

AGRICULTURE

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GOLDEN PLAINS AREA
COLORADO STATE UNIVERSITY
EXTENSION

Colorado State University, U.S. Department of Agriculture and Kit Carson, Phillips,
Sedgwick, Washington, and Yuma Counties cooperating.

Extension programs are available to all without discrimination.

AG BUSINESS

Cash Flow Monitoring is Essential When Margins are Tight **Dr. Brent Young, PhD, Regional ABM Specialist**

When farmers and ranchers think of cash flow statements they usually recall those pesky documents that the Ag lender requires during operating loan renewal time. Typically the statement is developed around the first of the year, presented to the lender, and then forgotten. When commodity prices and input prices are at record highs resulting in thin profit margins, cash flow statements are an important tool in surviving challenging financial times.

Cash flow statements summarize the cash inflows (receipts) and outflows (expenditures) of a business over a specific time. The accounting period is usually one year divided into 12 monthly periods. The cash flow statement can be used in either of the following ways: as a long-range projection or forecast of future operations (called pro forma or planning analysis), or as a historical (after the fact) record containing actual financial data.

Most computerized accounting programs include a budgeting module that will allow producers to input the cash flow information developed for loan renewal purposes. Once the data is entered expense and income entries made in the accounting module can be compared to the cash flow information in the budget module. Reports can be generated that compare planned spending to actual expenditures.

Regular monitoring of the cash flow statement can be a powerful tool in keeping production cost in check especially when things get hectic during the long days of summer. At minimum cash flow statements should be reviewed on a monthly basis. Computerized versions can make this critical information available at any time providing the producer vital information when making production decisions.

An example of the power of cash flow monitoring could be the ability to fine tune chemical applications allowing the producer to choose products based on their costs as well as their ability to control the target pests. The flexibility to move resources from one budget category to another or to identify areas that are over budget can help guide production related decisions.

Realistic cash flow projections developed from many years of previous data and accurate assessments of anticipated inflows and outflows can also aid in marketing agricultural commodities. A combination of anticipated yields and the total expenditures necessary to produce the underlying commodity can provide cost of production data that are essential for the development of marketing plans.

In an effort to help farmers and ranchers improve their understanding of financial tools of the trade and to provide a convenient means to produce accurate information, CSU Extension Ag & Business Management (ABM) Team has developed a series of Excel based financial statement templates. These templates can be found on the ABM website at <https://abm.extension.colostate.edu/financial-decision-tools/>

The cash flow decision aid allows the user to input beginning checking account balance, minimum desired checking account balance, operating loan interest rate, and any operating loan balance carry over from previous year. Once inflows and outflows are entered, the spreadsheet automatically calculates the operating loan balance and accumulated interest. This function allows the user to contemplate an

unlimited number of scenarios and see the changes in operating loan balances and interest charged.

During these times of tight profit margins, producers should consider checking their cash flow statements as often as they check the weather and the markets. For more information contact Brent Young at 970-522-7207 or email at brent.young@colostate.edu

AGRONOMY

Wheat Stem Sawfly **Ron Meyer, Area Agronomy Agent**

Wheat stem sawfly is a native insect that feeds on grasses in Colorado. The insect was first identified by entomologists in Colorado around the late 1800's and primarily fed on range grasses. However, wheat stem sawfly emerged as a Colorado wheat pest in 2010 and damage from this insect has been expanding and increasing since. Today, this pest is estimated to cause \$30 million in damage, according to Brad Erker, Executive Director of the Colorado Wheat Research Foundation. As a result, Colorado State University (CSU) is focused on addressing cropping strategies to ease pest losses to this insect. Research is focused on cropping rotations and developing wheat varieties that discourage wheat stem sawfly from reproducing and damaging plants.

CSU and others have found that wheat stems that are more solid than the traditional hollow stemmed varieties have shown merit in reducing the pest's damage. Typically, adult wheat stem sawfly lay eggs in the stem during the growing season. The developing larvae feed and move downward in the plant and eventually cut the plant's stem off near the soil surface. The wheat plant with seed in heads fall to the ground and are un-harvestable. Thus, not only is yield impacted negatively, but straw residue is also now lying flat on the ground. The larvae survive in the remaining stem near the soil surface.

Cropping strategies include shallow tillage that lifts wheat crowns and loosens soil. This activity exposes larvae to winter weather and increases mortality during some winters. However, tillage interferes with biological control insects (insects that feed on sawfly) and may increase soil erosion. Keep in mind that the advantages of controlling sawfly with tillage must be compared to the benefits of leaving residue on tops of fields.

Planting trap crops along field edges has shown promise in research trials. Wheat stem sawfly will deposit eggs in oats, barley, and rye and developing larvae will not survive in these crops. Trap crop strategy works best with low to moderate wheat stem sawfly populations. If populations are heavy, adults will continue to fly past the trap crop and into wheat fields. Also, avoid planting new wheat next to a previous field that contained wheat with sawfly populations. Adults emerge from the old wheat stubble in the spring and move into actively growing wheat. Adult wheat stem sawfly are not strong flyers and do not move long distances.

Applying insecticides has not been an effective strategy for this pest. Adults have an extended flight time during the growing season and repeated insecticidal applications in trials have not been cost effective for control.

One of the most effective strategies for reducing wheat stem sawfly damage is planting solid or semi-solid stemmed wheat varieties. Larvae trying to feed and develop in solid stemmed wheat varieties have higher mortality rates. CSU is currently incorporating solid-stem characteristics into existing wheat varieties and has released Fortify SF and Amplify SF, which are both semi-solid stemmed varieties. Other wheat stem sawfly varieties include AP Solid, Spur, WB4483, WB 4418, WB4595, and WB4792. For more information regarding local wheat variety availability, contact your local wheat seed dealer.

Tillage with No-Till?
Ron Meyer, Area Agronomy Agent

Almost 3 million acres of Colorado farmland employs no-till strategies, and this acreage is expected to continue to increase. No-till farming has continued to gain momentum in the state due to a number of positive factors associated with this technique. Benefits of no-till include decreased soil erosion, increase soil moisture retention, decrease in fuel usage associated with tillage, decreased labor costs from not tilling, increased soil carbon, and increased soil organic matter. Most of these benefits result in increases to farm income. However, crop production issues with no-till are showing up more frequently. Issues include herbicide resistant weeds (herbicides for weed control are substituted for tillage) and soil compaction problems.

Weeds such as Kochia and Palmer Amaranth have become resistant to glyphosate herbicides due to excessive use of this herbicide. Both weeds are open-pollinated plants which opens up the resistant gene-transfer possibilities tremendously. As a result, using one herbicide only over a long period of time for weed control basically selects the weed population for resistance to the herbicide being used. Current research indicates more than 40 weed species are glyphosate resistant. Preventing weed seed production to control the above-mentioned weeds is a strategy producers have used for a long time. When herbicides fail, tillage may be an option even in a no-till system to prevent problem weeds from producing seed for next year.

Research is showing that a well-timed one-off tillage (strategic tillage) can control herbicide resistant weeds and prevent the resistant weed from producing seed that will interfere with next year's crop. Strategic tillage performed at some interval (possibly once every two or three years) differs greatly from conventional tillage, which is performed often every year. Strategic tillage can be done with a variety of methods but usually is performed using light tillage tools and shallow depths in Colorado. The strategy involves eliminating, with tillage, herbicide resistant plants before they produce seed. Research is reporting that strategic tillage, when managed correctly, reduces some weed populations by 70%.

Soil compaction is another issue that can be problematic for Colorado no-till producers. Soil compaction is a direct result of traffic or past tillage in fields when soil moisture is too high. Research has also indicated that the winter freeze-thawing effect is not effective for breaking soil compaction, especially in dry soil conditions over winter. In Colorado, topsoil is wind deposited and many soils are silt loam, which is prone to soil compaction issues. Soils that contain more sand do not have serious soil compaction problems and therefore, would not need tillage to address compaction. If tillage is practiced to reduce compaction, consider tilling when soils are dry to enable the best compaction mitigation outcomes. Tilling wet soils can make the issue worse as side compaction layers are created. Tilling dry

soil creates fracturing which addresses the compacted layer. Be sure to know where the compaction is located and till to levels just below that depth. Therefore, probe soils to determine the compacted depth, and till just below that depth. So, if compaction is found at 5-6 inches, till to 7 inches and no deeper.

Many agriculturalists agree that tillage should be a last strategy for addressing herbicide resistance and soil compaction. Other cropping system strategies are available such as pre-emergent herbicide applications for resistant weeds and tap-root cropping choices for soil compaction. Disadvantages of tillage include losing soil moisture, creating fields with water runoff issues, losing accumulated soil carbon, reducing soil organic matter, reducing soil cover, and a number of others. These factors need to be kept in mind when considering tillage in a no-till field. However, researchers at the University of Nebraska found that strategic tillage, when performed properly, did not ruin the benefits of no-till production. Kansas State University research also found that a single tillage did not negatively affect crop production when performed in a no-till system. The key is to have a crop production reason to till, such as resistant weeds or soil compaction. Tillage, just to till, could cost producers money otherwise.

Private Pesticide Recertification Meetings **Ron Meyer, Area Agronomy Agent**

Colorado State University Extension is hosting Private Pesticide Recertification sessions at various locations in Northeast Colorado. Anyone who purchases restricted-use pesticides must have a Private Pesticide Applicator license which is issued by the Colorado Department of Agriculture. Private Applicator license study guides and exams can be obtained either from the Colorado Department of Agriculture or some Extension offices. This test is also available on-line. Once a license is received, it is active for 3 years before renewal is needed. Renewal can be achieved by either retaking the exam or attending a recertification meeting. These recertification meetings offer credits which can be substituted for retaking the exam. Licenses that expire prior to obtaining recertification credits will require re-taking the private pesticide exam. These meetings will offer 7 core credits which recertifies a private applicator license for three years.

Locations and times are as follows:

March 21– 8:30 am. – 12:15 pm Burlington Community Center , 340 S. 14th St., Burlington
March 22– 8:30 am – 12:15pm, Sedgwick County Courthouse Annex, 315 Cedar, Julesburg
March 24— 8:30 am – 12:15pm, CSU Extension office, 181 Birch, Akron

Registration is required and the cost is \$50/person. Registration on-line can be accomplished at <https://goldenplains.extension.colostate.edu/programs/agriculture/crop/> or by contacting the Colorado State University Extension office in Burlington at 719-346-5571. **To ensure adequate space for everyone, pre-registration at these locations is required, registration deadline is March 17.**

Testing Dormant Wheat for Life

Ron Meyer, Area Agronomy Agent

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

Visual inspection:

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

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

1. Remove the top three inches of soil containing the plant crown.
2. Thaw the samples and warm to room temperature.
3. Remove soil from the roots and wash with cool water to remove attached soil.
4. Cut off fall growth to within 1 inch above the crown and roots below the crown.
5. Rinse the crowns with cool water.
6. Place 10 wet crowns in a labeled plastic bag, inflate the bag and tie shut.
7. Place the bags in a lighted room, but not in direct sunlight.
8. After four to six days, the crown should show about two inches of growth.
9. Plants that are not growing after six days should be considered dead when estimating survival.
10. Some plants may grow poorly and develop molds. Molds live on dead or injured plants. Plants with mold developing should be considered not viable.

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

LIVESTOCK

Tis the season for a lot of Bull.....

Travis Taylor, Area Livestock Agent

This is the time of year when your mailbox fills with bull sale flyers, catalogs, and every newspaper or beef magazine is twice as heavy from advertisements. These ads feature calving ease bulls, bulls to improve your weaning weights, bulls with superior carcass traits, maternal strong bulls, and the list goes on. We also can expect to see indices with expected progeny differences (EPDs) for every trait you can imagine. Buyers should be able to get the bull of their dreams purchased, but there are some things every “bull buyer” should think about to help make that purchase more successful.

Catalogs are full of information, so be an informed buyer by making yourself aware of what this information really means prior to any purchase. Data type and the amount collected has changed drastically in the past ten years. Today, with the ability to perform genomics testing and by combining that with individual animal performance, breed associations are able to increase the accuracy of EPDs in young bulls with no calves on the ground. Most breed associations have published information available on their breed average EPDs and production indexes. Additionally, most associations and some breeders have developed maternal, terminal, and combination indices that can help you sort through the mountains of data more efficiently. Remember that the available data are just tools helping you select new sires to make your desired herd improvements.

Today, with the emphasis on growth and its influence on EPDs, bulls are pushed harder as yearlings with higher concentrate rations. Moreover, a majority are grown or tested in lots where mud and soft ground are abundant. Unintentionally, this can lead to feet problems that may not be revealed until you are in breeding season. Pay attention to toes and feet when purchasing bulls, make sure they are the correct length and toes are uniform and equal on each foot. Visit with producers and ask questions about the way bulls were developed, if any hoof trimming was done, and if so, which ones received trimming. This is in no way a deal breaker, but may help you decide how to manage bulls after purchase. If possible, take newly purchased bulls home and turn them out to pasture, or into larger lots prior to the breeding season. Doing so will help their mobility and allow possible softened hooves to “harden up” prior to breeding season.

Two other items that should have some attention given to them include scrotal circumference and the bull’s sheath. The sheath should have the correct angle and be tight to the body. This will help ensure that there are fewer injuries during the breeding season. Likewise, scrotal measurement is important to a bull’s fertility and has been linked to earlier advent of puberty in a bull’s offspring. The Beef Improvement Federation states that a yearling bull should have a minimum of 30 centimeter scrotal circumference to pass a breeding soundness exam. They further recommend the same twelve month old bull should have 34 centimeter scrotal to be used as a maternal sire from whom replacements will be kept. Likewise, a two-year- old bull should have 34 centimeter scrotal to pass a breeding soundness exam. Buyers should remember that a yearling will not be able to breed as many cows as an older bull during the first breeding season, nor will he maintain his body condition as easily. Thus, younger bulls may need to be pulled from breeding pastures earlier to ensure that they have time to improve their body condition score prior to the second breeding season.

Most importantly, bull buyers should have goals and criteria when buying bulls. It is important that buyers understand their herds and have a direction in mind prior to going to any sale. As cattle producers we should have herd goals and know what we would like to improve in our herds and what we are not willing to sacrifice to make improvement. For example, you may want to increase weaning weights, but it cannot come at the expense of calving ease and mature cow size. Finally, don’t fall into the trap of “I am at the sale, I better buy a bull.” Purchase your herd sires with intention, do your homework, and don’t forget your goals. Make sure to intentionally check out your local breeders as well, because chances are their cattle are performing in the same type of environment that yours do.

Updated Across-Breed EPD Tables

Scott Stinnett, Livestock and 4-H Youth Development

The Beef Improvement Federation (BIF) has released an update to their Across-Breed EPD (ABEPD) Tables for 2022. These ABEPD tables can be used by beef producers to compare purebred EPDs for eighteen breeds and the necessary adjustments between them. For beef producers looking to crossbreed, this tool can help make bull buying decisions easier by being able to compare eight common EPDs for all eighteen breeds. Genetic improvement when crossbreeding can be better planned using this tool and help producer's get the desired heterosis in their calves.

To view the press release and the updated ABEPD tables, go to the BIF website at <https://beefimprovement.org/>.

Handling and Use of Cattle Vaccines During Processing

Scott Stinnett, Livestock and 4-H Youth Development

As producers begin to plan processing this spring, the proper handling and use of vaccines is imperative to their effectiveness. Minor mistakes can be costly in the future if vaccines are mishandled.

Vaccinating is the main focus during processing especially calves as they are beginning to lose the passive immunity they gained from intake of colostrum. Working with your veterinarian to develop a vaccination plan that fits your herd needs is the first step. Determining which vaccinations are the most beneficial to your cattle herd and meet your production practices can help save time and money. Once those are identified, the proper storage and handling of vaccines can directly affect the vaccines effectiveness.

All vaccines and animal health products have directions for proper storage on the label. Following those will keep new and unused vaccines viable. Where many producers make mistakes are when vaccines are being used in the branding pen or at chute side. The priority should be to protect vaccines from the conditions that can damage a vaccine: improper temperatures, sunlight, and contamination.

A good place to start is to protect the temperature of vaccines. Many vaccines need to be kept cool, below 40°F but above freezing. Using coolers to store vaccines, including what has been drawn into a syringe, can protect from temperature damage. There are commercially made coolers for branding pen and chute side storage but putting together your own is not difficult as long as it can provide stable temperatures. Since most vaccines are liquid based, they can handle being take in and out of storage but should not be left out and should be place back into proper storage when not in use.

Sunlight is another damaging condition, specifically ultraviolet light (UV). Viruses and bacteria in a vaccine were meant to live inside of an animal and not exposed to sunlight. UV light can break them down and can render a vaccine ineffective. Vaccines come packaged either in boxes or tinted bottles to protect from UV light. Many syringes come with tinted barrels as well to protect from UV light. Coolers for temperature controlled storage also protect from UV light.

Contamination of vaccines is also possible. When using a vaccine, having clean needles and syringes can prevent contamination. Many vaccinations need to be mixed before use and transfer needles are available to make this process easier. This would be the first possibility for contamination. Any needle that goes into a vaccine bottle should be new and clean. When vaccines are being drawn up, producers can use new disposable syringes or clean reusable repeating syringes.

Reusable syringes should be cleaned properly before use. Proper cleaning process involves emptying out unused vaccine and rinsing out the syringe a minimum of three times with clean water above 165°F. There are two points to keep in mind with reusable syringes. Do not use soap for cleaning of reusable syringes. It is also advisable to not use a reusable syringe that has had antibiotics in it for vaccine administration. Residuals of antibiotics or soap in a syringe could contaminate a vaccine making it ineffective.

A few more things to remember when administering vaccinations. Administer injections in the injection triangle of the neck to prevent future carcass damage. If multiple injectable vaccines are to be given, space them at least a hands width apart. Use appropriate needle size for viscosity of the vaccine and appropriate needle length for subcutaneous or intramuscular administration. Replace syringe needles every ten to fifteen head and every time you change pastures or groups of cattle. And safely dispose of used syringes and needles to protect yourself and other from possible needle stick injuries.

The Wiltbank Principles **Travis Taylor, Area Livestock Agent**

Calving season is well under way in the Golden Plains, and proactive producers are turning their thinking to the breeding season. It would be advantageous for producers to review the reproduction principles set forth by Dr. James Wiltbank, renowned beef reproduction professor at Colorado State University. These principles dealing with beef reproduction are important to a most economically important trait; having the cow bred on time.

The first and second principles are highly important. The first is to have the cow in a body condition score (BCS) of 5 at calving. This not only leads to a cow with the energy to go through the difficult task of parturition, but cows with BSC 5 will have the available energy stores to prevent dramatic weight loss during lactation, and will maintain a more positive nutritional energy balance into the breeding season. This leads into the second principle, cows gaining weight two weeks prior to calving. Research shows that cows and heifers gaining weight at least two weeks prior to and past breeding have a greater chance to conceive early and on time¹. In normal years this is done by ensuring cattle are on higher quality or new pasture. However, drought cycles lately have impacted this dramatically. Combine this with the fact that cows are trying to breed back at the exact time they are hitting peak milk production, and it makes the need to be in a positive energy, or weight gain, almost imperative.

The third principle is to utilize fertility tested bulls. It is important to only purchase bulls that have passed a breeding soundness exam, and to have them tested around 20 days prior to breeding season. There are a number of things that can cause decreased fertility in bulls, two of the more common are age and frost damage. With the recent cold spells, frost damage to the scrotum can be detrimental to fertility and even if the bull can recover, it takes 60 days for fertile sperm to regenerate after frost damage or even a high fever. The age of the bull at some point will come into play reducing his fertility, and if you

have mixed age bulls running in a pasture together, the older bulls often times are more dominant. This leads to a lower fertility bull, covering the majority of cows in a pasture, and has even more impact later in the breeding season when fewer cows are cycling. Make sure you are working with your vet to ensure that your bull battery is tested and vaccinated appropriately.

Having well grown replacement heifers, or bulls for that matter, is the fourth principle. Heifers should be in a positive energy balance prior to breeding and have reached 55 or 60 percent of their mature weight². This weight is when heifers reach puberty, and sets them up in order to gain sufficient weight prior to calving. It is important to remember that heifers will continue to grow even after their first calf is born, and producers should treat them accordingly. The fifth and principle, and the last we will discuss in this article, is a sixty-day breeding season. To be profitable it is important that cows calve yearly. Taking a year and subtracting a gestation length of 285 days, means that a cow has only 80 days to breed back after calving. I could be argued that if it takes the reproductive tract 20-35 days to return to normal function that leaves only 45 days or just over two cycles for the cow to conceive for that yearly calf. On the calf side, if calves gain on average 2.5 pounds daily till weaning, cows that conceive one cycle late will wean a calf 55 pounds lighter than she could have, or 110 pounds if two cycles late. A sixty-day breeding season, over time will help select for a more uniform sized set of calves to market and more importantly a more fertile cow herd. This year with the increase in cull and bred cow prices, it may be to a producer's economic advantage in the drier Eastern Colorado Plains to look at parting with those late calving cows at the end of this calving season. These five important Wiltbank principles can all be easily obtained with proper planning combined with purposeful management and will lead to a cow herd that calves on time by breeding back efficiently.

¹ Funston, R. N., and A. F. Summers. 2013. Epigenetics: Setting up lifetime production of beef cows by managing nutrition. *Annu. Rev. Anim. Biosci.* 1:339-363

² Funston, R. N., and G. H. Deutscher. 2004. Comparison of target breeding weight and breeding date for replacement beef heifers and effects on subsequent reproduction and calf performance. *J. Anim. Sci.* 82:3094-3099.

HORTICULTURE

Akron and Haxtun Tree Renovation Linda Langelo, Area Horticulture Agent

Check out the link below as our Golden Plain Horticulture Agent Linda Langelo was a podcast guest of Eva Monheim and Hal Rosner certified arborists. She spoke about Extension and spotlighted the GPA tree renovation project in Haxtun and Akron after the derecho of 2020.

<https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fanchor.fm%2Fplantatrilliontrees&data=04%7C01%7CTravis.Taylor%40colostate.edu%7C5e1eac81a97f46857fdf08d9e7437575%7Cafb58802ff7a4bb1ab21367ff2ecfc8b%7C0%7C0%7C637795099183614115%7CUnknown%7CTWFpbGZsb3d8eyJWlloiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Iik1haWwiLCJXVCi6Mn0%3D%7C3000&data=2FVoTN1jnVNsVZMksnVPPSX4FMOtGv8gJUIEUgJSP1l%3D&reserved=0>

Cedar-Quince Rust

Linda Langelo, Area Horticulture Agent

Do not mistake this fungus for another related to it called Cedar-apple rust or even Cedar hawthorn rust. The fungus starts on needles or branches of junipers or cedars. According to University of Illinois Extension, this rust causes a flaky, perennial swelling on branches rather than round galls. That being the case, the swellings may go unnoticed until they start to enlarge and turn orange.

The symptoms of this fungus can vary from host to host. Branch and thorn infections result in spindle-shaped, perennial cankers that expand each growing season. The branches affected by the canker are girdled and can die in the next season.

This fungus has two hosts that it alternates between to complete its lifecycle. After it infects the needles or branches of the cedar or juniper, then it can move onto the any number of 480 species of members within the rose family. Some of these members are apples, mountain ash, flowering quince and hawthorns.

In spring after the fungus infects the evergreen needles or branches of the cedar or juniper, it sends spores from the developing teliospores found after moisture and cool temperatures around 76 degrees Fahrenheit to deciduous trees just leafing out. These teliospores swell and turn orange and that is when everyone starts to notice. These teliospores are again not in the shape of round galls but rather they are orange swellings along a branch. As the teliospores mature and germinate, they produce another type of spore called a basidiospore which are released to the wind and rain. They get on leaves of deciduous trees. It takes seven to ten days after a plant is infected for the swellings or spots to develop into pycnia or tiny black dots within dry orange blister areas on a twig or leaf. Lastly four to seven weeks later, aeciospores are formed in protective sheaths called aecia. These aeciospores return to the juniper host during fall and late summer. In short, the aeciospores return to the juniper or cedar host in late fall/summer while the basidiospores infect deciduous trees in spring.

What's the solution? Besides spraying fungicides on the hawthorn or apple tree as the trees are leafing out to give them protection, plant resistant varieties of hawthorns or apples. Sanitation can be practiced if there are not too many swellings and cankers on branches by pruning out these swellings and cankers in early spring to help slow the spread. Lastly, keeping the tree healthy with proper nutrition. Avoid irrigation overhead or hitting the trunk of the tree with irrigation as this stops the high humidity under the bottom branches of the tree where there is no sun to dry it out. If we have a wet spring and the fungus is already in junipers or cedars, then be proactive and use a fungicidal spray such as Mancozeb, Sulfur or Chlorathalonil for your deciduous tree in the rose family. Follow the directions on the label. Spraying fungicides when flower buds begin to open and continue 1 to 2 weeks past petal fall. Spraying can stop the cycle if you don't have neighbors with cedars, junipers, hawthorns, apple or another member of the rose family. The unfortunate fact is that these cedar-quince rust swellings can be infectious for four to six years or more. With cedar apple rust that is not the case but has an alternate host of juniper and the lifecycle is two years.

Be Firewise

Linda Langelo, Area Horticulture Agent

The possibility of fire is something we don't often like to think about. What can you do to reduce the damage a wildfire can do to your property and home? The Colorado State Forest Service has an approach that can help all homeowners. According to the Colorado State Forest Service, fuel is the only thing we as homeowners can influence with a wildfire. The defensible space is an area with little or no fuel that you create around your home and goes a long way to the possibility of saving your home.

How much debris do we have on our property? Debris such as dead leaves and pine needles left on decks, in gutters and strewn across lawns can ignite from embers. Is there firewood stored on your deck or next to your home? Are there wood fences that end at a garage or an outbuilding or even your home? These can be a great source of fuel that could ignite your home.

The Colorado State Forest Service states, fire moving along the ground's surface can "ladder" into shrubs and low hanging tree limbs to create longer flames and more heat. Give your home a defensible space which is about five feet from your home. Keep in mind how wide a shrub may grow and place it appropriately. The idea of foundation plantings is detrimental to the possibility of saving your home in a wildfire.

The overall thinking is if your home has flammable features or vulnerable openings, it can also serve as fuel for the fire, and become part of a disastrous chain of ignitions to other surrounding homes and structures. Though we don't have control over wind speed, humidity levels, drought, high temperatures or topography, we can add less fuel to the fire by approaching how we look at our landscapes.

Within a 5-to-30-foot space around your home is considered the well-irrigated area. Lawns that are well maintained and mowed reduce the amount of fuel to a fire. Make smart choices of plantings with species that have lower flammability over other plants. These fewer flammable plants have tissues which contain more moisture, especially during fire season. Tissues contain low amounts of volatile oils and other readily flammable chemicals. Broadleaved trees generally are less flammable than conifers such as pines, firs, spruces, junipers. As for a few suggestions for low-growing fewer flammable perennials yarrow, columbine, sea thrift, wormwood, Bergenia, red valerian and snow-in-summer are all good choices. These plants have an advantage due to their genetics, but remember all plants burn and that depends on the conditions surrounding the fire.

Utah State Forest Service has a good link on plants for our landscapes. Many of the plants listed can grow here or we already have growing here: <https://forestry.usu.edu/files/utah-forest-facts/firewise-plants-for-utah-landscapes.pdf>

In addition, here is a link from Colorado State Forest Service with more resources: <https://csfs.colostate.edu/wildfire-mitigation/protect-your-home-property-from-wildfire/>

Calling all Cattlemen

Save the Date 2022 Spring Round-up

Burlington, CO April 4 @ 6 p.m.

Holyoke, CO April 5 @ 11 a.m.

Akron, CO April 5 @ 6 p.m.

Lunch or Dinner Provided

"Gather" information about the following topics

"The Business of Ranching"

A look at how we can manage in these current conditions

Mr. Jeff Geider- Director of the William Watt Matthews Institute of Ranch Management, TCU

"Summer Pneumonia and Impacts on Health"

How we can prepare our cattle for summer management

Dr. Joe Gillespie, DVM- Boehringer Ingelheim Professional Services Veterinarian

Additional Information or to RSVP contact: Travis Taylor 970-332-4151 or email travis.taylor@colostate.edu

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