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SEPTEMBER 2017**A New Face for Golden Plains Area Weed Science**

John Spring, Area Extension Agent, Weed Science and Agronomy

I'm excited to join the Golden Plains Area Extension Team as the agriculture agent in Sedgwick County. On an area basis, I will be providing weed science programming across the Golden Plains.

In July, my wife and I relocated to Colorado from eastern Washington, where I recently finished graduate school in applied weed science at Washington State University. Most of my research there was done in dryland wheat-fallow production, where I focused on weed biology, herbicide resistance, and improved herbicide programs in chemical fallow. While I hope to continue working in dryland production, I'm also excited for the opportunity to work in irrigated systems, and in all of the crops grown in the Golden Plains Area.

Extension programs should be locally focused and community-led, and I'd like to invite any and all input from the community regarding the topics and directions you would like to see for Extension weed science in the Golden Plains. While traditional educational programs will continue to be a cornerstone of Extension, for many of our emerging weed management challenges (herbicide resistance, for example) much of the knowledge we need has yet to be developed. Applied research and demonstration projects are needed in these situations, and I plan to make them an important part of the program. As an Extension scientist, part of my job is providing the scientific knowledge to conduct these projects. The more important part though, is to listen to the producers, crop consultants and others directly in the day to day of crop production and weed management to identify the right problems to investigate, and to cooperate in developing solutions to them.

So, for those of you with interests in weed control and agricultural production I hope to hear from you. What are your issues with weed control and crop production, and how can Extension help with them? What sort of research, informational programming, or other Extension activity would you like to see? Any input – general or specific, related to weeds, agronomy, or other areas – would be most welcome. Or, if you just want to stop by and introduce yourself I'd appreciate that too. Thank you,

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2017 CENSUS OF AGRICULTURE

YOUR VOICE. YOUR FUTURE. YOUR OPPORTUNITY.

This year the USDA National Agricultural Statistics Service will be conducting the 2017 Census of Agriculture. Mailing of the Census will start mid-December with the bulk of the data collection activities planned to take place during the first 3 months of 2018. NASS plans to release the results of the Census in February of 2019.

Below are some Frequently Asked Questions that will help explain what the Census is, why it is important and how to participate in the process.

What is the Census of Agriculture?

The Census of Agriculture is a complete count of U.S. farms and ranches and the people who operate them. Even the small plots of land - whether rural or urban - growing fruit, vegetables or some food animals count if \$1,000 or more of such products were raised and sold, or normally would have been sold, during the Census year.

The Census of Agriculture, taken only once every five years, looks at land use and ownership, operator characteristics, production practices, income and expenditures. For America's farmers and ranchers, the Census of Agriculture is their voice, their future, and their opportunity.

Why is the Census of Agriculture important?

The Census of Agriculture provides the only source of uniform, comprehensive and impartial agricultural data for every county in the nation. Through the Census of Agriculture, producers can show the nation the value and importance of agriculture, and they can help influence the decisions that will shape the future of American agriculture for years to come. By responding to the Census of Agriculture, producers are helping themselves, their communities, and all of U.S. agriculture.

Who uses Census of Agriculture data?

Census of Agriculture data are used by all those who serve farmers and rural communities - federal, state and local governments, agribusinesses, trade associations and many others.

Farmers and ranchers can use Census of

Agriculture data to help make informed decisions about the future of their own operations.

Companies and cooperatives use the facts and figures to determine the locations of facilities that will serve agricultural producers.

Community planners use the information to target needed services to rural residents.

Legislators use the numbers from the Census when shaping farm policies and programs.

How is the Census of Agriculture conducted?

The National Agricultural Statistics Service (NASS) will mail questionnaires for the 2017 Census of Agriculture to farm and ranch operators in December 2017 to collect data for the 2017 calendar year. Completed forms are due by February 5, 2018. Respondents can complete the Census online at www.agcensus.usda.gov or return their forms by mail.

Must I respond to the Census of Agriculture?

Yes. United States law (Title 7 USC 2204(g) Public Law 105-113), requires all those who receive a Census of Agriculture report form to respond even if they did not operate a farm or ranch in 2017.

What if I only have a small operation or do not participate in government farm programs, do I have to fill out a Census of Agriculture form?

The Census of Agriculture is the responsibility of every individual who produces or grows any agricultural product, including field crops, fruits, vegetables, floriculture, and livestock, regardless of the size or type of operation. For Census of Agriculture purposes, a farm is any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the Census year.

What if I did not receive or I lost my Census of Agriculture form?

If you need more information, or need help completing your Census of Agriculture form, call toll-free (888) 424-7828 or visit www.agcensus.usda.gov.

When will 2017 Census of Agriculture results be announced?

NASS plans to release Census of Agriculture data, in both electronic and print formats, beginning in February 2019. Detailed reports will be published for all counties, states and the nation.

Where can I find Census of Agriculture data?

Census of Agriculture data is available through the local NASS field office in your area and at many depository libraries, universities and other state government offices. It is also available online

at www.nass.usda.gov or www.agcensus.usda.gov. For additional information on the Census of Agriculture and other NASS surveys, call the Agricultural Statistics Hotline at (800) 727-9540.

AGRONOMY

Post-Harvest Weed Control in Wheat Stubble

John Spring, Area Extension Agent, Weed Science and Agronomy

With wheat harvest a month behind and timely rains across much of eastern Colorado, it is time to consider post-harvest weed control in wheat stubble. Weeds present before harvest have recovered from cutting and are growing vigorously in the absence of crop competition. Any weeds that have germinated since harvest still have plenty of growing season left to cause problems. In either case, weeds should be controlled as soon as possible to prevent soil moisture use and seed production. Controlling seed production to reduce weed populations next season is particularly important when rotating to crops with limited options for in-crop weed control, like millet or sunflowers. From a disease standpoint, early control of volunteer wheat and grass weeds is important to break the green bridge and reduce spread of wheat streak mosaic and other viruses into next year's crop.

Kochia, Russian-thistle, and other warm season broadleaves tend to be the most problematic species at this time of year, but are by no means the only weeds present in many fields. Careful scouting and knowledge of each field's history is essential to choosing good control options. Consistent heat and moisture stress on the often large weeds found this time of year make challenging conditions for achieving good herbicide efficacy, particularly with glyphosate. The potential for glyphosate resistance in kochia and other weeds is another important consideration. At this point in the season, kochia, Russian-thistle, and the amaranths are flowering or close to it, and any resistant escapes have a high probability of successfully setting seed before they are detected. For these reasons, glyphosate should be avoided entirely for post-harvest use if possible. A notable exception to this guideline is when targeting grasses or volunteer wheat, where glyphosate is still a good choice when tank-mixed with other products.

If avoiding glyphosate entirely isn't feasible, tank mixing with additional mode(s) of action active on the target weeds is essential. Using high rates and adding ammonium sulfate (AMS) and other recommended surfactants are also key for good glyphosate activity under difficult conditions. AMS should be added to the tank after water and before any herbicides at rates determined by a recent water test, or at 17lb per 100 gallons if no water test is available. Another practice to improve herbicide efficacy is to spray only when temperatures are 80 to 85 F or less. When temperatures rise much above this, many plants start to shut their stomata and slow down metabolism, which can reduce the amount of herbicide taken into the plants. When weeds are under severe drought stress, it may be best to wait for a rain or a period of cooler temperatures to restore active growth before spraying.

Dicamba and 2,4-D (both synthetic auxin herbicides) are generally dependable options for broadleaf control alone, together, or tank-mixed with glyphosate or other chemistries. Occasional reports of poor kochia control with synthetic auxins indicate that at least some low-level resistance to these herbicides may be present in the region. Often, this sort of emerging resistance is only expressed in plants under stress – typical conditions for post-harvest applications. Again, tank mixing with multiple modes of action effective on the target weed(s) is the best response. Carfentrazone (Aim) is tank mix option for 2,4-D and glyphosate, adding broadleaf burndown activity. Saflufenacil (Sharpen) brings both burndown and short-term residual activity to tank mixes with glyphosate or dicamba. MSO plus a nitrogen source (AMS or UAN) are required for good contact activity of both products, and residual activity of Sharpen depends on adequate moisture after application. Aim and

Sharpen are both PPO inhibitors.

For fields rotating to corn, topremazone (Impact) adds contact burndown activity from the HPPD inhibitor mode of action to glyphosate, 2, 4-D, and many others, any time prior to planting corn. Atrazine, a photosystem II inhibitor, is an excellent base for a residual program for next year's corn, beginning post-harvest. While most residual herbicides don't have the durability to go out in mid-summer and last through the fall, atrazine does. For most other residual herbicides, split applications are probably a better approach. Split applications include a post-harvest burndown followed by a second application including a residual product later in the fall when conditions are more conducive to lasting pre-emergence activity. Products like Corvus, Spartan, and Authority MTZ are better used in this manner.

Paraquat (Gramoxone) is a very effective contact herbicide with a unique mode of action (electron transport diverter) and no rotational restrictions. Post-harvest applications are one of the best uses for paraquat, and a good opportunity to bring it into rotation for herbicide resistance management. Paraquat plus atrazine is an excellent option before corn. Another contact product effective on hard-to-control broadleaf weeds is Huskie, which combines a photosystem II inhibitor (bromoxynil) with an HPPD inhibitor (pyrasulfotole). For reliable performance on larger weeds, use a Huskie at a rate of at least 13.5 oz/ac, and include NIS and a nitrogen source according to label recommendations. The upfront cost for both products is relatively high for dryland acres, but this has to be weighed against the cost of allowing weeds to build up the seedbank. The cumulative cost of weed seedbank contributions can be quite high, particularly if any of the seeds are glyphosate resistant.

While large, stressed weeds are generally less

susceptible to herbicides than small, actively growing ones, contact products like paraquat and Huskie are less affected by weed stress and size than most systemic products. If a period of dry, hot weather follows application, efficacy of contact herbicides is generally enhanced rather than diminished. Contact herbicides kill only plant tissues they cover though, so good coverage is absolutely critical for performance. To ensure this, use at least 15 gallons per acre carrier volume, and nozzles that deliver fine to medium sized spray droplets. Do not expect to achieve adequate coverage – or acceptable performance from contact herbicides – with coarse droplets and/or low carrier volumes. Surfactants are also particularly important for contact products. Check the labels for specific herbicides to see what surfactants are required, and make sure to include them. If allowable, methylated seed oil (MSO) and crop oil concentrate (COC) add more activity to herbicides than nonionic surfactant (NIS) and are preferred for post-harvest use.

For operations in which tillage is an option, it can be a good one after harvest. Sweep plows are very effective on large, tap rooted weeds like kochia and Russian-thistle, but still leave good amounts of standing stubble for erosion control and snow retention. For shallower-rooted or smaller weeds, more intensive tillage is usually necessary to get good control. Here, herbicides may be more economical by the time added moisture trapped by retaining standing stubble is accounted for.

However it is accomplished, control of weeds in winter wheat stubble within a few weeks of harvest is important. Moisture use and seed production by uncontrolled weeds can result in substantial yield losses in next year's crop and beyond. And as always, good scouting and field specific prescriptions are critical for optimum decision-making.

2016 Wheat Variety Decision Tree for Dryland Production

Jerry Johnson and Sally Jones

The decision tree on the following page will help you make variety selection decisions based on important traits. All of the varieties shown in the decision tree have been tested in our trials for at least three years, across multiple locations. Varieties considered high-yielding in the decision tree had a three-year (2014-16) average yield above 100% when the trial average yield of 65.2 bu/ac is considered as 100%. Under each variety name are the letters SR for stripe rust with 1 being very resistant and 9 being very susceptible.

Wheat Decision Tree

Saving Wheat Seed

Ron F. Meyer, Golden Plains Area Extension Agronomist

Throughout the ages, farmers have planted seed saved from their previous wheat 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 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 with increased yield potentials. When it comes to hybrid corn, it just didn't make sense to save your corn seed any more.

With the passage of the US 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 ..."

Simply stated, if a farmer purchases Certified wheat seed they may keep seed grown from that seed for planting on his farm. Keep in mind that there are exceptions to this rule such as a new variety from Syngenta named SY Sunrise. When planting SY Sunrise, new wheat seed must be

purchased yearly. However, 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.

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 range from \$50-\$500 per occurrence.

Ignorance of the law is no excuse. As a best management practice, farmers should know what variety they are planting. If they can't show that they purchased Certified seed, they will need to investigate further before they save any production for 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. The label and sales contract will state planting limitations.

Source: Daryl Strouts, President, Kansas Wheat Alliance

Grain Bin Safety

Ron F. Meyer, Golden Plains Area Extension Agronomist

Whenever possible, don't enter a grain bin. If you must enter the bin, as a farm owner/operator you should:

- Break up crusted grain from the outside of the bin with a long pole. When using a pole, check to see that it doesn't come into contact with electric lines.

- Wear a harness attached to a properly secured rope.
- Stay near the outer wall of the bin and keep walking if the grain should start to flow. Get to the bin ladder or safety rope as quickly as possible.
- Always have another person, preferably two

people, outside the bin who can help if you become entrapped.

- Grain fines and dust may cause difficulty in breathing. Anyone working in a grain bin, especially for the purpose of cleaning the bin, should wear an appropriate dust filter or filter respirator.
- Always stay out of grain bins, wagons and grain trucks when unloading equipment is running.
- If it is necessary to enter the bin, remember to shut off the power to augers and fans. It is a good idea to lock out any unloading equipment before you enter a bin to prevent someone from unintentionally starting the equipment while you are in the bin.
- Children should never be allowed to play in or around grain bins, wagons or truck beds.
- Where possible, ladders should be installed

inside grain bins to for an emergency exit. Ladders are easier to locate inside a dusty bin if there are brightly painted stripes just above or behind the ladder.

- It only takes 25 seconds for a 6 ft., 180 pound man to become submerged in grain.
- It takes 625 pounds of force to remove a 180 pound man submerged in grain from the neck down.
- If you become trapped in a bin of flowing grain with nothing to hold onto but you are still able to walk, stay near the outside wall. Keep walking until the bin is empty or grain flow stops. If you are covered by flowing grain, cup your hands over your mouth, and take short breaths until help arrives.

Source: University of Illinois Extension, University of Minnesota Extension

HORTICULTURE

Recommended Trees for the Golden Plains Area

By Linda Langelo, CSU Horticulture Program Associate

These underused trees are based on trials in the Colorado State University Arboretum. Jim Klett Ph.D., CSU Ornamental Specialist, published the findings below in *Dependable Landscape Trees*. Added in this list are my tree suggestions based on area wide county site visit observations.

- *Acer nigrum* 'Greencolumn' Greencolumn Black Maple, Maple Family, Aceraceae: No pest or disease problems; good heat tolerance. 40 high x 35 wide
- *Amelanchier x grandiflora* 'Autumn Brilliance' Autumn Brilliance Serviceberry, Rose Family, Rosaceae: Some tendency toward suckering, but overall outstanding specimens with a fall color mix of orange, red and purple, lasting two weeks. No disease and pest problems observed in the arboretum trees. 25 high x 30 wide
- *Catalpa speciosa* Northern Catalpa, Bignoniaceae Family: Tolerates hot weather, drought tolerant and grows in a wide range of soils including alkaline. Early summer flowers, white with purple markings. Fast-growing tree which can attract powdery mildew, leaf spot and verticillium wilt. 40 to 60 high x 20 to 40 wide.
- *Gleditsia triacanthos inermis* 'Shademaster' Shademaster Thornless Honeylocust: Minor

insect problems; a 1979 specimen has stayed in good health in the CSU arboretum. 45 high x 40 wide, Pea Family, Fabaceae Family

- *Heptacodium miconioides* Seven-son flower Plant Select Introduction: Can be a small shrub or tall tree to 25 feet. Fast-growing and very adaptable to many soils. Flowers are white with moderate to dry water requirements. Has exfoliating bark. Member of the Honeysuckle Family. 25 high x 15 wide. Caprioliaceae Family, Honeysuckle Family
- *Malus sargentii* 'Select A' Firebird Flowering Crabapple (white flowering): Highly resistant to mildew, apple scab, fireblight and cedar apple rust. 8 high x 7 wide, Rose Family, Rosaceae
- *Malus* 'Thunderbird' Thunderbird Flowering Crabapple (pink flowering): Resistant to fireblight. No pest problems have been observed. 16 high x 10 wide, Rose Family, Rosaceae
- *Ostrya virginiana* American Hophornbeam, Ironwood: Gray-brown bark attractive; some minor leaf spot in recent years. 40 high x 30 wide, Betulaceae Family, Birch Family
- *Phellodendron amurense* Amur Corktree: No

disease or insect problems; no cultural problems such as chlorosis and dieback. 45 high x 45 wide, Cork Tree Family, Rutaceae

- Prunus x ‘Accolade’ Accolade Flowering Cherry, Rose Family, Rosaceae: This tree is fruitless. When these trees suffer from stress they attract borers and gummosis. One out of three samples in the arboretum have suffered from stress. The others are in good health. 50 high x 25 wide
- Quercus macrocarpa Bur Oak, Beech Family, Fagaceae: Adapts to different soil types, urban conditions and dry conditions. Difficult to transplant, but once established will be a long-lived, slow-growing tree with no pest or disease problems except slight injury from galls. 55 high x 45 wide.
- Quercus muchlenbergii Chinkapin Oak, Yellow Chestnut Oak, Beech Family: Adaptable to alkaline soils, no chlorosis or dieback, no problems with pests or disease. Recently planted in Plant Select® mulit site trials throughout Colorado and has done well. 50 high x 60 wide
- Syringa reticulata ‘Summer Snow’ Summer Snow Japanese Tree Lilac: No disease or insect problems. Yellow fall color. 18 high x 14 wide, Oleaceae, Olive Family
- Syringa pekinensis ‘Peking Tree Lilac’: Light creamy white flowers with a light fragrance appear in early summer. Winter hardy plants and have adapted well to alkaline soil. 25 high x 20 wide, Oleaceae, Olive Family
- Tilia cordata ‘June Bride’ June Bride Littleleaf Linden: The best Tilia cultivar. Minor pest problems such as aphids and sooty mold. 30 high x 25 wide. Malvaceae Family
- Tilia americana ‘Redmond’ Redmond American Linden: Overwintering feature of red buds and twigs; attracts aphids and sooty mold follows – inconsistent with each season. 50 high x 40 wide. Malvaceae Family
- Tilia cordata ‘Chancole’ Chancellor Littleleaf Linden: Pyramidal growth habit that is very attractive and uniform, no dieback or chlorosis

and minor problems with leaf spot and aphids. Malvaceae Family

- Ulmus parvifolia, Chinese or Lacebark Elm: Resistant to Dutch elm disease. This has been proven to be a pest-free tree. 40 high x 50 wide. It has exfoliating bark. Ulmaceae Family
- Ulmus x ‘Mortan Stalwart’ Commendation Elm: A mix of many elm species; resistant to Dutch elm disease with some leaf minor and leaf tatter. 25 high x 25 wide. Ulmaceae Family
- Ulmus x Frontier Elm: Resistant to Dutch elm disease. Prefers moist, rich soils but adaptable to poor soils; full sun; very tolerant of urban conditions and drought tolerant. Fall color is red-purple-burgundy and summer leaves are glossy, dark green. 35 high x 25 wide. Ulmaceae Family
- Ulmus x ‘Triumph’ Triumph™ Elm: Excellent disease and pest resistance to Dutch elm disease, Elm Yellows and Elm Leaf Beetle; arching branches with aggressive roots to be planted away from sidewalks; adapt easily to extremes in pH, moisture, wind and heat. 50 high x 40 wide – elliptical form. Ulmaceae Family
- Xanthoceras sorbifolium Yellowhorn (white flowers with red & yellow centers): This does have pea-sized edible seeds. Looks good all summer. No pest problems; likes colder climates. Soapberry Family, Sapindaceae Family
- Plant select: Clear Creek® Golden Yellowhorn: Spring white flowers with yellow centers turning maroon and leathery seedpods through winter; can be large tree or small shrub to 22 feet; moderate to xeric water requirements.

One final note when selecting trees for your landscape based on Morton Arboretum and the Arbor Day Foundation: The more closely related tree species are, the more likely they are to be vulnerable to the same pests and damage. Keep the following 30/20/10 rule in mind when making tree selections. In your community, plant trees with no more than 30 percent of species within the same family, no more than 20 percent should be from the same genus, and no more than 10 percent should be the same species.

Tips for Purchasing a Quality Tree

By Linda Langelo, CSU Horticulture Program Associate

Trees are expensive additions to our properties. They are around for our lifetimes, if we care for them well enough. One of the best things we can do is to purchase a quality tree to start.

Here are some of the things to watch when purchasing a tree. Three major items to pay attention to and look for on leaves and trunk:

1. Injury
2. Disease
3. Structural Problems

Injury can be very apparent on the leaves or the trunk. If the leaves do not look healthy green then move onto the next tree. Watch and make sure the leaves have no deformity, twisted stems or galls on the underside. It will be harder to look for mites, but other insects may leave holes or curl the leaves.

Get to know the tree and its diseases or shortcomings before you start looking at area nurseries. If you don't spend the time doing that then when you get to the nursery and look at the same species in a row and one looks odd, don't buy the odd looking one.

One good reference to check on the characteristics of trees is Manual of Woody Landscape Plants by Michael Dirr. Your local library may have it or request it. He gives a comprehensive description of each tree species along with disease and insect issues.

Here is a short list of pre-existing weaknesses:

- Soft areas such as cankers or weeping areas on the trunk such as wet wood or slime flux in elms.
- Cracks along the trunks. This can happen when a tree lives through a severe storm. Torsion cracks have a spiraling along a trunk, which is a sign that this tree was in a violent storm. Cracks can also mean damage from frost.
- More than one leader coming from the main trunk that is at the same juncture means there will be no strong branch unions and the tree could split apart in the future.
- Girdling roots are a big issue with containerized trees. If you are looking at containerized trees, remove the tree from the container and see if the roots are circling around the base of the pot. When you get to plant it, spread them out or cut

through them and redirect the roots. I have seen 40-year-old trees topple because no one thought about doing this when it was planted. After 40 years, no one wants to discover the trunk was compressed at the base by girdling roots.

- Decay along the trunk might appear as a different color from the bark. Watch for an open wound, or mushrooms growing at the base or along the trunk. Not that this has happened, but you never know.

Though there is, a lot to consider when purchasing a tree, let common sense guide you. Ask many questions. Ask questions about the care in the nursery. Why? This can help you transition the tree from the watering schedule at the nursery so you do not shock the plant. I once purchased grasses from a local nursery to fill pots for an event. The event was a week away. The grasses went in and overnight they died. They were well watered and planted properly. I called and asked the nursery how often they watered the grasses. They were on a six-hour schedule. They went 12 hours or more without those subsequent watering's. The plants had no time to acclimate. So do ask. Yes, the nursery replaced the plants and cut back on their watering.

Some other very common mistakes to avoid are to remove as much of the burlap as possible and if the tree is in a wire cage, remove the top third. Tree roots grow out and up within 10-24 inches. If they are constricted in the wire cage, your tree becomes a hazard to its overall health.

Happy tree shopping! Now is still the time to plant a tree to help it start on its establishment. Trees do take up to seven years to establish themselves. Do not fertilize when planting a tree. Plants make their own food. If there is less than two to four inches of growth in the first couple of years, then the tree is not acclimating. A light fertilization can help them along. Too much and the tree which has not become established will not have the root structure to support the new growth and be top heavy.

If you have any questions, please feel free to contact your local Extension Office in the Golden Plains Area.

Fall Lawn Care

By Linda Langelo, CSU Horticulture Program Associate

Some of the most important aspects of lawn care begin in the fall. One of those is fall fertilization.

Research proves that by fertilizing in the fall the lawn develops a stronger and deeper root system. In the fall, plants are storing food in their root systems. In the spring, they are utilizing what was stored for new growth. Fertilization is best done in September and October or early November before the ground freezes. Two fertilizations in the fall will generate a healthier lawn. Late spring or early summer fertilizations are still acceptable in mid-May or early June. Summer fertilizations in July and August will burn the turf and lead to stressing the grass plant. According to CSU Turf Specialists, Tony Koski a bluegrass lawn that is under fertilized may be lacking in iron and phosphorus. For further guidance on turf fertilization here is a link to the Colorado State University Extension Guide Titled: *Homeowner's Guide to Fertilizing Your Lawn and Garden*. <https://extension.colostate.edu/docs/pubs/garden/xcm222.pdf>.

The next important aspect of lawn care is aeration. Aeration is best done in both the fall and the spring. Doing it when the soil is not wet or overly dry but rather when it is moist. Properly aerating the lawn can help utilize the water efficiently for irrigation. Aeration helps to

decompose the thatch. The best time to aerate is when your thatch is ½ inch or more. If there are enough passes made across the lawn, this could remove about 10% of the thatch.

Renovating areas of the turf grass can be done in the fall. Start early so that the new turf is up and has been mowed before the ground freezes. Buy the best grass seed, which means with zero weed seeds in it. If the turf is bluegrass, fine fescue or ryegrass is fine to seed in with it. Soil preparation is the key. Placing grass seed on poorly prepped areas leads to minimal or lack of any successful results. For some of the best tips, Colorado State University Extension Fact Sheet on *Renovating the Home Lawn*, 7.241 is helpful. This can be obtained by going to CSU Extension Website and clicking on publications.

As the leaves begin to collect on the turf, is it better to rake them or leave them mow over? Mow over the leaves because this breaks them down into smaller pieces. The smaller the pieces the faster they can decompose in the turf. Leaves add nutrient to the soil. Go ahead and fertilize the turf in addition to utilizing the benefit of leaves since the decomposition is slower.

Don't hesitate to contact the local Colorado State University Extension Office if you have any questions in regards to lawn care.

PEST MANAGEMENT

Check Sunflower Fields for Sunflower Head-Infesting Insect Pests

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

We are currently seeing the three commonly found sunflower head infesting insects, namely sunflower head moth, banded moth and seed weevils in sunflower fields in northeastern Colorado. Our monitoring of sunflower and banded moth is based on use of Pheromone traps (www.nocopestalert.org) whereas for sunflower seed weevils visual observations of developing sunflower heads were used. Scouting for these insects is recommended the next two to three weeks.

According to Colorado State University field trials on sunflower head-infesting insects, red

sunflower seed weevil can be considered the most seed damaging pest and followed by sunflower head moth larvae. In addition, increased risks of seed weevil larval damage was determined as planting dates delayed.

Sunflower moths: Pheromone traps may be used to monitor moth activity. Less than one sunflower moth trapped per night is considered low risk, while more than four moths trapped per night is considered high risk and justification for treatment.

If visual scouting is used instead of pheromone traps, consider treatment if more than two sunflower

head moths per five plants is observed while scouting during early bloom. Younger sunflower moth larvae feed primarily on florets and pollen. Older larvae tunnel through immature seeds and other parts of the head.

Insecticide applications are made at early bloom (R5.1) to prevent moths from laying eggs.

Banded sunflower moths: Adults are most active during the early morning and early evening. During the day they rest quietly underneath the lower leaves of sunflower plants, but flutter from plant to plant when disturbed. Larvae feed primarily on seed and florets in the central portion of the head. A single larva may feed on from three to five seeds.

Insecticide applications made at early bloom (R5.1) to prevent moths from laying eggs. Scouting in the early morning or early evening will provide the most accurate counts, since moths are most active at these times. Pheromone traps can be used to determine when scouting should be started, but a pheromone-based treatment threshold is not available. When scouting, sample sites should be 75 to 100 feet from the edge of the field. Use an X-pattern, counting moths on 20 heads per sampling site for a total of 100 heads. One moth per two plants is the currently accepted economic threshold level.

Sunflower seed weevils: Egg laying begins at the outer edge of the head and progresses inward, following seed development. Adults may be found from July to September. If seed weevil infestations are encountered late in the year, harvest may be delayed to avoid bringing infested seed into storage. Larvae emerging in storage will not damage

additional seeds, but their bodies will remain in the storage.

Insecticide applications are made to prevent adults from laying their eggs. Treat red sunflower weevil on oilseed sunflower when about 30 percent of the plants have reached the R 5.1 stage. The economic threshold ranges from 5 - 15 weevils per head, depending on plant population and market conditions (see the High Plains IPM guide for details).

Confection sunflower should be treated to avoid quality penalties if less than 10 to 15 percent of the plants have reached R 5.1 and one or more red sunflower seed weevil can be found per head. Gray sunflower seed weevil is thought to be economically insignificant under most conditions.

Scouting for red sunflower seed weevil can be difficult because of its distribution in the field and because of its habit of hiding in the heads. Start scouting when the yellow ray petals are first visible and stop when the majority of the plants in the field have passed 70 percent pollen shed (R 5.7), or when the action threshold has been exceeded. Avoid taking seed weevil counts from plants in field margins as they tend to congregate in these areas and counts will not be representative of the entire field. Count five sets of five plants, distributed across the field in an X-pattern.

Effective products for management of sunflower pests can be found the High Plains IPM Guide at: <http://wiki.bugwood.org/HPIPIM:Crops> and if you find more than one head-infesting sunflower insects, you may be able to select an insecticide product that may be effective against all sunflower head-infesting insect pests in this guide.

First Generation European Corn Borer

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

Adult European corn borer monitoring sites in northeastern Colorado are showing emergence and flight of the moth. For historic European corn borer moth emergence and duration of infestation data, check our pest alert web site (<http://northernipm.colostate.edu/>) where trap counts from different locations and years are found.

First generation moths prefer taller and early planted fields for laying eggs; your non-Bt hybrid cornfields should be scouted the next 2-3 weeks. Some hybrids have useful resistance to the first

brood of European corn borer, which feeds in the whorls and later enters the stalk. Control can be expected with Bt corn hybrids, except those containing only events that target corn rootworms.

European corn borer usually goes through two generations each year. The young larvae feed first on the leaf near where they hatched. As the larvae grow, they move to the whorl or leaf sheath area, and feed. When leaves emerge, the "shot hole" feeding signs in the leaves can be seen. Most of the

mature larvae will bore into the stalks, feed, and finish development there. Second generation larvae cause ear damage, tunneling in the shank and feeding on silks, kernels and cobs. Signs of infestation include: dropped ears, broken shanks, stalk breakage, sawdust-like castings on leaves, and holes in the stalks.

To determine infestation levels of first generation and make management decisions, 25 plants in 4 locations in a cornfield should be checked for leaf infestations. Larval damage is

noticed as feeding scars and shot holes in plant leaves. Chemical control of first generation corn borer is justified when 25% of the plants in your sample show feeding damage and show presence of larvae. Chemical control of the pest must be applied before the feeding larvae bore into the stalks.

More detailed management information including effective products, rates of application and others can be checked in the High Plains IPM Guide: www.highplainsIPM.org.

Early Emergence of Western Bean Cutworm Moth in Northeastern Colorado

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

We are seeing early emergence of western bean cutworm moth in most parts of northeastern Colorado this year. According to the historic monitoring data, the moth population will peak between the third week of July and first week of August in Colorado (www.nocopestalert.com). Eggs are deposited in clusters on the top surface of leaves. Following hatch, young western bean cutworm larvae move to one of the two places on corn plant, depending on the stage of development. If the corn has not tasseled, larvae will feed on pollen in the developing tassel. If the corn has tasseled, larvae will feed on silk in the ear. Once the ear is formed, the larvae will feed on developing kernels.

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 the next three weeks; good control will be difficult once the larvae move into ears.

Monitoring for this insect based on determining the percent of corn plants with egg masses. Chemical control is justifiable if eight

percent 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 few larvae are likely to reach the ears.

Effective insecticide products 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.

The other pest to pay attention at the moment will be the bank grass mite (BGM). It should be monitored especially if dry and hot conditions should prevail during the growing season. Webbing on leaves and discoloration are often the first signs of an infestation. BGM builds on the plant the bottom up, treat 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. Effective products for BGM management can be found in the High Plains IPM Guide: www.HighplainsIPM.org.

Check Alfalfa Fields For Alfalfa Caterpillars

Wilma Trujillo and Frank Peairs

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In recent days we have received a number of phone calls about an increased number of alfalfa caterpillar (*Colias eurytheme*) in alfalfa fields in the Wiggins and Weldona areas.

The yellow or white butterflies of the alfalfa caterpillar lay eggs on the new growth of alfalfa that is less than 6 inches tall. The adults of the alfalfa caterpillar can be seen flying over alfalfa fields particularly in August. Eggs hatch into green caterpillars in 3 to 7 days. Full grown caterpillars are about 1.5 inches long and are distinguished from other caterpillars on alfalfa by their velvety green bodies with with lines along their sides.



Alfalfa Caterpillar



Alfalfa Butterfly

Factors contributing to economically significant caterpillar numbers are:

- Slow and uneven growth of the crop
- Lack of natural enemies
- Hyperparasites (other parasitoid wasps attacking the natural enemy wasps reducing their numbers)
- Hot, dry weather

There are several generations per year of alfalfa caterpillar. Alfalfa caterpillars consume the leaves whole, whereas armyworms skeletonize the leaves. Damage is worst in newly planted fields, where the plants are too small to withstand much defoliation.

The threshold of 10 larvae per sweep/1 larva per 2 plants for standing alfalfa should be adjusted based on the status of the pest and of the crop. If many of the larvae that you collect seem to be diseased or parasitized, then you should double or triple the threshold. If the crop is newly seeded, then consider lowering the threshold to 2 caterpillars per sweep/1 caterpillar per 10 plants. Infestations on regrowth are more important than on a standing crop, but perhaps not as important as those on new seedings. Consider a regrowth threshold that is intermediate between the threshold for a standing crop and that for new seedings.

We have no local efficacy data for alfalfa caterpillar, but any of the pyrethroid insecticides should be effective. Higher rates should be considered for larger larvae. Earlier in the year, biological (Bt) insecticides would be better a choice in order to preserve biological controls.

However, we likely are dealing with the last generation of the year and have already benefitted from a full season of natural controls. Also, if the crop is due to be cut soon, it might be best to hold off treatment until after harvest and see if enough larvae survive to be a concern on the regrowth.

For more information on chemical control, please visit the High Plains Intergrated Pest Management Guide at https://wiki.bugwood.org/HPIPIM:Alfalfa_Caterpillar.

Census Flyer

Regenerating Landscapes Flyer

AG MARKET PRICES

Dennis Kaan, Golden Plains Area Director

LIVESTOCK CASH PRICES			Week Ending 8/25/17		
			Current ¹	One Month Ago ²	One Year Ago ²
Colorado Auction Feeder Cattle, Medium & Large Frame #1					
Steers,	500-550 lbs	/cwt		No Reports	
Steers,	600-650 lbs	/cwt		During Summer	
Heifers,	500-550 lbs	/cwt		Season	
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	354	1388-1433	\$110.00	\$118.00-120.50	\$114.50-115.50
65-80% Choice	1,785	1,300-1,521	\$110.00-110.50	\$118.00-120.50	\$114.50-115.50
35-65% Choice	174	1,325-1,325	\$110.00		
0-35% Choice					
<u>Live Basis Heifer Sales</u>	Hd Count	Wt Range	/cwt	/cwt	/cwt
Over 80% Choice	992	1,260-1,375	\$110.00-110.50	\$118.00-120.00	\$114.50-115.50
65-80% Choice	1,357	1,225-1,350	\$110.00-110.50	\$118.00-120.50	\$114.50-115.50
35-65% Choice					
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, CA			No Activity	\$168.00	\$160.00-165.00
			Reported		\$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		\$65.00-70.00	\$80.00-85.08	\$55.00-62.00
Iowa -Minnesota Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$66.00-71.00	\$81.00-85.75	\$55.00-62.50
Western Cornbelt Daily Negotiated Purchases 200 lb Carcass Basis					
1.0" Back-Fat, 6.0/2.0 Loin Area/Depth	/cwt		\$66.00-71.00	\$81.00-85.75	\$55.00-62.50
LIVESTOCK FUTURES PRICES			8/25/17		
Live Cattle – CME			Current ¹	One Month Ago ²	One Year Ago ²
Oct	/cwt		\$106.59	\$117.02	\$108.07
Dec	/cwt		\$109.68	\$118.05	\$108.10
Feb	/cwt		\$111.95	\$119.04	\$108.22
Apr	/cwt		\$111.34	\$118.36	\$107.30
Feeder Cattle – CME					
Sep	/cwt		\$142.12	\$152.34	\$139.92
Oct	/cwt		\$142.34	\$150.63	\$135.95
Nov	/cwt		\$142.55	\$149.36	\$132.82
Jan	/cwt		\$139.78	\$146.17	\$130.00

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**8/25/17**

		Current ¹	One Month Ago ²	One Year Ago ²
#1 HRW Wheat				
Fleming, Haxtun, Julesburg, Holyoke, Paoli, Amherst	/bu	\$2.98-3.21	\$3.96-4.19	\$2.62-3.05
Yuma, Wray, Brush, Akron, Otis, Anton	/bu	\$2.78-2.86	\$3.77-3.94	\$2.52-2.65
Burlington, Seibert, Flagler, Arriba, Genoa, Hugo	/bu	\$2.85-2.91	\$3.84-3.85	\$2.50-2.55
#2 Yellow Corn				
Haxtun, Julesburg, Fleming, Holyoke, Paoli, Amherst	/bu	\$3.02-3.17	\$3.49-3.66	\$2.79-2.81
Yuma, Wray, Brush, Otis, Anton Seibert, Arriba, Burlington, Flagler, Bethune, Stratton	/bu	\$3.02-3.35 \$3.07	\$3.43-3.77 \$3.16-3.56	\$2.73-2.93 \$2.61-2.66
Northeast Colorado, Western Nebraska Beans				
Pinto Beans	/cwt	\$28.00	\$28.00	\$28.00
Great Northern Beans	/cwt	\$28.00	\$28.00	\$28.00
Light Red Kidney Beans	/cwt	\$33.00	\$33.00	Not Established
White Millet				
E Colorado / SW Nebraska	/cwt	\$6.00-6.75 Mostly \$6.50	\$5.50-7.00 Mostly \$6.50	\$5.25-6.00 Mostly \$5.50
Sunflowers				
E Colorado / SW Nebraska	/cwt	\$16.25-16.50	\$15.50-16.50	\$16.50-17.00

GRAIN FUTURES PRICES**8/25/17**

		Current ¹	One Month Ago ²	One Year Ago ²
Wheat, Kansas City Board of Trade				
Sep	/bu	\$4.10	\$5.04	\$3.83
Dec	/bu	\$4.34	\$5.29	\$4.07
Mar	/bu	\$4.55	\$5.48	\$4.32
May	/bu	\$4.70	\$5.59	\$4.46
Corn, Chicago Board of Trade				
Sep	/bu	\$3.41	\$3.91	\$3.16
Dec	/bu	\$3.55	\$4.04	\$3.25
Mar	/bu	\$3.67	\$4.15	\$3.34
May	/bu	\$3.75	\$4.20	\$3.41

CASH HAY PRICES**Week Ending 7/21/17**

		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		\$170.00	\$245.00
Premium Alfalfa, 150-180 RFV	/ton	\$190.00	\$155.00	
Good Alfalfa, 125-150 RFV	/ton			
Fair Alfalfa	/ton		\$120.00-130.00	
Utility Alfalfa Delivered	/ton			
Premium Grass (Large Squares)	/ton	\$225.00	\$200.00	\$210.00
Premium Grass (Small Squares)	/bale		\$7.00	\$6.00
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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