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SEPTEMBER 2016

A.I. School Scholarship Grant



Through discussions with some local producers, it came to the attention of Sedgwick County Extension Office that there was a need for more qualified help to assist with artificial insemination (A.I.) of cattle in the area. They had stated that it was difficult to find help when they needed it and- mirroring the age crisis in agriculture in general-the majority of the

help they do have is getting up there in years. Not that there's anything wrong with that: the older the violin the sweeter the music, but the need does exist for younger qualified A.I. technicians.

In response to this need, the William Stretesky Foundation in Julesburg was approached with an idea to offer a scholarship for several students to attend a three day A.I. training course at a greatly reduced rate. The thought was that the cost of the training may be prohibitive for some, and offering scholarships would enable a broader spectrum of participation. The Stretesky Foundation very generously granted a scholarship amount equal to 85% of the total costs for four participants. The idea was to encourage participation from 4H or FFA members but the funds were available to any interested residents of Sedgwick County.

Through coordination with the Sedgwick County FFA Instructor, we very quickly filled all of the spots with FFA students so the opportunity was not advertised elsewhere. If the need and funding exists, I would like to repeat this program next year in order to include more interested participants from a broader range of diversity. The students attended the A.I. training with Howard Miller of 7 Triangle 7 cattle company in Akron. It was an excellent experience for the participants. The training was very thorough with a good mix of both classroom learning and plenty of practice on live cows of various age and breed. The program was a great success and we hope to be able to offer it again in the future. The Included picture is of those who attended the training including myself and Ms. Appelfeller-Sedgwick County FFA Instructor.

AGRONOMY

Saving Wheat Seed

R.F. Meyer, Area Extension Agent (Agronomy)

Throughout the ages, farmers have planted wheat seed saved from their previous crop. When making seed wheat decisions, they selected the best quality seed from the highest yielding varieties.

With the advent of hybrid crops like corn, farmers discovered that they did not get the advantage of hybrid vigor when they saved their corn seed, the ensuing crop was not uniform, and yields were poor. It was quickly learned they needed to buy new seed each year of these hybrid crops to maximize yields. This annual purchase of hybrid seed commercialized the corn seed business and resulted in enormous investment into research and development for improved corn hybrids. Consequently, technology in corn has benefitted farmers tremendously. When it comes to hybrid corn, it just didn't make sense to save your corn seed any more.

With the passage of the U.S. Plant Variety Protection Act in 1970, congress encouraged private investment into development of new plant varieties. An important component of this act was the farmer's right to save seed. Section 113 of the act states, "It shall not infringe any right hereunder for a person to save seed produced by the person from seed obtained, or descended from seed obtained, by authority of the owner of the variety for seeding purposes and use such saved seed in the production of a crop for use on the farm of the person ..."

Thus, in most cases, if a farmer purchases Certified wheat seed they may keep seed grown from that seed for planting on his farm. But, there are not new exceptions to this rule. As a result, always ask the certified seed seller if you can plant back the variety you are purchasing. And, if a farmer buys non-certified wheat seed of a PVPA protected variety from someone else, it is likely that not only is the purchase of that seed in violation of the Act, but saving seed of subsequent production is also a violation.

The most recent restrictions to saving seed are those imposed by patented traits and sales contracts. In most cases, farmers are prohibited by patent laws from saving seed of varieties with patented traits like Roundup® resistance in soybean and Clearfield® in wheat. This is usually reinforced through a contract that is signed at the point of purchase. Even if traits are not patented, saving seed may be prohibited as part of the sales contract. Always ask the seed seller if plant back is permitted.

The consequences of planting illegal seed can be substantial. The owner of the variety could go as far as filing a lawsuit asking for the destruction of the crop. There could also be monetary awards and attorney fees. If state or federal officials get involved, fines could be imposed.

Ignorance of the law is no excuse. As a best management practice, farmers should know what variety they are planting. If they did purchase Certified seed, they should read the label and sales contracts to see if there are any restrictions on saving seed.

Should anyone have specific questions regarding saving wheat varieties for planting contact the Colorado State Seed Department at 970-491-6202.

With the recent private investment and inclusion of proprietary genetic traits into wheat variety development, time will tell if producers can continue to save seed. On the bright side, the value that seed Certification brings to seed wheat performance and convenience along with the improvements in yield and quality offered by new varieties may make saving your own seed an economically unattractive choice.

SOURCE: Daryl Strouts, president, Kansas Wheat Alliance – Wheat Farmer Newsletter

Replacing Summer Fallow with Grain-type Field Peas: New Markets, New Opportunities

*Strahinja Stepanovic (UNL), Ben Dutton (UNL), Lucas Haag (K-state),
Brian Talamantes (CSU), Ron Meyer (CSU)*

Introduction

Grain-type field pea (Figure 1, *Pisum sativum*), also known as field peas, yellow dry peas, or yellow peas, is a spring-planted cool-season crop that can be grown as an alternative to summer fallow in semiarid cereal-based cropping systems. The agronomic potential and rotational benefits of field peas have long been observed by dryland farmers in semiarid regions of Colorado, Kansas, Nebraska, and Wyoming. However, lack of market opportunities and locally developed research-based recommendations on agronomic practices have hindered larger adoption of the crop in these regions. As these information gaps are gradually addressed, field pea production is increasing in the western High Plains.

Field Pea Markets

Field peas are an excellent source of highly digestible proteins, which offers a variety of opportunities to market its products in livestock, pet industry and for human consumption. Much of the field peas produced in the United States are processed into split-peas and exported to larger overseas markets for human consumption

Field pea is an excellent source of highly digestible proteins, making it a valuable ingredient for livestock, pet, and human food products. Most field peas are processed into split peas and exported overseas for human consumption. They are commonly used by the United Nation's World Food Programme and other food aid initiatives. Research has shown that field pea also may be used as a replacement in hog diets and cattle finishing diets as well as a protein supplement for grazing cattle. In the past 30 years spending on pet food has increased 350%. With this increase, pea fiber and pea protein concentrate (byproducts of pea processing) have become more important ingredients in pet food. In addition, peas have good potential for producing high margin value-added ingredients for use in the health and nutrition sector in the US. The market for sports nutrition shakes and bars is almost \$6 billion and growing and the potential for using pea flour as a substitute for wheat is compelling as more people

in the US try to live gluten-free and reduce their simple carbohydrate consumption.

Developing Local Markets for Field Peas

In 2016, farmers planted approximately 35,000 acres to field peas in northeast Colorado, northwest Kansas, and southwest Nebraska (estimate based on seed sales) without a guaranteed market. In response Gavilon Goodlife Grains and Pulses created local field pea markets and, it reports, invested about \$9 million in pea processing and storage facilities in the region. It is now buying field peas in Nebraska, Kansas, Colorado, Wyoming, and South Dakota, offering spot contracts, new crop contracts, storage premium contracts, farm pick up contracts, delivered contracts and acre contracts to field pea growers. Gavilon has five receiving points in Nebraska: Benkelman, Champion/Imperial, Cozad/Lexington, Kearney, and Hastings.

In 2012 there was a similar grower initiative in the Nebraska Panhandle and Stateline Producers Cooperative in Bridgeport and Gering responded by developing local markets and investing in a pea processing facility. Since then, field pea acreage in Nebraska has increased from 10,000 acres to about 100,000 acres, mostly due to larger adoption of field peas in the Nebraska Panhandle.

Researching Field Peas for Long-Term Sustainable Production

Faculty and staff from the University of Nebraska–Lincoln, Kansas State University, and Colorado State University are working closely with farmers and stakeholders to bridge some of the information gaps around growing field peas in semiarid dryland cropping systems. The universities cited are collaborating on research on field pea production in the western High Plains with funding support from their institutions, USDA's SARE (Sustainable Agriculture Research and Education) program, and the field pea seed industry.

Although we are in the early stages of research and multi-year and multi-location data is yet to be analyzed and published, here are preliminary research findings from UNL's 2015 Rotation study

that may help you make informed decisions on replacing fallow with field peas:

- Field peas had higher soil microbial activity than fallow. Thus, release of plant available nitrogen through mineralization of soil organic matter was estimated to be about 20 lbs/ac higher than in fallow.
- Field peas had better water utilization than fallow. Field peas produced 36 bu/ac yield using 11 inches of soil water (3.3 bu/acre-inch) and allowed enough time to refill soil water profile with off-season rains to ensure good winter wheat establishment. Fallow used 6 inches of soil water while producing nothing, and did not have enough soil water storage to capture 5.3 inches of additional rain that was leached out below the root zone (4 foot).
- Field peas supported a greater number of beneficial insects and microorganisms than fallow.
- Field peas were more profitable than fallow, about \$111/ac
- The trade-offs are that field peas may deplete soil water and potentially reduce the yield of succeeding wheat crop (yield penalty = 5-6 bu/acre-inch), especially in dry years.
- Following parameters are yet to be evaluated in this rotation study: (1) yield and yield quality of succeeding wheat crop, (2) mycorrhizal associations in succeeding wheat crop, (3) system profitability, (4) soil water infiltration, and (5) soil aggregation (erosion potential).

In addition research results are available for:

- Multi-year and multi-location field peas yields and variety testing performance (*Link 10, Link 11, Link 12*).

- Seeding rate studies (*Link 13*)
- Results from K-state fungicide in-furrow treatments, as well as UNL's seeding depth, inoculant, and herbicide studies are yet to be analyzed and published.
Link 10 (Variety testing UNL):
<http://cropwatch.unl.edu/varietytest/othercrops>
Link 11 Variety testing K-state):
<http://www.northwest.k-state.edu/agronomy/documents/field-peas-as-potential-fallow-alternative-in-nw-ks.pdf>
Link 12 Variety testing K-state):
<http://www.northwest.k-state.edu/agronomy/documents/2014-field-pea-variety-performance-test-results.pdf>
Link 13 (Seeding rate study UNL):
<http://cropwatch.unl.edu/replacing-summer-fallow-grain-type-field-peas-planting-population>

Future of Field Peas

Research results will continue to be released at university workshops, field days, and through the media to close the information gap related to producing field peas on the western High Plains. Farmers, consultants, and members of the agriculture industry have attended many of the educational experiences that have been conducted in the region and can expect more releases as information becomes available from this season.

With prices of other crops (wheat, corn, sorghum) being so volatile and cost of production constantly increasing, having an additional, low-input legume crop with stable market might benefit growers, certified seed dealers, field peas processing facilities, and communities in general.

Grain Storage and Temperature

R.F. Meyer, Area Extension Agent (Agronomy)

Stored grain insects cannot live on extremely dry grain, however it is impractical to reduce grain moisture much below minimum moisture levels necessary for long-term storage. The safe storage moisture level for wheat is about 13%, corn 15%, and sunflower 10%. Insect activity and reproduction are favored by high grain moisture, especially when condensation and molds occur and fermentation raises the grain temperature. Spoilage and internal heating allow insects to remain active – even in winter.

Proper bin aeration can help manage grain temperature. Since insects are “cold-blooded”, they are less active in lower temperatures. Maintaining “cool” grain can be particularly important in reducing insect reproduction. Condensation of moisture in the grain mass is prevented by slow cooling and gradual reduction of the difference between the grain temperature and the outside average air temperature.

Typical wheat harvest temperatures may produce a grain mass that starts off at 95°F or higher. In a 1994 study, Kansas entomologists found that proper aeration and cooling after harvest could eliminate insect damaged grain, in many cases.

SOURCE: “Crop Watch”, University of Nebraska

COFT Trials

COFT trials, short for Collaborative on Farm Testing, are wheat variety trials that are conducted as part of the Colorado State University Crops Testing Program. Cooperating farmers work in conjunction with the Crops Testing team and local Extension personnel to plant a number of different wheat varieties from both public and private breeding programs. These are large test plots that are both planted and harvested with the farmers own equipment. The scale of the trials and having each variety planted side by side in a real world production field provides valuable information about how the different varieties perform. In addition to yield and moisture, samples are taken of each variety to be analyzed later for various quality characteristics.



The image on the left is of Golden Plains Area Extension Director, Dennis Kaan, keeping a close eye on the scale read out of one of the weigh wagons we use to calculate yield.

The combine will take each variety one at a time and empty into the weigh wagon where the weight will be recorded and grain samples taken. From there that load of wheat will be augered into the farmer’s truck where it will be mixed with all the other varieties. Beyond that, its final destination is up to the farmer.

The heart and soul of the COFT program is the collaborating farmers, without which the variety testing would not be possible. Results from the COFT testing provide valuable data for producers, and researchers alike. Be on the lookout for forthcoming data from the 2016 COFT trials.



HORTICULTURE

Yuma County Jail Garden Program

CSU Horticulture Program Associate Linda Langelo, Sheriff Chad Day of Yuma County and Yuma County Jail Program Coordinator, Laurie Clemons, are currently collaborating to pilot inmates learning to grow their own vegetables. Yuma County Jail inmates are gaining education and job skills. The programs is intended to work toward a larger goal of reducing recidivism.



Inmates prepping soil for planting.



An inmate taking care to water tomatoes.
Photo courtesy of Mallory Gruben



The garden is very well maintained.
Produce grown goes to the jail's kitchen
for inmates to eat.

Colorado Master Gardener Program Applications Are Being Accepted

The Golden Plains Area Extension is now accepting applications for the Colorado Master Gardener Program which begins January of 2017. They will be receiving application through October 1, 2016.

The Program will run over a two-year period consisting of 2017 and 2018. In 2017, participants will do course work through a local extension office via online training. It is generally over a ten-week period ending in April. In the remaining part of 2017, participants can begin doing some of their volunteer hours that are required for the program. Then, in 2018, participants will do more hands-on and complete their volunteer hours. Volunteer hours include a total of 50 hours between the two years, which helps reduce the cost of the program.

Those who apply and are accepted into the program will receive training on plant care and other related topics. They will work with other gardeners and other Colorado Master Gardeners to receive excellent training to become a Colorado Master Gardener themselves. This program is ideal for those who wish to increase their knowledge of

horticulture and help others learn the joy of successful gardening and plant growing!

With the Colorado Master Gardener Program, there are two educational options listed as follows:

- Colorado Master Gardener Certificate
- Colorado Garden Certificate Student

The program is open to everyone, whether amateur or professional, who has a desire and passion for gardening or learning more about horticulture in general. If gaining this type of knowledge and helping other through gardening is of interest to you, please know that this Program would be an ideal choice for you! Each of the counties in the Golden Plains Area is needing more Master Gardeners with knowledge to share and assist others.

Please contact Linda Langelo at the CSU Extension office in Julesburg (970) 474-3479, or Jeannie Lambertson at the CSU Extension office in Akron (970) 345-2287. You may also visit either office for more information or contact your local Extension Office within your County.

Opportunities for Fall Weed Control

As the days and nights become cooler and the natural world makes its annual rituals of preparedness for the onset of winter, an excellent window of opportunity for controlling some of the most troublesome weeds is opened. Difficult to manage biennial and perennial weeds like many in the thistle family often respond favorably to fall herbicide applications with systemic products when made at the correct time.

Systemic herbicides, those that translocate within the plant, move through either the xylem, phloem, or both. The xylem is a hollow, non-living structure inside the plant that moves water and nutrients from the roots up through the rest of the tissues. The phloem on the other hand is composed of living cells that transport mainly sucrose throughout the plant.

There are a couple of reasons why control in the fall is effective, for one, perennial plants are drawing reserves into their root systems in preparation for the winter and carry the herbicide with them allowing for a more complete

opportunity for control. Also, in the case with many biennial weeds, they will be in the rosette stage which makes them easier to control. Often biennial weeds are ignored until the second year when they bolt and their upright structure becomes conspicuous. Careful observation however can show a savvy manager where these weeds are before they get a chance to set seed in their second year.

Several considerations about the condition of the plants and the weather must be made before treating weeds with a fall application. All chemical control must be made before a killing frost when the plant is still actively growing. Daytime temperatures also must be at least in the 50's as herbicides are most effective between the mid 50's and 80's with activity being higher with increasing temperature. With the right conditions and methods, herbicide applications made in the fall have the potential to noticeably decrease weed pressure the following spring.

Julesburg Elementary Participates in Carton2Garden



Carton2Garden is a national competition by the National Gardening Association. The purpose of the contest is to teach kids about recycling – hence the picture of the marigolds in used milk cartons. The kids also learned about plants, timing on planting seeds, and transplanting. This was done from February to May under the guidance of their teacher Jenny Weagle in Julesburg Elementary School.

Tri-State Horticulture Symposium



The Tri State Horticulture Symposium held on April 4th and 5th at the Yuma County fairgrounds brought together several professionals, homeowners and Green Industry vendors. Topics were discussed regarding invasive weeds, pollinator habitats, and best practices to use when caring for trees.

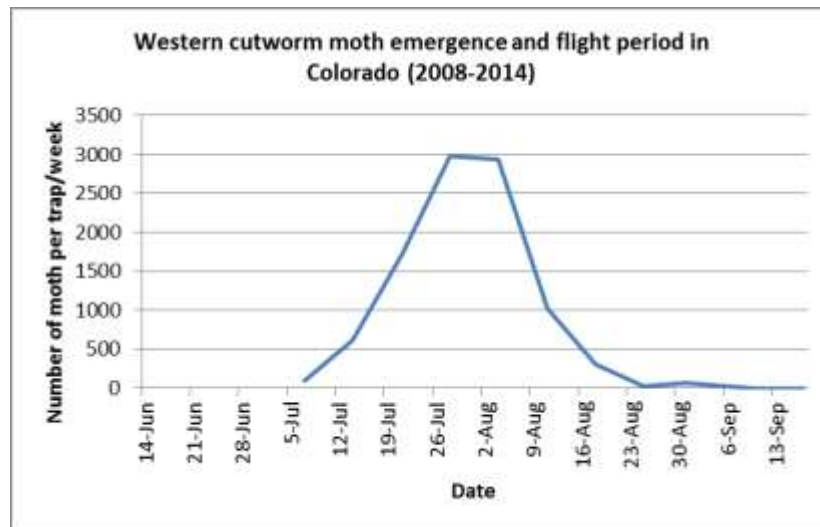


PEST MANAGEMENT

Western Bean Cutworm and Spider Mites in Field Corn Need to Be Monitored

*Assefa Gebre-Amlak, Extension Specialist
Colorado State University Extension*

Western bean cutworm (WBC) moths began to emerge in most part of northeastern Colorado (www.colostate.edu/programs/northernipm). According to the historic pheromone trap data, the moth flight will continue until middle of August in Colorado. The peak population of the moth occurs around the last week of July and first week of August (see graph below).



Western bean cutworm is a pest of both corn and dry beans. In dry bean, pheromone traps may be used to monitor moth populations and make treatment decision (www.highplainsIPM.org).

Control is expected with only those Bt corn hybrids containing the Herculex I or Herculex Xtra events. For corn hybrids that do not contain these events, fields should be scouted for this pest; good control will be difficult once the larvae move into ears.

In non-Bt corn, management decisions of western bean cutworm are based on monitoring egg masses on corn leaves. Eggs the moth are deposited in clusters on upper surface of leaves. Upon hatching, young western bean cutworm larvae, move to one of the two places on corn plant, depending the stage of the plant. If the corn has not tasseled, larvae will feed on pollen in the developing tassel. If tasseled, larvae will feed on silk in the ear and once the ear is formed, the larvae will feed on developing kernels.

Chemical control is justifiable if eight per cent or more of the plants have egg masses or small larvae in the tassels and the crop is at least 95 percent tasseled. If tasseling is much less than this, the economic threshold should be raised to as fewer larvae are likely reach the ears.

Scouting for eggs of western bean cutworm in corn is recommended the next three weeks in Colorado. Effective insecticide products for both corn and dry beans are found in the High Plains IPM Guide:

www.HighplainsIPM.org.

Many of the insecticides registered for western bean cutworm have been associated with spider mite outbreaks, so fields should be monitored for mites after a treatment is made. It is important to monitor Banks Grass Mite (BGM) in corn if dry hot conditions prevail during the growing season. Webbing and discoloration on leaves are often first signs of mite infestations.

Banks grass mite (BGM) builds up on the plant from the bottom up. Chemical treatment is justified when there is visible damage in the lower third of the plant and small colonies are present in the middle third of the plant before hard dough stage. For effective products for both species of spider mites management and detailed economic threshold, check the High Plains IPM guide: www.highplainsipm.org.

Monitor Cornfields for Spider Mites

*Assefa Gebre-Amlak, Pest Management Specialist
Colorado State University Extension*

The Colorado State University field studies show that spider mites can be serious corn pests in Colorado especially during hot and dry years causing significant dry matter and grain loss.

There are two species of spider mites that attack in Colorado, Banks grass mite (BGM) and two-spotted spider mite (TSM). Most corn growing areas are affected by BGM alone but north central Colorado, especially Weld and Larimer counties and productions areas along the South Platte River are prone to serious mixed-infestations. Spider mites feed on the undersides of leaves, eventually killing the leaf and leaving it with scorched or burned appearance.

Banks grass mite is commonly found in corn from mid-whorl through the grain filling growth stages, while two spotted mite is rare on corn before flowering. Factors that encourage Banks Grass mite infestations include host drought stress, elevated temperatures, low rainfall, and low humidity.

Most banks grass mite problems occur in the drier corn-growing areas and always associated with grasses, for example many problems in corn start

when adjacent wheat fields dry down. Whereas two-spotted mite occurs in more humid growing areas such as along river bottoms.

Webbing on leaves and discoloration are often the first signs of an infestation. Initially, Banks Grass Mites are most abundant on the lower third of the plant and density declines as the infestation moves up in the plant. Mites damage corn and small grains by piercing plant cells with their mouthparts and sucking the plant juices.

Proper irrigation to avoid drought stress is the key cultural practice for avoiding mite outbreaks but once mite infestation are established, irrigation cannot reduce mite densities in corn.

Banks grass mite builds up on the plant from the bottom up. Chemical treatment is justified when there is visible damage in the lower third of the plant and small colonies are present in the middle third of the plant before hard dough stage. For effective products for both species of spider mites management and detailed economic threshold, check the High Plains IPM guide: www.highplainsipm.org.

AG BUSINESS MANAGEMENT

Do You Have Employees?

If So, Are You Prepared for the Changes to the Fair Labor Standards Act?

Michael J. Fisher, County Extension Director, Pueblo County

The Fair Labor Standards Act (FLSA) was established in the 1930s to protect workers. It oversees matters related to the minimum wage, child labor laws, time worked by an employee, & overtime exemptions. The Department of Labor oversees compliance with the FLSA and has the authority to issue fines & penalties to employers who are in noncompliance.

The overtime exemption section of the FLSA is being updated with new values taking effect on December 1, 2016. Since 1940, a position has to be “tested” in three tests to determine if the position is subject to overtime pay or not. The first test looks at the position’s salary and determines if there is a predetermined and fixed salary level that does not suffer reductions. The second test reviews if that salary level meets a minimum specified amount. Finally, the third test looks at the job duties within the position. The duties test has exemption qualifications for some positions that are classified as executive, administrative, professional, agricultural, and computer related.

While employers need to review the duties based test in the new FLSA regulations to see if this has changed the status of some employees, changes to the salary based test is going to have a broad impact on how employers and employees conduct business. Currently, the FLSA lists \$23,660 as the minimum salary that is eligible for exempt status. Beginning December 1st, the minimum exempt status salary value will more than double to \$47,476. It is important to note that while the Department of Labor reports this on an annual salary basis, the overtime determination is calculated on weekly hours worked. Positions that do not successfully pass all three exemption tests are eligible for overtime pay. (Some organizations may be able to provide comp time for any hours worked above 40 in a week in lieu of overtime pay.) This includes time that the employee spends answering work related calls on their cell phone or work related emails they read and/or respond to after hours.

If you have employees who are currently considered to have exempt status, you really should take some time to review their positions under the new regulations. It is possible that some positions may have to be reclassified to nonexempt. The fines & penalties associated with this regulation are quite significant. Additionally, it is important to note that the new regulations have established that an update to the FLSA should take place every three years. The US Department of Labor has established information on their website regarding what they call “The Overtime Rule.”

To Spray or Not To Spray: Partial Budgets May Hold the Answer

Brent Young, Regional Agriculture & Business Management Specialist (brent.young@colostate.edu)

My colleague, Ron Meyer, Area Agronomist for Golden Plains Area was very busy this spring inspecting wheat fields and answering producers’ questions about stripe rust. Ron and other CSU agronomist were quick to remind wheat farmers of the yield potential of this year’s crop given our abundant soil moisture and the wide variety of effective treatment measures for wheat stripe rust, yet with September wheat futures trading around \$4.80/bu. and area basis running -\$0.80 to -\$0.90 many producers questioned the economics of treating this disease.

Partial budgets are a very simple economic decision tool that may provide some answers regarding the financial ramifications of this production choice. Minor adjustments made in a portion of the agricultural business can be evaluated by the use of a partial budget.

Partial budgeting is based on the idea that a small change in an agricultural operation will result in one or more of the following effects:

1. Eliminate or reduce some costs
2. Eliminate or reduce some returns
3. Cause additional costs to be incurred
4. Cause additional returns to be received

If we look at the case of treating for stripe rust, additional costs to be incurred (cost of the chemical and application) and we could expect additional returns in the value of the extra bushels of wheat that could be sold from treated fields (5 to 30% expected yield increase). The net effect will be the sum of the positive effects minus the negative effects. More information about using partial budgets can be found on the CSU Agricultural Business Management website at <http://www.coopext.colostate.edu/ABM/abmpartialbudgeting.pdf>.

It is important to note that partial budgets only consider the economic side of this decision and they require information provided by a trained professional agronomist like Ron to determine the proper chemicals to be used (additional costs) and potential yield increase (additional returns). Many times this information differs from field to field

To paraphrase a famous quote from Shakespeare, “To spray or not to spray-that is the question”. Partial budgets may hold the answer.

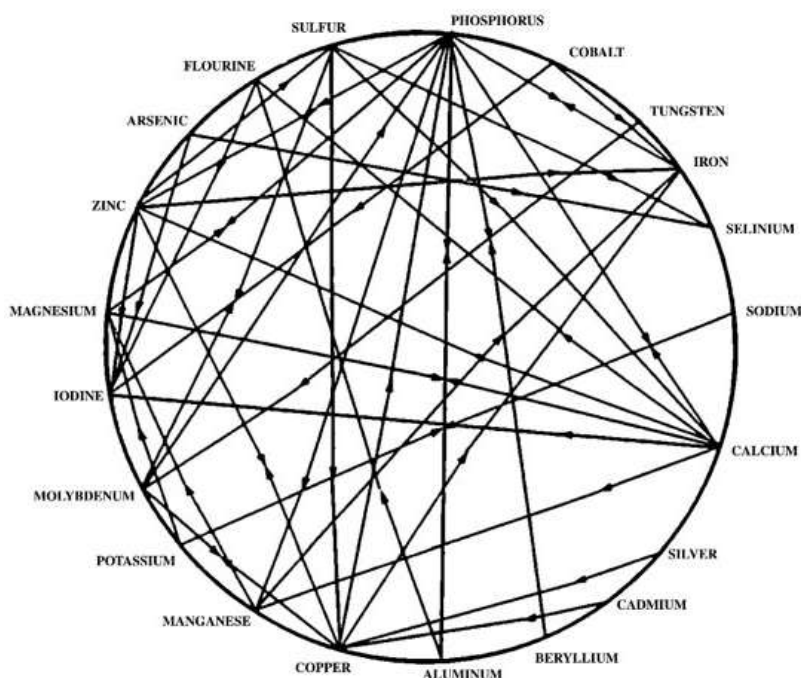
LIVESTOCK

Mineral Antagonism

Chris Shelley, Area Livestock Agent

This is a remarkable time to be in the livestock industry. The overwhelming amount of research and technology has elevated livestock production to a level of proficiency unimaginable by our predecessors. From artificial insemination technology to invaluable pharmaceuticals, sometimes it seems like we may have everything figured out. However, the complexities of an industry that involves rangeland ecosystems, weather patterns and animal biology are far from being completely understood.

Despite one's best efforts to apply sound research and modern technology, some problems can still arise. Although most cattlemen today provide a mineral supplement containing many macro and trace minerals, it is possible to have inadequate mineral absorption by livestock. Common reason denotes that if the recommended amount of mineral is supplied in the diet, the cattle will have what they need. This is not always the case and mineral antagonism can be the culprit.



One example of mineral antagonism occurs with copper. Copper plays an important role in bone density, immune function, growth and fertility. Copper varies considerably depending on the forage source and geographically, and is often deficient in grazing cattle diets. A rancher that is supplying the recommended amount of copper (10 mg/kg of diet, NRC 2000) for his cattle may still have cattle with a copper deficiency. Molybdenum, Iron and Sulfur all can interact with copper, making it unavailable to the animal. We call this an antagonism, which can cause a deficiency just the same as the absence of copper from the diet.

The figure to the left was adapted from www.nodpa.com and represents the complex mineral interactions and antagonisms. Arrow direction indicates the mineral that may be affected by the interaction.

Many cattle producers are skilled at diagnosing the visual cues and production decreases caused by disease or malnutrition. If something does not seem right, err on the side of caution and investigate further. Although one can directly sample the cattle's copper status from the liver and blood, the easiest and recommended method is to sample the diet. A quick sample of the forage being consumed, along with a water sample, will indicate what level of minerals the cattle are consuming and how to best balance them to avoid an antagonism.

Sample collection in and of itself is a straightforward process and many labs have instructions and tips on the correct procedure. The more daunting task is interpreting the results received and how to proceed forward. This process involves calculating mineral levels in the feeds, verifying animal requirements and a basic understanding of scientific units and conversions.

There are several resources to help with this task. Your local CSU Extension offices are happy to help as well as mineral dealers who are trained in that field. The most important thing to remember is a balanced nutritional plan can save on feed costs and improve animal performance.

Youth Conservation Camp Report

Chris Shelley, Area Livestock Agent

Consumer perception of the beef industries products and practices are an important issue. In the 2007 Beef Quality Assurance audit, consumers were polled and asked about their perception of perception of beef production. The survey found that 78% of consumers had a strong to somewhat positive perception of beef production. The questions asked covered topics including cattle nutrition, antibiotics, hormones, disease, slaughter and other practices.

Though this may be a majority of consumers, there are number who disagree or are unsure about modern beef production. The interesting part is that with education and firsthand experience of what actually happens in the beef industry, the percentage of consumers with concerns decreases dramatically. The opportunity to portray the beef industry in a positive light and improve consumer perception is literally in our hands.

In Extension, we engage diverse audiences and provide research based education on the beef industry practices and culture. These opportunities are often met with increased awareness and acceptance.

Recently, youth from the Golden Plains Area enrolled in a summer program were taught about cattle production in the United States. Where many did not have any direct experience with agriculture, most indicated they were consumers, while several were not. Regardless of diet choices, the youth that participated in the program left with a better understanding of cattle health, nutrition and production practices. The importance of cattle operations in the sustainability of rangeland ecosystems was also an important topic and how it is a tool to mitigate carbon emissions.

Some of our responses were:



- “I liked your presentation. I learned a lot about cows and how the dairy farms work. Thank you.”
- “Hey thanks for making me hungry!”
- “Thank you for teaching us. I didn’t know you could make so many things with cows.”

AG MARKET PRICES

Dennis Kaan, Golden Plains Area Director

LIVESTOCK CASH PRICES			Week Ending 8/26/16		
			Current ¹	One Month Ago ²	One Year Ago ²
Colorado Auction Feeder Cattle, Medium & Large Frame #1					
Steers,	500-550 lbs	/cwt			
Steers,	600-650 lbs	/cwt	No Market Data	No Market Data	No Market Data
Heifers,	500-550 lbs	/cwt	Available	Available	Available
Heifers,	600-650 lbs	/cwt			
Colorado Weekly Weighted Average Direct Slaughter Cattle, FOB the Feedyard After 3-4% Shrink					
<u>Live Basis Steer Sales</u>	Hd Count	Wt Range	/cwt	/cwt	/cwt
Over 80% Choice	1,274	1,400-1,515	\$114.50-115.50	\$114.00-115.00	
65-80% Choice	1,084	1,350-1,488	\$114.50-115.50	\$114.00-115.50	\$151.00-153.00
35-65% Choice				\$115.00-115.50	\$151.00-153.00
0-35% Choice					
<u>Live Basis Heifer Sales</u>	Hd Count	Wt Range	/cwt	/cwt	/cwt
Over 80% Choice	1,220	1,275-1,384	\$114.50-115.50	\$115.00	\$151.00
65-80% Choice	290	1,300-1,358	\$114.50-115.50	\$115.00	\$153.00
35-65% Choice				\$114.00	\$153.00
0-35% Choice					
Mountain Area and Western U.S. Direct Sheep Report, Medium and Large 1-2					
	Hd Count	Wt Range	/cwt	/cwt	/cwt
Feeder Lambs	2,525	95-110	\$160.00-165.00	\$167.00	\$164.00
	1,200	105-115	\$165.00		
Hogs, As of 11/18/13					
Base Market Hog, 200 lb. Carcass Basis, Plant Delivered					
0.9-1.1" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$55.00-62.00	\$64.00-70.75	\$66.00-74.50
Iowa -Minnesota Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$55.00-\$62.50	\$64.00-71.00	\$66.00-76.50
Western Cornbelt Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$55.00-\$62.50	\$64.00-71.00	\$66.00-74.50
LIVESTOCK FUTURES PRICES			8/26/16		
Live Cattle – CME			Current ¹	One Month Ago ²	One Year Ago ²
Oct		/cwt	\$108.07	\$106.35	\$144.85
Dec		/cwt	\$108.10	\$109.20	\$143.70
Feb		/cwt	\$108.22	\$109.32	\$146.05
Apr		/cwt	\$107.30	\$108.52	\$145.87
Feeder Cattle – CME					
Sep		/cwt	\$139.92	\$135.82	\$211.37
Oct		/cwt	\$135.95	\$134.80	\$202.32
Nov		/cwt	\$132.82	\$132.47	\$199.47
Jan		/cwt	\$130.00	\$128.97	\$197.35

¹ Commodity specifications apply to the current period only. Specifications may have been different for prior period listings.

² Prices reported for the one month ago and one year ago are taken from previous issues of this publication.



Source: U.S.D.A. Agricultural Marketing Service
Chicago Mercantile Exchange

<http://www.ams.usda.gov/market-news>
<http://www.cmegroup.com/>

CASH GRAIN PRICES**8/26/16**

		Current ¹	One Month Ago ²	One Year Ago ²
#1 HRW Wheat				
Fleming, Haxtun, Julesburg, Holyoke, Paoli, Amherst	/bu	\$2.62-3.05	\$2.96-3.30	\$4.06-4.16
Yuma, Wray, Brush, Akron, Otis, Anton	/bu	\$2.52-2.65	\$2.84-2.94	\$4.16-4.26
Burlington, Seibert, Flagler, Arriba, Genoa, Hugo	/bu	\$2.50-2.55	\$2.84-2.89	\$4.16-4.31
#2 Yellow Corn				
Haxtun, Julesburg, Fleming, Holyoke, Paoli, Amherst	/bu	\$2.79-2.81	\$2.94-3.05	\$3.39-3.81
Yuma, Wray, Brush, Otis, Anton Seibert, Arriba, Burlington, Flagler, Bethune, Stratton	/bu	\$2.73-2.93 \$2.61-2.66	\$2.84-3.05 \$2.80-2.85	\$3.41-3.76 \$3.36-3.44
Northeast Colorado, Western Nebraska Beans				
Pinto Beans	/cwt	\$28.00	\$28.00	\$20.00
Great Northern Beans	/cwt	\$28.00	Not Established	Not Established
Light Red Kidney Beans	/cwt	Not Established	Not Established	Not Established
White Millet				
E Colorado / SW Nebraska	/cwt	\$5.25-6.00 Mostly \$5.50	\$5.50-6.00 Mostly \$6.00	\$6.00-7.00 Mostly \$6.00-6.25
Sunflowers				
E Colorado / SW Nebraska	/cwt	\$16.50-17.00	\$16.25-17.00	\$16.00-17.00

GRAIN FUTURES PRICES**8/26/16**

		Current ¹	One Month Ago ²	One Year Ago ²
Wheat, Kansas City Board of Trade				
Sep	/bu	\$3.83	\$4.25	\$4.97
Dec	/bu	\$4.07	\$4.50	\$5.01
Mar	/bu	\$4.32	\$4.75	\$5.05
May	/bu	\$4.46	\$4.87	\$5.07
Corn, Chicago Board of Trade				
Sep	/bu	\$3.16	\$3.35	\$3.65
Dec	/bu	\$3.25	\$3.41	\$3.76
Mar	/bu	\$3.34	\$3.51	\$3.88
May	/bu	\$3.41	\$3.57	\$3.94

CASH HAY PRICES**Week Ending 8/26/16**

		Current ¹	One Month Ago ²	One Year Ago ²
Colorado Hay Report, Northeastern Areas				
Large Square Bales, FOB Stack				
Supreme Alfalfa, 180+ RFV (On Contract)	/ton	\$245.00	\$130.00	
Premium Alfalfa, 150-180 RFV	/ton			\$170.00
Good Alfalfa, 125-150 RFV	/ton			
Fair Alfalfa	/ton			
Utility Alfalfa Delivered	/ton			\$95.00
Premium Grass (Large Squares)	/ton	\$210.00	\$210.00	
Premium Grass (Small Squares)	/bale	\$6.00	\$6.00	\$7.00
Straw (Large Squares)	/ton			
Corn Stalks (Large Squares)	/ton			
Oats (Large Squares)	/ton	\$80.00		
Cane Hay (Large Rounds)	/ton			
Millet Hay (Large Squares)	/ton	\$75.00-80.00		

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- 1.....A.I. Scholarship Grant
- 2.....Saving Wheat Seed
- 3-4.....Reducing Summer Fallow with Grain-type Field Peas: New Markets, New Opportunities
- 5.....Grain Storage and Temperature
- 5.....COFT Trials
- 6.....Yuma County Jail Garden Program
- 7.....Colorado Master Gardener Program Applications
- 7.....Opportunities for Fall Weed Control
- 8.....Julesburg Elementary Participates in Carton2Garden
- 8.....Tri-State Horticulture Symposium
- 9.....Western Bean Cutworm and Spider Mites in Field Corn Need to Be Monitored
- 10.....Monitor Cornfields for Spider Mites
- 10-11...Do You Have Employees? Are You Prepared for Changes in the Fair Labor Standards Act?
- 11.....To Spray or Not To Spray: Partial Budgets May Hold the Answer
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