the drug in the feed, any withdrawal or special instructions, number of refills if ordered, proper statement indicating no off-label use, and veterinarian's signature.

Veterinary Client Patient Relationship (VCPR)

To purchase feed containing a medically important antibiotic, the producer must obtain a veterinary feed directive from a veterinarian licensed to practice in the state in which the animals to be fed reside. The producer and veterinarian must have an ongoing working relationship, referred to as a Veterinary Client Patient Relationship (VCPR). To initiate a VCPR, the veterinarian must be familiar with the producer's operation, assume responsibility for making medical decisions about the animals involved, and have made medically timely visits to the premise. The producer agrees to follow the veterinarian's directions, and the veterinarian must be available for follow up. Through this agreement, the local veterinarian acts as the producer's partner and guide during the transition.

VFD Drugs

VFD drugs are antibiotics intended for use in or on animal feed that require supervision of a licensed veterinarian. The most common drugs affected are the tetracyclines (chlortetracycline, oxytetracycline), sulfonamides, tylosin, neomycin, and virginiamycin. The classes of drugs not affected are the ionophores, babermycins, bacitracin, tiamulin, and coccidiosis treatments (such as Decox and Corid). The producer must obtain a VFD if drugs not affected by the rule are fed in combination with a VFD drug (Rumensin/Tylan). VFD drugs can only be used under the specific FDA approved label directions, which state the indication (treatment or control of a disease), dose (the amount fed each day), and duration (days the animals are fed the drug). Producers should understand that only approved combinations of drugs can be fed. Extra label use of feed medication is not permitted under any circumstances. Veterinarians can only issue a VFD for labeled directions.

Expiration Date and Duration

The veterinary feed directive includes an expiration date. The expiration date is not the same as duration of use, which is the period of time during which the animals should be fed the VFD drug for the label indication. An example of this is feeding Aureomycin at 10 mg/lb body weight (dose) for not more than 5 days (duration) to treat bacterial pneumonia in calves (indication). The expiration is the last day of the authorization to feed a VFD. The FDA has set the maximum expiration period on a veterinary feed directive at six months. Some VFD medications expire in a much shorter time. If there is VFD feed on hand past the expiration date, the producer must obtain a new order to continue to feed it legally.

Record Keeping

The veterinarian makes three copies of the order, keeping the original and providing a copy to both the feed distributor and the producer. The producer may receive the document in hard copy or electronic form and must keep the order on file for 2 years from the date issued. The document must be provided on request if an FDA inspection occurs.

Conservation Trees from the Kansas Forest Service

The Kansas Forest Service offers low-cost tree and shrub seedlings for use in conservation plantings. Plants are one to two years old and sizes vary from 5 to 18 inches, depending on species. Orders are accepted from now through the first full week in May each year, but order early to insure receiving the items you want.

Orders are shipped from the second week of March through May. Approved uses for these plants include windbreaks, wood lots, riparian plantings,

wildlife habitat, and Christmas trees. They may not be used for landscape (ornamental) plantings or grown for resale.

All items are sold in units. Each single species unit consists of 25 plants. For example, a unit of Eastern red cedar has 25 trees per unit. Though a single species unit is most commonly purchased, four special bundles are also available. If you want to order, come into the office and pick up a form.

2016 Marshall County Soybean Plot Yield Results

I am pleased to announce the yield results of the 2016 Marshall County No-Till Soybean Plot. All of the soybeans planted were glyphosate resistant soybean varieties and were around the same maturity. Our cooperators for the soybean demonstration plots were Madison and Sheldon Voet and was located north of Home.

The soybean plot was planted on June 5, 2016, and was harvested on October 28. The plot had a seeding rate of 160,000 seeds per acre with a Kinze planter in 15" rows after soybeans. The starter fertilizer consisted of 11-52-0, potash, granular ammonia sulfate, boron, and zinc. Prior to planting, there was a "burndown" application of Sonic, Dual, Roundup, 2,4-D, and Weatherguard and one post-emergence herbicide treatment of Leivity, Roundup, and Weatherguard. We had 12 different soybean varieties this year; all of which were relatively disease and pest free.

The inserted tables has the yield results from the 2016 Marshall County Soybean Variety and Population Plots. The soybean variety plot averaged 47.9 bushels per acre, which is about 10 bushels per acre higher than last year's soybean plot. The plot had a range in yields from bushels per acre 43.98 to 54.42 bushels per acre. These average yields are adjusted for field variation. The soybean population plot showed that 120,000 seeds/acre yielded the best compared to the other populations.

Some people may be wondering how to read the yields in the table. The next to the last column is the

yield adjusted to the standard moisture for soybeans, which is 13%. The last column takes the yields adjusted for moisture, and adjusts it for field variation. Field variation is measured by using a check variety at different locations in the field because the soil may change within a field. By adjusting for field variation, this allows a person to compare one variety at one location in the field to another variety in the same field.

There are many people to thank for helping make the soybean demonstration plot a success. They are: Madison and Sheldon Voet for sponsoring the land, labor, crop inputs, and equipment; the seed companies for sponsoring the seed; George Bauer of Mycogen Seeds for using his generator, weigh wagon, and equipment to test the soybeans moisture and test weight.

It's important to note that the Marshall County Soybean Demonstration Plot results are not replicated like the Kansas State University Experiment Fields and Stations. Yield data is more accurate the more times varieties are planted. So, use the yield information to get ideas of varieties you like that performed well in Marshall County, and then look at the 2016 KSU Kansas Crop Performance Books.

We will be having a fall crops plot again next year. If there is a seed company that would like to participate in our fall crop plots, please contact me at (785) 562-3531, or email anastasia@ksu.edu.

Marshall County Soybean Variety Test Plot

Harvested on 10/28/2016

By: Madison & Sheldon Voet, and Anastasia Johnson, County Extension Agent

	Maturity	Gross Weight	Test Weight	Moisture %	Actual Yield (13%)	Adjusted for Field Variation
Check: Mycogen 5N385R2	3.8	520	56.6	13.3	52.66	Check Avg: 47.79
Hoegemier 3939NR	3.9	530	57.9	13.6	53.49	53.60
Mycogen 5N431R2	4.3	540	56.5	13.9	54.31	54.42
Stine 41RH22 *NT	4.1	478	57.4	13.0	48.45	48.55
Check: Mycogen 5N385R2	3.8	420	58.0	12.7	42.72	Check Avg: 47.79
Producers 4104NSR2	4.1	434	57.3	12.1	44.33	47.65
LG C4322R2	4.3	430	57.8	11.9	44.02	47.31
Asgrow AG3432	3.4	460	57.6	12.9	46.32	49.78
NK S38W4	3.8	460	56.5	13.8	45.84	49.27
Check: Mycogen 5N385R2	3.8	464	56.6	13.4	46.21	Check Avg: 47.79
Mycogen 5N387R2	3.8	438	56.8	12.5	44.07	43.98
LG C3989R2	3.9	508	56.9	12.4	51.04	50.94
Ohlde 0404RS2	4.0	488	56.1	13.4	48.48	48.37
Producers 3801NR2	3.8	474	57.5	12.9	47.23	47.14
Check: Mycogen 5N385R2	3.8	498	56.4	13.0	49.57	Check Avg: 47.79
Average:			57.06	12.99	47.92	

*NT- non treated seed

Marshall County Soybean Population Test Plot

Harvested on 10/28/2016

By: Madison & Sheldon Voet, and Anastasia Johnson, County Extension Agent

	Gross Weight	Test Weight	Moisture %	Actual Yield (13%)
Population: 120,000 /acre	840	56.6	11.8	42.06
Population: 160,000 /acre	734	56.9	11.4	36.92
Population: 190,000 /acre	720	56.2	11.6	36.13
Population: 90,000 /acre	574	56.4	11.6	28.80

Alfalfa weevils: What are they up to during the winter?

Many people assume nothing is going on with the alfalfa weevil during the winter months, or maybe that any eggs present will die during cold weather. That is not the case. Alfalfa weevils are cool-weather insects. Adults lay eggs in alfalfa fields in the fall or even the winter. Most of these eggs survive the winter, and continue to develop at temperatures above 48°F.

Eggs hatch and larvae emerge in the spring after accumulating enough degree days or thermal units. Alfalfa weevil adults also lay eggs in the spring, but in many cases the first larvae to emerge are from eggs that were laid in the fall and overwintered.

Early scouting for alfalfa weevil

Scouting for alfalfa weevil larvae should start after plants break dormancy. A degree day or thermal unit accumulation system can be used to predict when to initiate scouting. Insect development is controlled by temperature. This can be used to help manage these pests. Weevil activity has been tracked in Kansas for the past few years and has been used to generate recommendations (see table below).

Approximate degree days required for alfalfa weevil development		
Degree Days or Thermal Units	Stage	Importance
25–300	Eggs develop and hatch	In stems
301–450	1st and 2nd instars	Leaf pinholing – start sampling
450–600	2nd and 3rd instars	Defoliation
600–750	3rd and 4th instars	Defoliation
750+	Pupa to adult	Adults – some feeding – oversummering

Approximate degree days required for alfalfa weevil development

Because it is impossible to determine whether eggs were laid in the fall, winter, or spring, the degree day model may vary considerably, but it is useful for indicating when to start a scouting program. The base temperature for alfalfa weevils, or the temperature below which there is no development, is approximately 48°F. Every day after oviposition that the temperature exceeds 48°F, the eggs mature and get closer to hatching. Hatching usually occurs after about 300 degree days. In Kansas, scouting for the presence of eggs and the first signs of larvae should start after the accumulation of about 180 degree days from January 1.

To calculate a degree day, record the daily high temperature anytime it exceeds 48°F. For example, if there is only one day in January that the temperature exceeded 48°F, take that temperature and add the lowest temperature for that day, or 48°F, whichever is higher. Then divide by 2 to calculate the average temperature for that day. Next, subtract 48°F.

As an example, say there was one day in January when the high temperature was 60°F and the low was 35°F. You would use 48°F as the default value for the low instead of 35°F. The calculation in this case would be:

$$[(60 + 48)/2] - 48 = 54 - 48 = 6 \text{ degree days (or weevil development units)}$$

Continue recording and summing degree days until you have accumulated 150 to 180. That is when to start scouting alfalfa fields because the first eggs will start hatching soon. The location where the daily temperature is recorded is probably not exactly the same as where weevils are developing, so the model may be off a little, but it can save time by alerting you to when eggs should start hatching.

Do not be too quick to treat for alfalfa weevil. Wait until the field reaches the treatment threshold. Treating too early is not only unnecessary, it can also have detrimental effects by killing beneficial insects.

Other early spring alfalfa insects

The next insect to start watching for would probably be pea aphids. They can also start relatively early in the spring, and can be a problem on first-year stands. If weevil treatments are applied, they will wipe out any beneficial insects -- which normally do a good job of keeping aphid populations under control.

Also, producers need to keep an eye out for army cutworms as there were some reports of army cutworm activity last fall. Army cutworms start feeding again anytime temperatures are above 50°F. Armyworms are another potential problem.

Extension Farm Management Membership Available

The North Central Kansas Farm Management Association (KFMA) serves eighteen counties in north central Kansas. With the recent downturn in the farm economy, the assistance and analysis provided by a Farm Management Economist could provide producers with the decision tools to successfully navigate these trying times in agriculture.

The association board has decided to continue a \$500 first year discount in membership fees for all new members that sign up this year. This will allow new members to experience how the program works and to get fully acclimated on a trial basis. Membership will fill up fast and with a history of less than 2% membership turnover, now is the time for potential new members to get into the program.

The association economists work with farms of all shapes and sizes. Large and small, experienced operators and new, crop only, combination with livestock, & livestock only; all kinds of operations can be members of farm management. So no matter the enterprise make

up or legal configuration of your farming operation, KFMA has a program to fit your needs. Here are some benefits of membership:

- Standardized Record Keeping System
- On-Farm Economist Visits (Twice a Year)
- Annual Farm Profitability Analysis Report
- Enterprise Profitability Analysis
- Summary Meetings
- In-Office Recordkeeping (If Needed)
- Tax Management Meetings
- Business and Economic Consulting

If you have questions about any of the Kansas Farm Management Association program, please call either the Abilene Office at 785-263-3421 or the Beloit office at 785-738-6418 for additional clarification. The K-State Extension Farm Management Economists Bob Kohman, Will Feldkamp, Trenton Hargrave, and Dave Rempe, along with the office staff, are committed to serving the members and look forward to the opportunity to work with new members throughout the North Central KFMA.

Be sure to like the "Marshall County Extension Service" Facebook page for timely information.

"Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals, and happiness."
- Letter from Thomas Jefferson to George Washington (1787)