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General Spray Mixing Order

Pesticide spraying season is well upon us. Below are general guidelines for pesticide mixing orders:

- Start with tank at least 1/2 full of water
- Maintain constant agitation while loading and between each step
- Always add each ingredient separately to spray mix. Do not allow products to mix together prior to adding to tank.

Mixing Order

- 1) Fill tank half full of water
- 2) Add compatibility agent if known issues exist between products
- 3) Water dispersible products (DF, WP) – use a pre-slurry if needed
- 4) Soluble concentrates next
- 5) Agitate pre-slurry with water in the tank
- 6) Add ammonium sulfate
- 7) Add micro-nutrient products
- 8) Add soluble liquids
- 9) Add emulsifiable concentrates
- 10) Add glyphosate if using it
- 11) Add adjuvants (NIS, COC, MSO, HSOC)

Source: BASF Company

To receive an e-mail notification of publication on-line for the Golden Plains Area Agricultural Newsletter call 970-332-4151 or e-mail coopext_yuma@mail.colostate.edu

LIVESTOCK

Grazing Livestock Nutrition

Chris Shelley, Livestock Agent

As of May 10, 2016, the U.S. drought monitor provided by the USDA does not indicate any dry or drought conditions for northeastern Colorado. With early precipitation, rangeland production is off to a good start. Many livestock species have already begun grazing the shortgrass prairie. The following are a few important nutritional concepts to remember when livestock begin grazing this year.

Weed Invasion:

The variability in precipitation seen over the past few years has given rise to some weeds that may not have been as prevalent in previous years. Many rangeland weeds disrupt native ecosystems by outcompeting native species, reducing grazing capacity and utilizing rangeland resources like water. Though some weeds are not necessarily “bad” for livestock and may even be grazed, they can alter the ecological site and damage rangelands. There are however, several particularly poisonous weeds for livestock that can be found in northeastern Colorado include. Prairie Larkspur, purple locoweed, and poison hemlock all have detrimental effects on livestock that can range from poor performance to death. Surveying and monitoring a pasture for noxious weeds is well worth the effort even if it prevents just one poisoning.

Grass Tetany:

Another nutritional complication on rangeland that accompanies spring grass growth is grass tetany or milk fever. This condition is generally described as a livestock deficiency in the mineral magnesium. Lactating cattle are especially susceptible as they contribute high levels of stored magnesium to milk production. Coincidentally, lush spring grass growth can also be low in magnesium content by growing more rapidly than magnesium can be assimilated into the plant. The best way to prevent this condition is to supply a mineral that is high in magnesium. The University of Georgia Extension suggests, “a mineral mixture containing 10 to 14 percent magnesium consumed at 4 ounces per day should provide adequate magnesium.” If you notice livestock exhibiting hyperexcitability, muscular spasms, convulsions, respiratory distress or collapse, call your veterinarian immediately.

Stocking Rates and Forage Production:

Setting stocking rates is an important management tool to not only assure livestock have adequate feed but also to protect rangelands from overgrazing. It is important to consider previous stocking rates and rangeland production, but that alone is inadequate for current and future scenarios. Information that you can collect to help in setting an appropriate stocking rate are; previous stocking rates, current precipitation records, average precipitation records, and current and future drought conditions. Many of these records you can monitor yourself, but the following websites can help aid in your decision-making.

Precipitation - <http://www.coagmet.colostate.edu/> or <http://www.cocorahs.org/>

Drought - <http://droughtmonitor.unl.edu/>

The next step is to assess rangeland production and estimate what your livestock will be consuming. Whether you talk to a rangeland specialist or collect your own rangeland production samples, it is important to establish the amount of feed available. The next challenge is to predict what your livestock will consume. It is especially difficult to predict intake for grazing animals and many of the prediction models do not work under these circumstances. There are however, published observational data on what different types of grazing animals typically will consume. Many factors may affect intake but the following table will give a ballpark Estimate. Just remember that these numbers may not necessarily reflect your livestock or their intakes.

Animal Unit Equivalents (AUE) for grazing species and estimated forage intake on a dry basis.

Animal	AUE	lbs/month	lbs/day
Bull, mature	1.35	1080	34.8
Cow, 1600, w/calf	1.6	1280	41.3
Cow 1400, w/calf	1.4	1120	36.1
Cow, 1200, w/calf	1.2	960	31.0
Cow, 1000, w/calf	1	800	25.8
Cow, 1000, dry	0.92	736	23.7
Cattle, 2 year old	0.8	640	20.6
Cattle, yearling	0.6	480	15.5
Horse, mature	1.25	1000	32.3
Donkey, mature	1.25	1000	32.3
Mule, mature	1.25	1000	32.3
Sheep, mature	0.2	160	5.2
Sheep, yearling	0.15	120	3.9
Goat, mature	0.15	120	3.9
Goat, yearling	0.1	80	2.6
Llama, mature	0.3	240	7.7
Alpaca, mature	0.2	160	5.2
White-tailed Deer, mature	0.15	120	3.9
Mule Deer, mature	0.2	160	5.2
Elk, mature	0.6	480	15.5
Antelope, mature	0.2	160	5.2
Bison, mature	1	800	25.8
Bighorn Sheep, mature	0.2	160	5.2
Moose, mature	0.85	680	21.9

Rangeland is the most important resource for most livestock producers. By taking the time to make information based management decisions, livestock nutrition, health and performance along with rangeland health will all be benefited.

AGRONOMY

2016 Colorado Wheat Field Days

The Colorado Wheat Field Days will be held June 9-15 at eleven different variety trial sites throughout eastern Colorado. The field days are jointly hosted by the Colorado Wheat Administrative Committee (CWAC), Colorado Association of Wheat Growers (CAWG), Colorado Wheat Research Foundation (CWRWF) and Colorado State University (CSU) Cooperative Extension and Agricultural Experiment Station.

CWAC President, Dave Anderson of Haxtun, encourages all wheat farmers to attend. “Wheat Field Days are rapidly approaching. Please try to attend the one nearest to you to see how the old favorites look and how the new varieties in the breeding pipeline compare in your area. Hope to see you at one or more!” said Anderson.

The field days will highlight new hard red and hard white winter wheat varieties developed by CSU and other public and private breeding programs in the Great Plains region. Attention will also be given to variety selection, special areas of emphasis in wheat breeding at CSU and progress and plans with CWAC funding for CSU wheat research.

This year's wheat field day program will include plot tours at eleven trial locations that will each last about an hour. All field day locations will include refreshments or a meal.

Each location will feature a yield contest, in which participants will guess which variety will yield the most bushels. The tie breaker will be the number of bushels the variety yields. Prizes will be \$25 in cash.

CSU Extension Agronomist, Dr. Jerry Johnson, will review results from the 2015 testing program and highlight critical areas of emphasis related to agronomic production management. Dr. Johnson will help farmers compare public versus private varieties, and discuss the characteristics and traits related to each.

CSU Wheat Breeder, Dr. Scott Haley, will discuss each variety and experimental line in the trials as well as wheat-related research issues including: hard white wheat development, the CWRWF Ultragain® Premium program, Wheat Stem Sawfly resistance, Clearfield® wheat, progress on new wheat research initiatives at CSU, and exciting new hard red and hard white experimental lines in the pipeline.

The trials include the “mainstay” varieties with which farmers are familiar, in addition to an exciting group of new entries from public and private breeding programs throughout the region.

Rick Novak, Director of Seed Programs at Colorado State University, encourages farmers to plan ahead by contacting their seed suppliers and discussing seed treatment options as well as wheat variety selection. He will review certified seed sales from last fall, and discuss the certification process with farmers. Novak will also be discussing the Plant Variety Protection Act, and the benefits and impacts to farmers that it imparts.

All wheat farmers are urged to attend at least one of the Colorado Wheat Field Days. For more information, visit www.coloradowheat.org or call 1-800-WHEAT-10

CSU Releases New Wheat – Avery

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

Colorado State University is pleased to announce the release of Avery, a new hard red winter wheat variety. Consisting of a cross between TAM 112 and Byrd the original cross occurred in 2009, and as result of doubled haploid breeding technology, rapid progression and testing enabled a release much sooner than normal. Registered and a limited amount of certified seed of this new variety will be available to producers this fall.

This awned, medium-tall, white chaffed variety has placed consistently high in yield trials in eastern Colorado, yielding an average of 94.7 bushels per acre across 4 irrigated northeast Colorado locations. Avery performed well also in dryland trials, averaging 42 bushels per acre across 5 southeast Colorado locations, while Byrd averaged 40.5 bushels per acre at the same sites. Avery is a medium maturity variety that has a medium-

long coleoptile. This variety, however, is susceptible to current races of leaf rust and stem rust, and is moderately susceptible to stripe rust. However, Avery is resistant to the wheat curl mite which transmits wheat streak mosaic and other viral diseases. It is resistant to Greenbug, tolerant to Barley Yellow Dwarf virus, and only moderately susceptible to Wheat Streak virus.

Overall milling and baking characteristics of Avery are very good, similar to Byrd but with slightly larger kernels. Avery's milling rating is good while the baking rating is listed as very good, indicating solid scores for bread making. As a result, quality characteristics for Avery make it a desirable variety for the milling and baking industries.

Overall, Avery out yielded Byrd and Hatcher at most of the tested trial locations. Test weights are very similar to Byrd, but higher than Hatcher.

Avery is a Colorado State University wheat that will be marketed by the Colorado Wheat Research Foundation (CWRF) under the PlainsGold brand (PlainsGold.com). The PlainsGold brand was introduced in 2012 and offers farmers innovative new varieties such as Byrd and Brawl CL Plus in addition to the same great varieties trusted in the past – like Hatcher and Snowmass. The PlainsGold brand was created by the CWRF with the specific purpose of marketing all Colorado State University (CSU)-developed certified wheat varieties.

The PlainsGold brand is the result of an extensive project, which looked at ways to increase certified seed sales and thereby increase research funding to the CSU wheat-breeding program. A task force, which included seed growers, wheat farmers, members of the CSU wheat-breeding team, CWRF staff, and marketing consultants, researched opportunities to expand the organization's market reach and offer more of the industry-leading varieties to a larger audience of wheat farmers. All previously developed varieties along with new and future varieties developed by CSU will be marketed and sold under this brand name. Further, royalties from all PlainsGold varieties will continue to be reinvested into the CSU wheat-breeding and wheat related research programs. This further enhances funding provided to the state wheat assessment paid by all Colorado wheat farmers.

The following are Colorado Seed growers who may have Avery for sale this fall:

Anderson Wheat Farms
11150 CR 91
Haxtun, CO 80731
(970) 520-4143
dla.awf@pctelcom.coop

Curtis Lewton
5000 E 144th Ave.
Bennett, CO 80102
(303) 644-4327
cdlewtan@aol.com

Pachner Agri-Enterprises
20998 CR 19
Akron, CO 80720
(970) 554-0645
pachnerfarms@wildblue.net

Andrews Brothers Seed
37803 CR M
Yuma, CO 80759
(970) 848-0709
sandrews@plains.net

Kochis Farms
44819 Rd 86
Matheson, CO 80830
(719) 775-2596
jkochis@wildblue.net

Sand Creek, Inc.
21899 Rd 59
Sheridan Lake, CO 81071
(719) 729-3367
burlscherler@hotmail.com

Carlson Grain Company
20065 CR 28
Julesburg, CO 80737
(970) 474-2715
jcarlson@kci.net

Mertens Bros., Inc.
62201 West CR 86
Raymer, CO 80742
(970) 437-5358
jmertens@wigginstel.com

Terry Ring
40305 CR 78
Crook, CO 80726
(970) 253-5009
ringgag@kci.net

Cooksey Farms
41509 Colorado 52
Roggen, CO 80652
(303) 849-5214
coofarm1@aol.com

Midcap Seed & Grain
1501 Rd 3
Wiggins, CO 80654
(970) 483-5265
midcapfarms@wigginstel.com

Tim Stahlecker
22481 CR 38
Bethune, CO 80805
(719) 342-3197
stahletr@rebeltec.net

Avery, along with other industry and Colorado State University wheat varieties will be featured at this year's wheat field days scheduled for the first two weeks in June. Check local listings (csucrops.com) for field day dates and locations. For more information about Avery, contact the Colorado Wheat Research Foundation at coloradowheat.org or PlainsGold.com.

Pest Sweep Program a Success!

R.F. Meyer, Brian Talamantes, and Dennis Kaan

Colorado State University's Pest Sweep program collected a total of 525 pounds of hazardous waste during its second year of collections. As a result of this program, a total of 4,725 pounds of hazardous chemicals will not end up in our local landfills! The Pest Sweep program collected pesticides from 5 locations within Colorado State University Extension's Golden Plains Area. Collection sites were located in Julesburg, Holyoke, Yuma, Akron, and Burlington.

"We collected some pretty nasty stuff," says Ron Meyer, Golden Plains Area Agronomist. Multiple containers of DDT, a pesticide that was banned in 1972, were brought in. Dieldrin, a pesticide banned in the 1970's was also received. One package contained both lead and Arsenate, which was actually used in vegetable gardens a long time ago. "These chemicals have been stored in sheds and garages for a very long time and needed to be disposed of properly," states Meyer. Chemicals collected were packaged in hazardous waste containers and transferred to a hazardous waste contractor who transported them to its facility for incineration. 4,725 pounds of chemicals that have no use are now out of our communities. "People who brought these chemicals in for proper disposal, care about both the environment and the communities they live in," says Meyer.



Brian Talamantes, Area Extension Agent working at Pest Sweep.

Pictured below are hazardous waste collection containers.



Ten Things to Check Before Planting Season

R.F. Meyer, Area Extension Agent (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 which space seed drop 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 can develop a small dog ear flap on the left side of the seed tube. If so, replace them. Smooth seed delivery will pay dividends.
7. Closing Wheel System. For cool, moist planting conditions in heavy soils, take a look at running one spike wheel (15") on one side and one rubber wheel (13") on the other side. 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 which may be needed for some soil situations. Make sure there is a good seed to soil contact.
8. Closing Wheel Alignment. With your planter setting on a 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 to 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 and move residue, especially through areas of thick residue.
10. Improve seed germination with seed firmers.

SOURCE: Precision Planting, Inc.

PEST MANAGEMENT

It Is Time for Monitoring Alfalfa Weevil in Colorado

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

Alfalfa weevil larvae feeding in the folded leaves can heavily damage stem terminals, but initial damage is not always clearly visible. The closed, overlapping foliage of the stem terminals should be unfolded to detect feeding damage. Third and fourth larval instars cause most of the economic damage, so initiating sampling at the peak occurrence of second instars should provide adequate sampling prior to economic weevil populations.

Field damage can be recognized on heavily infested stands as a grayish or frostlike appearance due to the dried defoliated leaves. At high weevil densities, foliage can be stripped; leaving only skeletonized and ragged leaf fragments and stems. Yield losses of 30 to 40 percent of the standing hay crop are possible under extreme population levels. Damage also may reduce hay quality due to loss of leaf tissue, leaving only the lower quality stems.

Damage to regrowth buds may occur when the plants break dormancy and after first cutting. Larval feeding on the regrowth after first cutting may be concentrated in strips coinciding with windrow locations, especially if the first cutting was taken early due to heavy weevil infestation and larvae survived under the windrows.

Damage to regrowth may retard plant growth and result in yield reduction and encourage weed establishment.

Estimation of the weevil instars present in the field can be calculated using degree-days. Alfalfa weevil development increases at a nearly constant rate as the temperature rises above 48°F (9°C). The amount of warm weather required for weevil larvae to complete development is measured in units of degree-days. For the alfalfa weevil, degree-days are accumulated after 1 March for each 24-hour period in which temperatures exceed 48°F (10°C).

Management of the Weevil: Insecticide applications and early harvesting are the most common growing season management strategies.

The simple economic threshold for a sweep sample is 20 larvae per sweep. The simple economic threshold for the stem sampling method is 1.5 - 2 larvae per stem. For calculating detailed economic threshold, check the High Plains IPM guide at www.highplainsipm.org.

Cultural Control: A non-insecticide control measure for alfalfa weevils is an early first harvest if an economic infestation is not detected until late in the growth of the first cutting. Harvesting alfalfa in an immature stage provides good control of larvae for the first crop. Rapid removal of hay will accelerate larval mortality due to desiccation by direct sunlight. An early first cutting tends to cure more rapidly because lighter windrows dry quickly, and forage quality is enhanced by higher crude protein and lower fiber content. Additional steps should be taken to ensure that surviving larvae do not cause economic damage to the regrowth. If larval survival under the windrows is high and baling is delayed (e.g., due to rainfall), damage to regrowth may be exacerbated. Regrowth should be inspected at a height of one to two inches to determine larval density.

Chemical Control: If damage becomes unacceptable as harvest approaches, an early harvest or "rescue" insecticide treatment may be necessary. Use care in applying insecticide when alfalfa is approaching bloom: refer to the Pollinator Protection section for guidelines on minimizing insecticide contact of pollinators. Also, consider the waiting period before harvest for different insecticides. Generally, harvest or insecticide applications should happen before bloom if weevils are a problem. For effective products check that www.highplainsipm.org.



Lower Population of Grasshoppers Predicted in 2016, Still Monitoring Is Required

Assefa Gebre-Amlak and Frank Peairs, Colorado State University Extension

According to the 2015 USDA APHIS adult grasshopper counts, there were low to moderate population of grasshoppers in north eastern Colorado (Golden Plains Area) last year with the exception of a few spots with higher risk in some south eastern counties (USDA 2016 Rangeland Grasshopper Hazard map). Moderate population of grasshoppers reported from Adams and Weld counties in the Front Range area.

We encourage ranchers and producers to monitor grasshopper situations in your area in those counties with moderate or higher risk of the hazard. The rest of Colorado had much lower counts of the insects and no risk of grasshopper infestations and damage expected in 2016. For details of grasshopper specific hazards maps for your areas/counties, please contact USDA APHIS Colorado office at: 303-371-3355.

Generally, grasshoppers have one generation per year. Eggs are deposited in the ground in the fall. The eggs hatch in the spring and summer (late May through early June) and hatch is dependent on soil temperature, which differs for different species.

Weather conditions will determine how much of the damage potential will be realized in those areas with light to moderate populations of grasshoppers. For example, the cool wet weather conditions our state has been enjoying may cause enough mortality in immature grasshoppers to prevent outbreak. Most grasshopper outbreaks are associated with drought conditions in previous years.

The simple economic threshold for grasshoppers in rangeland is 15-20 grasshopper nymphs per square yard. This number is equivalent eight to ten adult grasshoppers per square yard. However, the economic importance of an infestation is affected by such factors as range condition, cattle prices, and treatment costs. CARMA is a computer program that allows the landowners to include these factors in their treatment decisions. CARMA is available at the same website as the hazard map mentioned earlier.

Treatment options for grasshopper management are based on the Reduced Agent and Area Treatment (RAAT) strategy, which results in untreated swaths and swaths treated with reduced chemical rates. Using lower rates and leaving untreated areas reduces treatment costs by as much as 50% and preserves biological control. Grasshoppers move constantly, insuring that they will enter a treated swath and that levels of control will be similar to complete coverage applications. Large infestations can be treated aerially with malathion, carbaryl or diflubenzuron (Dimilin). Smaller infestations can be controlled with RAAT treatments applied aerially or with all-terrain vehicles appropriately equipped to apply carbaryl or diflubenzuron. These insecticides do not have grazing restrictions when used in the rangeland.

All-terrain vehicles also can be used for spot treatments of egg-laying sites such as pastures, ditches, and untilled field margins. Grasshopper nymphs tend to remain concentrated in their hatching areas for some time after they emerge, where the application of an approved insecticide can provide effective and economical control of localized infestations.

Dimilin (diflubenzuron) treatment for grasshoppers should be applied in 2nd to 3rd instar stage because growth regulator will not control adults. This product has no grazing restrictions.

Strategies for managing grasshoppers in cropland are somewhat different. Recommendations for specific crops can be found in the High Plains Integrated Pest Management Guide, (www.highplainsipm.org).

AG BUSINESS MANAGEMENT

Challenges for Farmers on the Financial Rollercoaster

R. Brent Young, Regional Extension Specialist

I chose to use the topic of a presentation I attended at the Extension Risk Management Education (ERME) National Conference held in Ft. Worth, TX, April 27-28 as the title for this week's column. The ERME is an annual event attended by ag economist from across the U.S. and this year's conference focused on the effect of lower commodity prices on farm profitability.

The conference session based on the title of this week's article was presented by Dale Nordquist of the University of Minnesota. Dale reviewed financial information gathered from farmers who belong to the Southern Minnesota Farm Management Association during the years 1997-2014. During this time period farmers saw median farm income rise to a record high of more than \$195,000 in 2012 and then drop to slightly more than \$27,000 in 2015. From 2012 to 2014 farm net worth has risen from more than \$2.8 million to over \$2.9 million.

This discrepancy in the direction of median farm income and net worth has led many ag economists to state that the current financial issues facing agriculture are cash flow problems not balance sheet problems. Cash flow problems require a totally different set of strategies than balance sheet issues. In times of cash flow problems, controlling costs are paramount.

What are some techniques that producers can use to control costs? A good starting point is to shop for inputs. Our current financial situation in agriculture may force us to look beyond that traditional supplier chosen years ago based on convenience and search for the lowest price, or at least hone our negotiation skills with all of our

suppliers. Can we make use of generic inputs over name brands? Should we consider seeking out a second opinion when it comes to fertilizer and chemical recommendations?

Other suggestions include; looking into flex leases; reduce capital purchases; control family living expenses; restructure debt; increase off-farm income; cut overhead; and sell unproductive assets. The CSU Agriculture Business Management website <http://www.coopext.colostate.edu/ABM/> contains many helpful fact sheets and decision aids that can assist farmers and ranchers in facing the “Challenges on the Financial Rollercoaster”.

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.

Estimated 2015 ARC-CO Payments

R. Brent Young, Regional Extension Specialist

On February 18th the National Agricultural Statistics Service (NASS) released the county yield data for the 2015 crop. That leaves only the Marketing Year Average (MYA) price as the remaining piece of information needed to determine if an ARC-CO payment will be triggered and what the amount the payment might be.

I have had the privilege of working with Kelly Huenink, Associate Professor of Ag Business and Ag Economics at Northeastern Junior College (NJC) and students in her farm and ranch management class to develop a series of calculators to estimate ARC-CO payments. The calculators are going through their final testing and should be posted to the CSU Agriculture & Business Management website in a few days.

Using the calculators I can report the estimated 2015 ARC-CO payments for corn for the six of the seven counties served by the CSU Sterling Regional Engagement Center. The March 9th edition of the World Agriculture Supply & Demand Estimate reported a 2015/16 projected price range for corn at \$3.50-\$3.70/bu. In order to provide a very conservative estimate the upper range price estimate of \$3.70/bu. was used as the estimated MYA price.

It is important to note that the payments are estimates and are subject to change. The information provided is for educational purposes only and CSU Extension and NJC makes any warranty expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information provided.

Estimated 2015 ARC-CO payments for corn, selected Colorado counties:

Kit Carson \$93.10/acre irrigated \$0.00/acre dryland
Logan \$97.87/acre irrigated
Morgan \$82.52/acre irrigated
Phillips \$67.86/acre irrigated \$33.86/acre dryland
Sedgwick \$90.99/acre irrigated
Yuma \$84.73/acre irrigated

To calculate a total payment, multiply your corn base acres by .85 and then by the estimated payment per acre. If a payment is triggered, producers would receive the funds in the form of an electronic deposit after October 2016.

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.

HORTICULTURE

Plant Select 2016 Introductions

By Linda Langelo, CSU Horticulture Program Associate

It is always exciting to see what's new in Plant Select® Program introductions. This program provides us with some excellent choices that match our environmental conditions. Take a look at the following six introductions:

Red Mountain® Flame Ice Plant, *Delosperma 'PWWG025'*: This South African plant is vigorous and hardy. During late spring and summer there will be blazing orange-red flowers. It was chosen for its superior flower size, unusual flower color and attractive habit. This succulent stays evergreen through the winter. If you chose a location that stays wet in the winter, it can cause die-back. Trim off what has died in the spring. Overall, it does well in a variety of sites, but grows best in well-drained amended soil with occasional watering. Use it as a ground cover since it grows to a height of 2 inches and a width of 24. As added bonuses, it is deer resistant and good for pollination.

Autumn Sapphire™ Sage, *Salvia reptan 'P0165'*: This plant is also known as West Texas grass sage. It blooms late in the season on plants that get up to 4 feet tall. It was chosen for its compact and consistent growth habit. In my opinion, it is great to have selections which bloom late and add a balance of color throughout the season. These sapphire-blue flowers are a rich source of nectar for our pollinators when other flowers have faded. It does best in well-drained sandy soil. It typically reaches 24 inches in height and 24 inches wide. This plant does well in dry to xeric conditions.

Alan's Apricot Ice Plant, *Delosperma 'Alan's Apricot' PPAF'*: This is the hardiest and longest-blooming ice plant of all the Plant Select® Selections. Though it can grow in a variety of soil types, it grows best in well-drained amended soil with occasional watering. This ice plant can also experience die-back if planted in a wet location during winter. This plant was brought to Plant Select® by Alan Tower of Spokane, Washington. This is one of the showiest and magical blooming ice plants with its 2 inch blossoms which go from true orangey-apricot to soft orangey-apricot and back again through the season. This plant is deer resistant and is used by pollinators.

Standing Ovation Little Bluestem, *Schizachyrium scoparium 'Standing Ovation' PP25, 202'*: A North American native, warm season grass that does well in poor, dry soils. Talk about extending seasonal color, this plant has spiked green leaves that change to shades of red and purple in the fall. If you enjoy leaving the seed heads on grasses throughout winter, this plant seed heads remain upright through the winter. With the spiked green leaves, this grass retains a tight habit all season including winter. This plant was brought to Plant Select® Selections by North Creek Nursery. This grass will reach a height of 36 inches and a width of 18 inches. It is deer resistant and is not used as a nectar plant for pollinators.

Mini Man™ Dwarf Manchurian Viburnum, *Viburnum burejaeticum 'P017S'*: This is a compact viburnum which has interest all through the year. In spring it has white flowers, in the summer it has medium green soft felt-like leaves, in fall it has red fall leaves and in winter it has persistent red to blue-black fruit. This plant is native to Russia and northern China. Therefore, it is hardy to zone 3. Fort Collins Wholesale Nursery has introduced this plant to Plant Select® Selections. After the flowers bloom in spring, be sure to prune the flowers in early summer. This plant tolerates clay or sandy soil, but prefers loam soils. The height of this shrub reaches to 4-6 feet and the width to 4-6 feet.

Dog Tuff™ Grass, *Cynodon 'PWIN04S'*: This is an African grass that resembles our American buffalo grass. As an added bonus, it is a sterile hybrid that won't escape into the wild. It has several things going for it such as very drought tolerant, very resistant to dog urine and loves full, hot sun. For more information and to view a You Tube video go to the following link: <http://plantselect.org/learn/dog-tuff-grass-everything-you-need-to-know/>

I hope you give some of these plants a try in your garden. If you go to the following link, you can click on Where to Buy and find a nursery which has the plant you want: <http://plantselect.org/plants/new-for-2016/>. Happy planting!

Plant Select Petites

By Linda Langelo, CSU Horticulture Program Associate

In 2013 Plant Select® Program introduced a selection of petites for the garden. These plants can be used for smaller gardens, containers, rock gardens, ground covers, borders and more. These plants go through the same trials as other Plant Select® introductions. This year there are three choices for your gardens. The choices are as follows:

Yellow Stardust Draba, *Draba rigida*: These have bright yellow starry flowers on the top of tight green cushion plants. Since this plant is a slow grower keep it away from more aggressive plants. This plant would do well in a container or rock garden that has sandy well-drained soil. The plant will get to a height of 3 inches and a width of 10 inches. This plant will need moderate or regular watering and becomes xeric. This is not a deer resistant plant. It is great for pollinators.

Blue Jazz Pinyon Pine, *Pinus monopylla* 'Blue Jazz': If you are into conifers add this to your collection. This is the most ornamental of all the dwarf pinyon pines. Its needles have a true-blue color while the overall habit of the shrub stays as a globe-shaped form. This shrub prefers sandy soil. It obtains a height of 24 inches by a width of 24 inches. Perfect for small places and great to use as a grouping. It is deer resistant, but adds no value for pollinators. Blue needles are good for winter interest. Continuing with the xeric water requirements of other pinyon pines, this shrub does equally well in dry soil. This pinyon was collected by a noted plantsman in Denver, Jerry Morris.

Moroccan Pincushion Flower, *Pterocephalus depressus*:

A native of the Moroccan Atlas Mountains possesses year-round ornamental features. This plant has textured evergreen mat of greyish leaves, with short-stemmed pincushion-like dusty-rose-colored flowers which turn into attractive silvery seed heads. This plant prefers well-drained sandy soil. It does well in moderate to xeric conditions. This plant obtains a height of 3 inches and width of 15 inches. It can be used in gardens, containers, and raised beds or even used as a ground cover.

Sustainable Garden Certificate

By Linda Langelo, CSU Golden Plains Horticulture Associate

Spring is here and summer is quickly approaching. Think about supporting Golden Plains Extension Master Gardeners with this new initiative. The Colorado Master Gardeners (CMG) cannot do their projects without your support. Through your support you will support your own garden, the environment, local pollinators of all types and CMG community projects.

What is a sustainable garden? This type of a garden embraces gardening techniques such as xeriscape principles which teach gardeners conservation with watering techniques. Sustainable gardens also embrace pollinator friendly plants. The use of native plants is strongly encouraged for the reduction in applied herbicides, pesticides and fertilizers. The use of host and nectar plants is also strongly encouraged for feeding and shelter for pollinators. The non-native plants also attract many pollinators and serve as host plants as well.

The Golden Plains Area Extension is giving gardeners the opportunity to have their gardens certified as a *sustainable garden*. The application can be used as a guide for those who might not think they qualify to have their garden certified as a "*Sustainable Garden*." For those gardeners who already have a garden that embraces xeric principles and/or pollinator friendly plants, then come into your local Extension Office and pick-up an application. If your garden becomes certified as a "*Sustainable Garden*," you will receive, for a small cost, a sign to post in your garden, a certificate and help support the local work of Colorado Master Gardeners.

Once you return your application back to the local Extension Office, we will review your application. If you have your landscape designed with native plants, non-natives and/or demonstrate the principles of xeric gardening, we want to know. We ask in the application for you to take photos of your garden. Please follow

the instructions in the application. We hope that you will share. We hope that you will support the Colorado Master Gardeners.

If you have any questions, please call Linda Langelo, CSU Golden Plains Horticulture Associate at (970) 474-3479. We hope that you join this effort. If your garden doesn't have any native plants or xeric principles come in and find out. There are some small changes you can make which have a great impact in our world.

Freeze and Borer Damage

By Linda Langelo, CSU Horticulture Program Associate

Is your tree missing bark? One might think that our vertebrate friends are the culprits. We are quick to blame the squirrel, voles, deer mice or a cottontail for removing the bark on our trees. There are trees with greater problems that may not get readily noticed until the bark starts to fall off the tree. In the picture below, we see the results of freeze and borer damage. If we could look closer at the picture, we would see horizontal cracks within the trunk of the tree. These cracks are a result of severe damage from freeze damage sustained by the hackberry. Aside from the cracks are holes that have been created from borers.



Two of the most common borers associated with hackberry trees are redheaded ash and flatheaded appletree borers. Both of these borers will attack hackberries under stress or with reduced vigor. Tree under stress can lack proper water or oxygen to the root zone, high root competition, soil compaction, planted in the wrong soil or altitude or exposure to name a few. Most insects are host specific. Redheaded ash borers will also attack ash trees in poor health. Since borers are difficult to control once inside a tree, the best thing to do is to keep the tree out of stress.

Missing bark doesn't always mean that our neighborhood vertebrate is responsible.

Photo Credit: Donna Davis, CSU Forest Service.

Crevice Gardens

By Linda Langelo, CSU Horticulture Program Associate

This is a new trend which embraces large and small spaces for gardening. You can see examples of this at the Denver Botanic Gardens. This style of gardening originated from the Czech Republic. Using vertical and angular lines with flat stones like pieces of flagstone. In the crevices between the vertical stones place a mix of soil which has 1/2 soil and 1/2 large perlite (or small crushed gravel or expanded shale pellets) and Yum Yum Mix. I prefer using small crushed gravel and/or expanded shale pellets. Yum Yum Mix is a premium blend of organic and natural alfalfa meal, cottonseed meal, greensand, kelp meal, rock dust, rock phosphate, humate and dry molasses. In case you are wondering what dry molasses does for the mix it adds carbohydrates, sugar and trace elements that are beneficial to soil organisms. It both attracts them and feeds them.

This type of gardening is a way of growing alpine plants. But you can also use crevice gardens for growing bigger plants such as cold hardy cacti, succulents, xeric plants and larger plants with a low water requirement. Some of these are lavender and penstemon. The key is to have them well-drained. The vertical rocks and the gravel all help retain water and keep the soil environment moist and well-drained at the same time. It sounds odd to be asking a gardener to keep something moist and then well-drained at the same time. Gravel and light soil is what it takes to accomplish that technique.

These gardens can be as large or small as you wish. You can grow a lot in a crevice garden. If you like having a wider variety in your landscape, this is one way to achieve that goal. Once you pick a location and it is best in a sunny location, set the flagstone or slate in vertical position, fill between the stone with your soil mix and then place your plants. To be able to plant your plants between the flagstone or slate, wash the soil off and it is easy to set the plants in as bare root. Since it is necessary to plant the plants bare root it is best to create this type of garden in early spring or fall. The temperatures are cooler and will prevent damaging any roots which would be damaged in the hot summer weather. The soil mix described above is a well balanced mix and you will not need to fertilize your plants.

For all you brave gardeners who want something unique in your garden, happy crevice gardening!

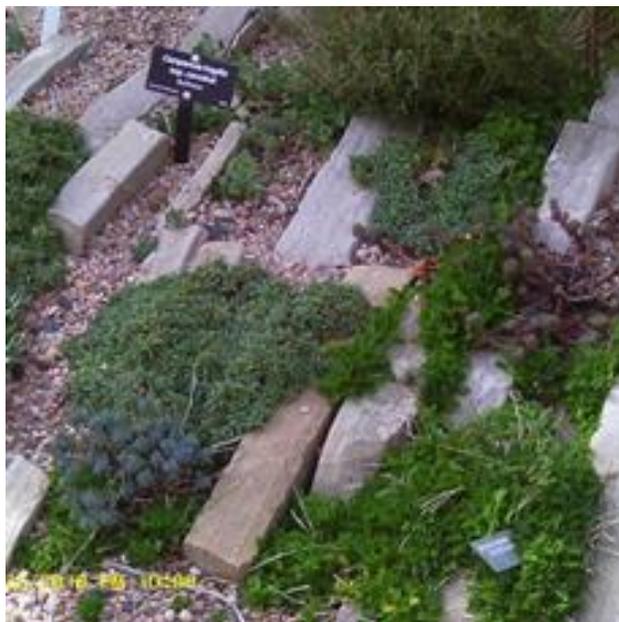


Photo by Linda Langelo

AG MARKET PRICES

Dennis Kaan, Golden Plains Area Director

LIVESTOCK CASH PRICES				Week Ending 5/20/16		
				Current ¹	One Month Ago ²	One Year Ago ²
Colorado Auction Feeder Cattle, Medium & Large Frame #1						
Steers,	500-550 lbs	/cwt			\$187.00-192.50	\$281.00-288.00
Steers,	600-650 lbs	/cwt	No Market Data		\$173.50-184.00	\$259.00-265.00
Heifers,	500-550 lbs	/cwt	Available		\$169.00-173.00	\$233.00-241.00
Heifers,	600-650 lbs	/cwt			\$150.00-155.00	\$207.50-217.50
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	277	1,450	\$130.00		\$127.00-127.50	
65-80% Choice	364	1,325-1,369	\$129.00-131.00		\$127.00-127.50	
35-65% Choice	1,596	1,275-1,375	\$129.00-131.00		\$127.00	\$162.00
0-35% Choice						
<u>Live Basis Heifer Sales</u>	Hd Count	Wt Range	/cwt		/cwt	/cwt
Over 80% Choice	112	1,300	\$130.00		\$127.00-127.50	
65-80% Choice	633	1,175-1,350	\$129.00-130.00		\$127.50	\$162.00
35-65% Choice	548	1,150	\$130.00			
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		70-90	No Report		\$150.00	No Report
		90-110				
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	\$68.00-76.75		\$57.00-67.00	\$70.50-79.98
Iowa -Minnesota Daily Negotiated Purchases 200 lb Carcass Basis						
	1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt	\$69.00-76.75		\$57.00-67.00	\$77.00-80.00
Western Cornbelt Daily Negotiated Purchases 200 lb Carcass Basis						
	1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt	\$69.00-76.75		\$57.00-67.00	\$70.50-80.00
LIVESTOCK FUTURES PRICES				5/20/16		
Live Cattle – CME				Current ¹	One Month Ago ²	One Year Ago ²
	Jun	/cwt	\$121.05	\$124.72	\$152.12	
	Aug	/cwt	\$117.45	\$114.65	\$150.70	
	Oct	/cwt	\$117.10	\$111.55	\$152.60	
	Dec	/cwt	\$117.37	\$111.45	\$154.15	
Feeder Cattle – CME						
	May	/cwt	\$148.62	\$147.95	\$219.00	
	Aug	/cwt	\$147.92	\$142.45	\$218.00	
	Sep	/cwt	\$146.02	\$142.10	\$217.00	
	Oct	/cwt	\$144.07	\$141.57	\$216.30	

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 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/>

CASH GRAIN PRICES**5/20/16**

		Current ¹	One Month Ago ²	One Year Ago ²
#1 HRW Wheat				
Fleming, Haxtun, Julesburg, Holyoke, Paoli, Amherst	/bu	\$3.53-3.56	\$3.72-3.74	\$4.99-5.00
Yuma, Wray, Brush, Akron, Otis, Anton	/bu	\$3.54-3.62	\$3.72-3.77	\$4.93-5.01
Burlington, Seibert, Flagler, Arriba, Genoa, Hugo	/bu	\$3.59-3.62	\$3.82-3.87	\$4.97-5.07
#2 Yellow Corn				
Haxtun, Julesburg, Fleming, Holyoke, Paoli, Amherst	/bu	\$3.47-3.60	\$3.28-3.37	\$3.40-3.65
Yuma, Wray, Brush, Otis, Anton	/bu	\$3.51-3.65	\$3.35-3.50	\$3.38-3.65
Seibert, Arriba, Burlington, Flagler, Bethune, Stratton	/bu	\$3.45-3.65	\$3.27-3.32	\$3.25-3.35
Northeast Colorado, Western Nebraska Beans				
Pinto Beans	/cwt	\$26.00-30.00	\$24.00	\$23.00
Great Northern Beans	/cwt	Not Established	\$24.00	Not Established
Light Red Kidney Beans	/cwt	Not Established	Not Established	\$48.00
White Millet				
E Colorado / SW Nebraska	/cwt	\$5.50-6.50 Mostly \$6.00	\$5.50-6.50 Mostly \$5.75	\$6.50-7.50 Mostly \$7.00
Sunflowers				
E Colorado / SW Nebraska	/cwt	\$17.00	\$16.25-17.00	\$20.00-21.00

GRAIN FUTURES PRICES**5/20/16**

		Current ¹	One Month Ago ²	One Year Ago ²
Wheat, Kansas City Board of Trade				
Jul	/bu	\$4.67	\$4.67	\$5.15
Sep	/bu	\$4.78	\$4.74	\$5.23
Dec	/bu	\$4.96	\$4.83	\$5.37
Mar	/bu	\$5.13	\$5.00	\$5.51
Corn, Chicago Board of Trade				
Jul	/bu	\$3.94	\$3.71	\$3.60
Sep	/bu	\$3.96	\$3.75	\$3.66
Dec	/bu	\$3.99	\$3.75	\$3.77
Mar	/bu	\$4.06	\$3.81	\$3.88

CASH HAY PRICES**Week Ending 5/20/16**

		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			
Premium Alfalfa, 150-180 RFV	/ton		\$115.00	
Good Alfalfa, 125-150 RFV	/ton			\$100.00
Fair Alfalfa	/ton			
Utility Alfalfa Delivered	/ton			
Premium Grass (Large Squares)	/ton	\$167.00	\$85.00	\$175.00
Premium Grass (Small Squares)	/bale	\$5.00		\$5.00
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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GOLDEN PLAINS AREA AG NEWSLETTER

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