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**MARCH 2018**

## **New Voluntary Groundwater Reporting Program For the Plains Groundwater Management District**

Groundwater use and availability are a key issue for the vitality of our region. In an effort to gather information about how groundwater is used over the course of the growing season, researchers at Colorado State University are initiating a new program titled the Agricultural Data Reporting and Incentives Program (AgDRIP).

This voluntary program aims to collect monthly groundwater use information from individual irrigation wells operated by agricultural producers in the Plains Groundwater Management District. The water use and crop yield information that is collected will contribute to a better understanding of how differences in seasonal water use influence crop production.

High capacity wells in the Plains Groundwater Management District are eligible to enroll in the program, which will provide financial incentives to producers that choose to participate. The program is supported by the United States Department of Agriculture and will run from March through December of 2018. No well-specific groundwater information that is collected as part of the project will be shared with state or federal authorities.

Invitations with additional details about the program will be sent to eligible irrigated landowners in January. For more information about the voluntary Colorado State University research project, visit the project's website ([www.AgDrip.org](http://www.AgDrip.org)), contact CSU Extension Agronomist Ron Meyer ([RF.Meyer@colostate.edu](mailto:RF.Meyer@colostate.edu)) or Professor Jordan Suter in CSU's Department of Agricultural and Resource Economics ([Jordan.Suter@colostate.edu](mailto:Jordan.Suter@colostate.edu)).

To receive an e-mail notification of publication on-line  
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# AGRONOMY

## Kyrgyzstan Agriculture

*R.F. Meyer, Golden Plains Area Agronomy*

Agricultural production practices vary widely even from county to county, but half-way around the world from here agricultural production is accomplished completely different. Last year I was invited to assist farmers in the Central Asian country of Kyrgyzstan. This former Soviet country ceded from Russia during the Soviet Union collapse in 1991. At that time, the people in Kyrgyzstan decided their government should not be a communist dictatorship, but rather a republic type government. Thus, the Kyrgyz Republic, as they refer to themselves, today is a sovereign country in Central Asia and have now elected their 4<sup>th</sup> president in the country's 27 year history. Kyrgyzstan is a land-locked country with mountainous terrain. It shares borders with Kazakhstan, Uzbekistan, Tajikistan, and China. Due to the mountains that occupy much of the northern part of the country, most of the agriculture occurs in wide, rich river valleys in the southern areas and is irrigated. Bread is a staple in this country and the Fergana Valley (the southern part of the country where I was assigned) should be a "bread basket" for Central Asia, but the region lacks agricultural technology. As a result, Kyrgyzstan is forced to import nearly 30% of its wheat needs, making it food dependent on other countries. Part of the issue is that their agricultural training centers are few and are not producing highly technically trained agriculturalists. A land grant university system does not exist there. I was invited to assist with agricultural technology transfer.

Crops grown in the Fergana Valley are cotton, corn, wheat, alfalfa, and sunflower. Thanks to the Soviet built infrastructure, a massive river-fed irrigation system is present and utilized. The result is that irrigation water is available upon demand during the growing season. The climate is continental with hot summers and cold winters. Daytime temperatures in July were 95 degrees F. with humidity levels near 10%. As a result of a long growing season, corn varieties planted are 120 days in length. However, only traditional varieties are grown with little production technology and as a

result, irrigated corn yields of only 140 bushels per acre are common. Equipment is small and 40 years old and an average farm is approximately 1 acre. This system is forcing farmers to get innovative and they are now forming co-ops to purchase equipment together, sharing planting and harvest activities. Farmers there do not have access to crop insurance, marketing tools, or government support.

Old World Cotton Bollworm infestations were found attacking corn fields (I was able to identify this pest via keying with a 3 G internet connection). This pest is in the same order as European Corn Borer, an insect that is not an issue in the United States due to GMO technology. Unfortunately, this technology has not reached this region. Farmers in the Fergana Valley are battling the insect with hand applied insecticides without protective clothing. I introduced transgenic technology to these producers hoping to enable them to battle a pest without insecticide applications.

Other production practices discussed included testing new varieties. Currently, no one is doing side by side variety trials. As a result, current varieties are old and yield limiting. The current wheat variety is a winter type that has been grown there for a long time. No wheat breeding program exists. Improved fertility and irrigation management techniques were also discussed.

During one of the field days we held for local farmers the Kyrgyz national media was present and featured an in-depth interview. Following airing, I was contacted by the American Embassy in Bishkek and invited to update their staff on innovative agricultural production techniques.

Kyrgyz farmers are extremely hard working, doing many tasks by hand. However, they fully understand the value of hard work rewarding them in future years. Finally, this valley has the potential to become food independent in the future with the adoption of just a few improved agricultural production practices.

*REPRINTED FROM: The Wheat Farmer, 64 Star Publishing Inc., January 2018.*

## Pest Sweep!

*R.F. Meyer, Golden Plains Area Agronomy*

Colorado State University Extension will be hosting a pesticide pick up program at various locations within the Golden Plains Area and Morgan County. The program will accept any pesticide delivered to us and properly dispose them through a hazardous waste contractor. Charges for any product dropped off will be \$7 per pound. Both liquid and solid pesticides will be accepted.

### Dates and Locations for Pest Sweep Pesticide Drop-offs are:

Tuesday, March 20	1:30 – 3:30 p.m.	Kit Carson County Fairgrounds	Burlington
Wednesday, March 21	1:30 – 3:30 p.m.	Irrigation Research Farm	Yuma
Thursday, March 22	9:00 – 11:00 a.m.	Phillips County Fairgrounds	Holyoke
Thursday, March 22	1:30 – 3:30 p.m.	Sedgwick County Fairgrounds	Julesburg
Thursday, March 22	9:30 a.m. – 12:00 p.m.	Morgan County Extension Office,	914 E. Railroad Ave., Ft. Morgan
Friday, March 23	9:00 – 11:00 a.m.	Washington County Fairgrounds	Akron

**Pre-registration is necessary for this program.** This can be done by calling Ron Meyer at the Kit Carson County Extension office at 719-346-5571 or call the Washington County Extension office at 970-345-2287. Pre-register the pesticide weight (or an approximation) or the container size. Payment by checks or credit cards will be accepted at each site.

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## New Rules for Dicamba-tolerant Soybean Production in 2018

*John Spring, Golden Plains Area Weed Science and Agronomy*

If you plan to grow dicamba-tolerant (Xtend™ trait) soybeans this year, you should be aware of new EPA regulations governing use of the dicamba formulations registered in the Xtend™ production system for 2018 and beyond. After widespread issues with off-target dicamba movement and injury across the US in 2017, additional restrictions have been imposed on the use of XtendiMax™ (Monsanto), Engenia™ (BASF), and FeXapan™ (DuPont) herbicides in the Xtend™ soybean production system. These formulations are now “restricted use” products, for use only by licensed applicators or those under their direct supervision. Licensed applicators will also have to complete additional, dicamba-specific training prior to using any of these products. *It is illegal to apply these herbicides without first completing the training.* Additional record-keeping requirements and rules for application method have also been added, and are far stricter than usual for herbicides. These new rules apply only to the dicamba formulations registered for use in dicamba-tolerant soybeans – other dicamba products used in other crops are not included in the new rules.

Dicamba-specific training must be taken prior to using any of these restricted use dicamba products (XtendiMax, Engenia, and FeXapan). Growers planning to use Xtend™ soybeans are recommended to contact their sales representative, product manufacturer, or the Colorado Department of Agriculture for further information on trainings and relevant regulations. Make arrangements well in advance of the growing season to prevent any chance of complications later.

# Nine Things to Check Before Planting Season

*R.F. Meyer, Golden Plains Area Agronomy*

1. **Level the Planter.** Check hitch height. Make sure the planter's tool bar is level (vertically) or running slightly up hill. When planters tip down, coulters run too deep and closing wheels run too shallow.
2. **Check Bushings and Parallel Linkage.** Worn bushings increase row bounce which increases seed bounce. Stand behind the row unit and wiggle it up and down and back and forth checking to make sure bushings are tight.
3. **Drive System.** Check every chain. Kinked and worn chains cause shock and vibration in the seed meter. Start with fresh, lubricated chains and check them daily. Include transmission chains, meter drive chains and insecticide box chains.
4. **Calibrate Seed Meters.** Calibrated meters can add six or more bushels per acre.
5. **Double Disk Openers.** Test to make sure there is good contact between the double disks. Slide a business card from the top down along the front of the disks until the card won't lower any further. Mark that spot with chalk. Then, take the card from the back and slide it forward until it stops. Mark that spot and measure the distance between the two marks. If marks are less than two inches, adjust or replace the disks.
6. **Seed Tubes.** Inspect seed tubes for wear at the bottom. Frequently, the tubes will have a small dog ear flap on the left side of the seed tube. If so, replace them.

7. **Closing Wheel System.** For cool, moist planting conditions, take a look at running one spike wheel (15") on one side and one rubber wheel (13"). The spike wheel can help chop the sidewall improving fracturing and sealing in the tough soil conditions. For no-till, an even more aggressive approach may improve trench closing. Two 13" spike wheels with a drag chain provide the most aggressive action.

8. **Closing Wheel Alignment.** With your planter setting on concrete, pull ahead about five feet. Look at the mark left behind the planter by the double disk openers. The mark should run right down the centerline between closing wheels. If a closing wheel is running too close to the mark, adjust the closing wheels to bring it back to center.

9. **Row Cleaners.** With higher levels of residue and more corn on corn, almost any planter can benefit from well-adjusted row cleaners. Row cleaners sweep residue from the row, warming the soil around the seed trench, reducing seedling issues. Make sure row cleaners gently sweep residue – mostly, you don't want to move much soil, just residue. Watch the row cleaners running. They shouldn't turn constantly unless you want to move soil. They should gently turn sporadically, especially through areas of thick residue.

*SOURCE: Precision Planting, Inc.*

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## Scouting for Herbicide Resistance

*John Spring, Golden Plains Area Weed Science and Agronomy*

Good field scouting is key to making decisions in many aspects of crop production. In the case of managing herbicide resistance weeds, it is absolutely critical to a successful management strategy. Scouting before spraying is important, of course, but it is mostly the scouting that takes place **after** an application that is key to managing resistance.

Ideally, every field would be thoroughly scouted 2 to 3 weeks after spraying to confirm herbicide performance and check for problems.

Practically, this follow-up is most important in fields that have weeds with known herbicide resistance – kochia, for example – or weeds with high risk of developing resistance, such as Palmer amaranth. (Most Palmer amaranth in eastern Colorado is still susceptible to most herbicides, but it is notorious for quickly developing herbicide resistance to multiple modes-of-action, and should receive careful attention.)

If surviving weeds are found after herbicide application, there are a number of possible

explanations to rule out before assuming resistance is present. First, rule out physical application factors like sprayer skips, plugged nozzles, and wheel tracks. Rain too soon after application, dusty plants, or small weeds physically shielded from spray by crop residue can be issues in some cases. Next, double-check that the herbicide(s) used should be effective on the target weed(s) at the rate applied, and that correct adjuvants, carrier volume, and droplet size were used. With post-emergent herbicides, weeds emerging after application obviously won't be controlled. As pre-emergent products break down, they begin to lose effectiveness and allow weed emergence. Biological and environmental factors are common causes of poor herbicide performance. Weeds that were too large or under stress at the time of application can be much harder to control.

If none of these alternative explanations explain the failure, then herbicide resistance is likely. Common signs of herbicide resistance include:

- Failure on individuals of only one weed species in the field, where the herbicide (s) and rate used should control it. All other weed species susceptible to the herbicide are controlled as expected.
- It is common to see a mix of resistant (surviving) and susceptible (dead) individual plants within a resistant population. Particularly early in the process of selecting for resistance, most plants may be susceptible and only a handful of individuals are resistant and survive.
- Survivors are distributed in a random or irregular manner that doesn't correspond to any patterns in the field (soil differences, compacted

areas, thin crop stands, etc.) or to the application method.

- Trails of surviving plants with a tumbleweed habit. The hallmark of glyphosate resistant kochia. Dicamba resistant kochia is increasingly common, though, and isolated cases of resistance to fluroxypyr (Starane) have been reported too.
- With resistance to glyphosate and the synthetic auxin (Group 4) herbicides, individual surviving weeds often show a wide range of responses to the herbicide – everything from severe injury to complete lack of damage is often seen on different individuals in a single field. Most surviving plants usually show at least some injury. This pattern is dependent on the biological mechanisms of resistance to individual modes-of-action, however. While this range of symptoms is expected for glyphosate- or auxin-resistant weeds, plants resistant to several other modes of action typically show no perceptible injury after treatment. For example, the biology of resistance to Group 1 (Acc-ase inhibitor), Group 2 (ALS inhibitor), and Group 5 (photosystem inhibitor) herbicides generally leave resistant individuals with little or no injury after spraying.

If herbicide resistance seems the likely cause of the application failure, prompt and aggressive response is needed to control the resistant plants and prevent seed production. This may be expensive and difficult up-front, but the costs of early control are usually a relative bargain compared to managing advanced stages of herbicide resistance.

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## Testing Dormant Wheat for Life

*R.F. Meyer, Golden Plains Area Agronomy*

Environmental conditions affect plant growth in many ways. Conditions that are too dry or too wet, too cold or too hot can all affect wheat production and survival. Determining whether wheat plants are alive in the spring due to adverse growing conditions should be done before spending production dollars on those acres.

### **Visual inspection:**

1. Dig 10 wheat plants from the worst spots in the field, (hilltops, driest areas, etc.).
2. Cut plants diagonally and examine inside the root/shoot areas, especially inside the crown area.
3. Healthy plants will exhibit cream or light colored internal "plumbing" (plant tissue).

4. Discolored or brown colored internal plant tissue indicated dead plants.

**Growth test to determine if wheat plants are alive before active growth begins in the spring:**

1. Remove the top three inches of soil containing the plant crown.
2. Thaw the samples and warm to room temperature.
3. Remove soil from the roots and wash with cool water to remove attached soil.
4. Cut off fall growth to within 1 inch above the crown and roots below the crown.
5. Rinse the crowns with cool water.
6. Place 10 wet crowns in a labeled plastic bag, inflate the bag and tie shut.
7. Place the bags in a lighted room, but not in direct sunlight.

8. Check the crowns in two days rinse with cool water and re-inflate the bag.

9. After four days, the crown should show about two inches of growth.

10. Plants that are not growing after six days should be considered dead when estimating survival.

11. Some plants may grow poorly and develop molds. Molds live on dead or injured plants. Plants with mold developing should be considered not viable.

Fields should be abandoned if more than 50% of plants are dead and dead plants are uniformly distributed. In addition, if large areas are found not viable, then those areas should be considered not productive and also be considered for abandonment.

*SOURCE: Crop Watch*

## HORTICULTURE

### Arthritis and Farming

*Linda Langelo, CSU Horticulture Program Associate*

Arthritis is a debilitating disease that afflicts some 54 million citizens in the United States. This disease does not discriminate across age, gender or race. Farmers are among the afflicted. Being a farmer is a massive job where you need your body to be flexible and in minimal pain to farm effectively. Unfortunately, farmers are at a higher risk for arthritis according to the Arthritis Foundation.

Osteoarthritis is the arthritis that most commonly affects farmers and ranchers. This is when the cartilage –the gliding surface of a joint- is destroyed. Then, the joint rubs bone on bone creating bony overgrowths called “spurs”. Osteoarthritis is a heredity disease. Being overweight can cause this as well. How? According to the Arthritis Foundation for every pound you gain adds four pounds of additional stress to your knees. Worst of all, this translates to six times the pressure on your hips.

As with gardeners, farmers do frequent heavy lifting and repetitive motions, such as constantly bending and kneeling. The average age of our farmers in the United States is 58 years. If

those farmers have been bending and kneeling for 30 or 40 of those years, it sets the stage for arthritis. The best thing to do is go to a doctor or visit a rheumatologist for a correct diagnosis. Then, there are many options such as exercises which help with strength training, range-of-motion, fitness and endurance.

The Arthritis Foundation states that resting during the day is beneficial. They also state that a good night’s sleep goes a long way to resting the joints. Pacing yourself through the day by scheduling and taking breaks. Changing the type of repetitive motion that you do over a twenty minute period. This sounds like a lot of work even for a gardener. It is more about rethinking what you do because you are learning a new habit. It is not always possible to hire someone or pass tasks along to other members of the family. Taking the time to rethink and invest in yourself helps you preserve the business you have worked your entire life. You are worth investing in your health.

If you wish to research more information go to [http://www.agrability.org/wp-content/uploads/2015/11/Arthritis\\_and\\_Ag.pdf](http://www.agrability.org/wp-content/uploads/2015/11/Arthritis_and_Ag.pdf).

## **Trees Make Us Happy!**

*Linda Langelo, CSU Horticulture Program Associate*

Study after study reports that trees make us happy. When we take the time to be near them, or walk by, or sit and stare at them whether in a hospital, our front yard or a park, they help calm us down. Trees do even more than this. According to *The New Yorker*, a Dr. Berman, a decade ago as a student at University of Michigan conducted a study where volunteers took a fifty-minute walk through a city street or arboretum. After the walk the volunteers were given a cognitive assessment. The volunteers who walked through the arboretum performed about 20% better on memory and attention. I am sure the walking had its own benefits. Dr. Berman suggests taking a walk at the end of a day. For those with clinical depression, it gives those people a bigger boost.

Not only do adults benefit from better cognition, but school children too, given the right landscape. In 2015 a study from the Centre for Research in Environmental Epidemiology (CREAL) in Barcelona, Spain found that school children exposed to greenery in their landscapes had better memory development and attention skills. Two studies done in two different parts of the world and both studies came to the same outcomes but from different age groups.

Considering the great benefits of trees, we should be very happy about what they do for us. I know our small towns don't have an alarming amount of fine particulate air pollution. But in our big cities there is a large amount of fine particulate air pollution and trees are a lifesaving plant that filter out those particulates. According to the U.S. Forest Service, in New York City, trees save an average of 8 lives per year. That might not seem like a lot. It shows us that, if we create more open spaces in cities this can create a healthier atmosphere. If every street were properly lined with trees, think of what a difference that could

make. Even living in a small town, air pollution travels. Remember the Chernobyl disaster in 1986 that released radiation from the defective reactor? Better yet think about smoke from recent wildfires. We all get something because it disperses to different locations. Nevertheless, if it is one part per million, we still benefit from keeping healthy trees on our streets. Just because the smoke is gone or the disaster has passed, it doesn't mean the particulate matter is not still being dispersed.

Besides cleaning our air, trees help patients leave the hospital a day sooner, if they can view a tree from their room. The patients use less pain medication and it reduces anger according to *Scientific American*. So request a room with a view of a tree. Trees are calming and reduce heart rates while reducing stress.

Other added benefits with trees deal with the removal of CO<sub>2</sub>. Twenty million trees will remove 10 million tons of CO<sub>2</sub> from the atmosphere. Those same trees will add 260 million tons of oxygen into the atmosphere. According to *coloradotree.org*, an adult tree can change 48 pounds of carbon every year into enough oxygen to keep two people alive. Trees reduce our ozone levels. Tree roots help keep our soil in place by preventing erosion. In heavy rains, tree leaves reduce the impact of the rain on our soil. This too prevents erosion. If you get the chance, be a silent observer the next time there is a heavy rain and watch the nearest tree to see how it changes the force of the rain hitting the ground. Think of a tree as a living umbrella.

There is more to a tree than just its beauty. Talk to those on the local tree board in your town. Encourage those members to keep replacing older trees or sick trees with new ones so the next generation(s) can benefit from these majestic living beings. So keep planting trees!

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## **Plant Select New 2018 Introductions**

*Linda Langelo, CSU Horticulture Program Associate*

From the Plant Select trials comes another round of plants added to the Plant Select list. With water continuing to be a limited and precious commodity, these plants are perfect for our gardens. Since they are

drought tolerant, they save a tremendous amount of water. Over half the domestic water we use goes to water our lawns, in contrast these are xeric plants needing little to no supplemental water once established.

This saves money on water bills and saves us from getting to the point of making a choice between having drinking water and watering our lawns.

In the Petite Series, there is only one selection for 2018:

- **Wee One dwarf English lavender** *Lavandula angustifolia* 'Wee One' – This is a dwarf, compact English Lavender which is hardy in zone 5. It will take two to three growing seasons for 'Wee One' to reach its mature growing height of ten inches. It is extremely tolerant of heat and cold. A great little plant for small spaces. Be sure to plant this in well-drained soil of either sand or loam. It is a great pollinator plant and has winter interest.

From the other plants on trial, here are the 2018 introductions:

- **Sungari redbead cotoneaster** *Cotoneaster racemiflorus* var. *soongoricus* – For over 40 plus years, this cotoneaster has survived at the Cheyenne High Plains Horticultural Research Center. The shrub has a graceful arching habit. The leaves are dark green above and gray-white beneath. In the fall it has red fruit. This plant does well in zone 3. Besides being the hardiest of all cotoneasters, this plant is resistant to many pests and diseases. So if you have a place to create some privacy or windbreak, this shrub gets to six to eight feet in height and as wide. It grows in any type of soil. It is deer resistant and a great pollinator plant.
- **Shangri-la sage** *Salvia moorcroftiana* x *indica* – This plant was discovered as a chance seedling at Suncrest Nurseries, Watsonville CA. This plant has basal leaves at the base. Wide, sturdy leaves are broad and an attractive blue grey shade. Flower stems lean over the leaves and display lavender-blue flowers with a paler lip spotted purple. This plant can flower for months. It initially starts blooming in spring. It can grow in zone 5 and in any soil type. It is deer resistant and a good

pollinator plant.

- **Thin Man Indian grass** *Sorghastrum nutans* 'Thin Man' PPAF – This grass grows to a height of six feet but remaining very thin in width of up to 24 to 30 inches. This plant was discovered from a native stand of Indian grass in Clovis, New Mexico. It has a very upright habit with thin stems and flower spikes that bloom in late summer turning to a golden-bronze-colored flowers. The seeds on the flower spikes feed the birds and small animals in the fall. This plant grows in zone 3 and grows in any soil type. It is a North American Native and grows in full sun. It is moderate to xeric with its water requirements. It is deer resistant and has winter interest. It is not a good pollinator plant.
- **SNOWMASS® blue-eyed veronica** *Veronica* x 'P018S' – Here is a glossy leaved groundcover that only reaches a height of two inches with a spread of eighteen inches. It starts blooming in spring with your spring bulbs and continues after into the summer. This veronica spreads quickly and is best used along a walkway or garden bed for edging or in the cracks of a walkway or patio. It takes a mix of sun and partial shade. It grows well in zone 3 and grows in any type of soil with a moderate to xeric water requirement. It is a deer resistant, has winter interest along with being a good pollinator plant.

I hope you give some of these new selections a try. It is not often that we have choices such as lavender for our area. In this case, one that is very compact and manageable. These plants can create a wonderful landscape for your property while leaving you little to maintain. Little to no watering except to establish the plant in the first season and no fertilizer necessary and only once to prune with the salvia and the Thin Man grass. These plants are a gardener's dream.

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## Butterflies and Moths

*Linda Langelo, CSU Horticulture Program Associate*

Come join us on Saturday, June 9 from 5 p.m. to 9 p.m. at the Welcome Center by the Pollinator Gardens. Chuck Harp from the C.P. Gillette Insect Museum in Fort Collins will train interested participants how to identify area butterflies and moths. Currently, Harp is working on a LepNet program where he is data basing the museum's butterflies and moths under a National Science Foundation Grant.

The Pollinator Gardens at the Welcome

Center are designed to attract butterflies and moths. Come and learn about Colorado's common butterflies and moths. This workshop will show you key characteristics between the difference of butterflies and moths. It will also demonstrate how you can participate in the Citizen Scientist project. Do you like to get outside and relax? Interested in visiting the Welcome Center and Julesburg Library Gardens once a week at a specified regular time frame? As a Citizen Scientist project we want to



record the types of butterflies and moths that visit the gardens.

For more information, please call Sedgwick County Extension at (970)474-3479 and speak with

Linda Langelo. Everyone is welcome. There may be a small program fee.

## AG BUSINESS MANAGEMENT

### Use Caution When Considering Industrial Hemp

*Brent Young, Regional Agriculture & Business Management Specialist*

The next couple of years will be very challenging for area farmers and ranchers as commodity prices continue to be weak. Cash market prices that just a few years ago might have offered a small profit will not cover the cost of production today. Many agricultural producers are looking for more profitable alternatives to traditional crop and livestock enterprises.

One such alternative that many farmers are considering is industrial hemp. Industrial hemp shares the same botanical name as marijuana (*Cannabis sativa*). The major difference between industrial hemp and marijuana is the Tetrahydrocannabinol (THC) content. THC is the psychoactive ingredient in marijuana that produces the “high”. According to 2014 Farm Bill, industrial hemp must contain less than 0.3% THC on a dry weight basis.

The first step a potential industrial hemp grower must take is to register with the Colorado Department of Agriculture (CDA). Registration cost include an application fee of \$500 plus \$5/acre for outdoor production or \$0.33/ square foot for indoor production. Producers must file a pre-planting, planting, and harvest report with the CDA. Industrial hemp fields and grow sites are subject to random inspection and THC content testing by the CDA at the growers expense. Fields or grow sites that have industrial hemp samples that test higher than 0.3% THC content are subject to reporting to law enforcement agencies by the CDA.

The second issue to consider is a producer’s compliance with USDA farm programs if you grow industrial hemp. The 2014 Farm Bill provided language making the production of industrial hemp possible as part of research projects conducted by state universities and state departments of agriculture however, industrial hemp is considered

to be a schedule 1 controlled substance under the Controlled Substances Act.

The CDA has reached out to the various agencies within the USDA for written guidance regarding their stance on the production of industrial hemp and USDA farm program compliance. To date none of the USDA agencies have responded in writing. The best course of action for prospective growers is to partner with a university or college in a research study to maintain your farm program compliance.

One final consideration, should you be approached by someone offering you a contract to grow industrial hemp or buy your hemp related raw products. The prospective buyer must hold a Farm Products and Commodity Handlers license issued by the CDA. A full list of licensed buyers can be found on the CDA website.

Low commodity prices have forced many producers to search for alternatives to traditional crop and livestock enterprises. Many of these alternatives provide their own set of challenges and farmers and ranchers must do their homework as they consider producing industrial hemp.

If you have questions about this topic or any other agricultural business management issue, please feel free to contact me at 970-522-7207 or by email at [brent.young@colostate.edu](mailto:brent.young@colostate.edu)

# AG MARKET PRICES

*Dennis Kaan, Golden Plains Area Director*

<b>LIVESTOCK CASH PRICES</b>			<b>Week Ending 2/23/18</b>		
			Current <sup>1</sup>	One Month Ago <sup>2</sup>	One Year Ago <sup>2</sup>
<b>Colorado Auction Feeder Cattle, Medium &amp; Large Frame #1</b>					
Steers,	500-550 lbs	/cwt	\$185.00-195.00	\$181.00-200.00	\$159.00-174.00
Steers,	600-650 lbs	/cwt	\$155.00-175.00	\$161.00-169.00	\$141.00-158.25
Heifers,	500-550 lbs	/cwt	\$160.00-175.50	\$156.50-164.00	\$141.00-151.00
Heifers,	600-650 lbs	/cwt	\$144.75-161.00	\$141.00-154.00	\$124.00-135.00
<b>Colorado Weekly Weighted Average Direct Slaughter Cattle, FOB the Feedyard After 3-4% Shrink</b>					
<u>Live Basis Steer Sales</u>	Hd Count	Wt Range	/cwt	/cwt	/cwt
Over 80% Choice	2,222	1,275-1,588	\$130.00	\$123.00	\$119.00-120.50
65-80% Choice	2,346	1,366-1,530	\$130.00	\$122.00-123.00	\$118.00-120.50
35-65% Choice				\$123.00	
0-35% Choice					
<u>Live Basis Heifer Sales</u>	Hd Count	Wt Range	/cwt	/cwt	/cwt
Over 80% Choice	1,781	1,300-1,425	\$130.00	\$123.00	\$120.00-120.50
65-80% Choice	240	1,239	\$130.00	\$123.00	\$117.50-120.50
35-65% Choice	506	1,300	\$130.00	\$123.00	
0-35% Choice					
<b>Mountain Area and Western U.S. Direct Sheep Report, Medium and Large 1-2</b>					
	Hd Count	Wt Range	/cwt	/cwt	/cwt
Feeder Lambs, CA			No Activity Reported	No Activity Reported	No Activity Reported
<b>Hogs, As of 11/18/13</b>					
Base Market Hog, 200 lb. Carcass Basis, Plant Delivered					
0.9-1.1" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$57.00-65.54	\$63.00-70.51	\$64.00-71.90
Iowa -Minnesota Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$60.00-64.25	\$64.00-71.00	\$64.00-72.00
Western Cornbelt Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$60.00-64.25	\$63.00-71.00	\$64.00-72.00
<b>LIVESTOCK FUTURES PRICES</b>			<b>2/23/18</b>		
<b>Live Cattle – CME</b>			Current <sup>1</sup>	One Month Ago <sup>2</sup>	One Year Ago <sup>2</sup>
Apr		/cwt	\$125.00	\$124.69	\$116.70
Jun		/cwt	\$116.75	\$116.17	\$106.87
Aug		/cwt	\$113.67	\$112.99	\$102.47
Oct		/cwt	\$115.61	\$114.25	\$102.52
<b>Feeder Cattle – CME</b>					
Mar		/cwt	\$145.99	\$146.62	\$125.10
Apr		/cwt	\$149.34	\$147.14	\$125.50
May		/cwt	\$149.34	\$147.04	\$124.52
Aug		/cwt	\$152.46	\$150.15	\$125.40

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

<sup>2</sup> Prices reported for the one month ago and one year ago periods 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/>

# AG MARKET PRICES

## CASH GRAIN PRICES

**2/23/18**

		Current <sup>1</sup>	One Month Ago <sup>2</sup>	One Year Ago <sup>2</sup>
<b>#1 HRW Wheat</b>				
Fleming, Haxtun, Julesburg, Holyoke, Paoli, Amherst	/bu	\$3.94-4.26	\$3.61-4.00	\$3.18-3.49
Yuma, Wray, Brush, Akron, Otis, Anton	/bu	\$3.84-3.89	\$3.48-3.53	\$3.18-3.49
Burlington, Seibert, Flagler, Arriba, Genoa, Hugo	/bu	\$3.79-3.89	\$3.53-3.63	\$3.19-3.32
<b>#2 Yellow Corn</b>				
Haxtun, Julesburg, Fleming, Holyoke, Paoli, Amherst	/bu	\$3.20-3.31	\$3.08-3.21	\$3.14-3.19
Yuma, Wray, Brush, Otis, Anton Seibert, Arriba, Burlington, Flagler, Bethune, Stratton	/bu	\$3.16-3.31 \$3.16	\$3.06-3.21 \$3.06-3.07	\$3.04-3.30 \$2.94-3.01
<b>Northeast Colorado, Western Nebraska Beans</b>				
Pinto Beans	/cwt	\$21.00	\$21.00	\$28.00
Great Northern Beans	/cwt	\$21.00	\$21.00	\$28.00
Light Red Kidney Beans	/cwt	\$35.00	\$35.00	\$33.00
<b>White Millet</b>				
E Colorado / SW Nebraska	/cwt	\$6.00-7.00 Mostly 6.50	\$6.00-6.50 Mostly 6.00	\$5.00-6.00 Mostly 5.00
<b>Sunflowers</b>				
E Colorado / SW Nebraska	/cwt	\$18.00	\$18.00	\$15.50-17.00

## GRAIN FUTURES PRICES

**2/23/18**

		Current <sup>1</sup>	One Month Ago <sup>2</sup>	One Year Ago <sup>2</sup>
<b>Wheat, Kansas City Board of Trade</b>				
Mar	/bu	\$4.51	\$4.40	\$4.38
May	/bu	\$4.64	\$4.52	\$4.45
Jul	/bu	\$4.78	\$4.66	\$4.67
Sep	/bu	\$4.95	\$4.79	\$4.81
<b>Corn, Chicago Board of Trade</b>				
Mar	/bu	\$3.66	\$3.56	\$3.66
May	/bu	\$3.74	\$3.64	\$3.73
Jul	/bu	\$3.82	\$3.73	\$3.81
Sep	/bu	\$3.89	\$3.80	\$3.86

## CASH HAY PRICES

**Week Ending 2/23/18**

		Current <sup>1</sup>	One Month Ago <sup>2</sup>	One Year Ago <sup>2</sup>
<b>Colorado Hay Report, Northeastern Areas</b>				
Large Square Bales, FOB Stack				
Supreme Alfalfa, 180+ RFV (On Contract)	/ton	\$185.00-190.00	\$185.00	
Premium Alfalfa, 150-180 RFV	/ton			\$150.00
Good Alfalfa, 125-150 RFV	/ton			\$130.00
Fair Alfalfa	/ton		\$155.00	
Utility Alfalfa Delivered	/ton			
Premium Grass (Large Squares)	/ton	\$150.00	\$170.00	
Premium Grass (Small Squares)	/bale			8.00-9.00
Straw (Large Squares)	/ton			
Corn Stalks (Large Squares)	/ton			
Oats (Large Squares)	/ton			
Cane Hay (Large Rounds)	/ton			
Millet Hay (Large Squares)	/ton			

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- 1.....New Voluntary Groundwater Reporting Program
- 2.....Kyrgyzstan Agriculture
- 3.....Pest Sweep!
- 3.....New Rules for Dicamba-tolerant Soybean Production in 2018
- 4.....Nine Things to Check Before Planting Season
- 4-5.....Scouting for Herbicide Resistance
- 5-6.....Testing Dormant Wheat for Life
- 6.....Arthritis and Farming
- 7.....Trees Make Us Happy!
- 7-8.....Plant Select New 2018 Introductions
- 8-9.....Butterflies and Moths
- 9.....Use Caution When Considering Industrial Hemp
- 10-11...Ag Market Prices