

Noble County Oklahoma Cooperative Extension Service
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**NOBLE COUNTY
EXTENSION**

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Noble County OSU Cooperative Extension Service

Agriculture News and Updates: June 2020



**NOBLE COUNTY
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2020 Soybean Budget

Trent T. Milacek, Area Ag Econ Specialist

Soybeans will be an important crop for Oklahoma producers in 2020. Grain prices are very different than they were last year and demand outlook is bleaker. However, these are things that producers cannot control. They must look past this and focus on what their skillsets can manage.

The cost to produce soybeans will include the burndown herbicide, seed, rent, crop insurance, phosphorus fertilizer, planting and harvest costs. Excluding planting and harvesting, those costs could total \$170. One unit of seed, or 140,000 seeds, can cost from \$55-\$65 depending on what technology traits are included. Inoculant, fungicide and insecticide treatments can cost another \$10/unit. Herbicide programs and fertility requirements will change this number significantly on a producer basis. With that in mind, it is not uncommon to have a burndown herbicide application and another herbicide treatment with the preemerge herbicide. To cover \$170, producers will need to raise 21.5 bu./acre. Of course, this is dependent on a \$7.90/bu. selling price at harvest.

Some producers may consider custom planting and harvesting if they do not own the required equipment to produce soybeans. Those costs could climb above \$50 per acre depending on the custom applicator. All costs included, a yield above 28 bu./acre will be required to breakeven.

Without price protection, a producer is open to market risk. New crop beans are currently bid at \$8.65/bushel. Basis bids vary based on location, but assuming \$0.75 for basis gives a cash price of \$7.90/bu. A November put option with a strike price of \$8.60 costs \$0.36 and would guarantee a producer a futures price of \$8.24/bu. Using current basis values, this results in a cash price of \$7.49/bushel. With this price risk strategy, breakeven yield is increased by 1 bushel to 29 bu./acre if prices fall below the protected price. If prices increase, a producer is able to capture that price movement.

If there is average to above average rainfall, it should be possible to breakeven. The 5-year average yield from 2014-2018 in the north-central district of Oklahoma is 29 bu./acre. However, in a dry year it will be difficult. This breakeven yield commands fertile soil to be successful. Be careful planting on low pH soils or ground that lacks fertility. Everything must be in good order for a chance to succeed.

If you would like more information on budgeting or growing soybeans, please contact your local county extension educator. Enterprise budgeting software is available to producers so that individual costs and production goals can be used. This will assist producers in adopting new enterprises on their operations.

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Soybean Weed Management

Josh Bushong, Area Agronomy Specialist

Weed control in soybean production has been a persistent issue year after year for many in northwest Oklahoma. Inadequate control is one of the most yield-limiting factors, as some research has shown losses as high as 79%. Certain herbicide programs may seem expensive, but can still be economical if yields are protected. From soybean emergence to the V3 growth stage (third trifoliolate) is the most critical period to limit weed competition to protect yield potential.

In addition to lost yield potential, weed control is usually going to be more effective when weeds are small. Many herbicide options will provide weed size limits on the product label. If an herbicide is applied later than the labeled timing and is not controlled, the weed is not considered herbicide resistant. Increases in herbicide-resistant weeds is becoming a major concern with many producers in the area. Utilizing multiple modes (or sites) of action either in the soybean crop or with other crop rotations is paramount to managing these weeds.

Only relying on postemergence (“over-the-top” or “in-season”) herbicide products limits options and will tend to lead to herbicide resistance sooner. Options are limited especially if applications are delayed due to weather events or breakdowns as weeds become rank and less controllable. A more robust management plan includes preemergence products with residual activity. This may not be as cheap as some of the postemergence products but will provide more modes of actions, act as a safety net in case of delayed post applications, and ultimately should provide much less weed competition early on in the season.

Preemergence products can be applied preplant, prior to crop emergence, and some can be tank mixed with early postemergence products. Preemergence products need to be applied to the soil before germination of the weeds. In no-till production, some products can remain in the previous crop residue and control can be reduced. Some products need to be incorporated into the soil with rain or irrigation to become active. Preemergence and some postemergence products can provide residual soil activity.

To complement an herbicide program, soybean producers can also strategize agronomic practices that can help suppress weeds. Utilizing seeding rate, row spacing, plant populations, and planting date can aid in weed management. Achieving canopy closure as early as possible is the goal. Preventing sunlight from reaching the soil surface will significantly reduce germination of some weed species, especially broadleaf weeds. A thicker stand will cause the soybean plants to grow more erect at a faster pace. Planting around a major weed flush can also allow a final tillage pass or burndown treatment.

Recent field trials by OSU have shown that pairing preemergent herbicides with postemergent herbicides resulted in higher yields (about 10-15 more bushels) and fewer weeds. These trials looked at planting date and postemergence application timings with and without a preemergence. Later planted soybeans generally benefited more from the pairing of a preemergence and postemergence.

To save yield potential, it is best to start clean and stay weed-free for the first few weeks of crop growth. Soybean producers must first decide which herbicide traits is best for their operation, develop a herbicide plan, and also make a backup plan if herbicide applications are delayed or fail satisfactory control. Weed control strategies need to consider future crop rotations and should also be a long term investment in managing herbicide resistant weeds. Going cheap now may become much more expensive later.

How Ethanol Plant Closures affect the Oklahoma Cattle Industry

Dana Zook, Extension Livestock Specialist, Enid OK

A perfect storm of low gas prices and an unstable economy have led to severe reduction of ethanol production. For cattle producers, this means a reduction or even loss of ethanol byproducts as a feed or supplement for the time being. The main byproducts affected include wet and dried distiller’s grains (DDGS). The lesser known distillers steep and solubles byproducts are used in protein and mineral tubs which could lead to an increase in price of these products as well.

Nutritionally, DDGS provided the cattle industry with a perfect nutritional package of both high protein and energy. In a recent article about ethanol byproducts, I explained that the process of ethanol production starts with the extraction of starch from corn. Removing the starch concentrates protein, fat, and fiber threefold leading to the byproduct called distillers grains. Corn is approximately 9% protein in its true form and the threefold concentration will make distillers grains 25 to 30% protein. The energy value is where DDGS shines; providing high energy through a digestible fiber source that is not laden with starch like corn.

In Oklahoma, DDGS had only just become widely available within the last year. In the last feed season, some Cow-calf producers had switched over to the new DDGS cubes supplements and now the protein source in that cube will be adjusted to fill the void of DDGS. Unfortunately, this adjustment will not come without cost, at least for the time being. Local suppliers report a recent \$30-50/ton hike in all cubed products.

Producers using blended or mixed rations will see the most change. A reduction or loss of DDGS is unfortunate but substitutions can be made to recover the nutritional void. Corn gluten, a wet milling byproduct, can be widely utilized to fill a portion or the entire nutritional deficiency. Wheat midds and soybean hulls are relatively similar in energy but midds will provide more protein. For this reason, wheat midds can be substituted for all or a portion of the soybean hulls to help boost the total ration protein slightly. In dairy rations or high protein supplements (25-38% CP), soybean meal can be added. In general, protein is the most costly part of the ration, so the greater the need for this nutrient, the higher the cost. Hopefully most adjustments can be made with little effect on price. However, in the short term producers should expect some increase in price as the supply of products are readjusted to fill the void of DDGS.

So where do we go from here? For Oklahoma, this shortfall came at time when producers should be tapering off supplements as grass greens up and graze out options remain, making the transition a little easier. For grow yards and feedlots, ethanol byproduct availability has been narrowing in the past months and so they had already been making the switch to alternative feedstuffs before the rapid decrease in production. It is my hope that by the time producers want to book supplements for next fall and winter, we will have the DDGS products back to at least some suppliers in the state. Time will tell.

For questions about byproduct feeds or assistance with livestock nutrition, contact your local Oklahoma Cooperative Extension Educator.

To find out more information, contact your local OSU County Extension Office to visit with your Ag Extension Educator and review the Oklahoma Cooperative Extension Service factsheet PSS-2794, Meshing Soybean Weed Management with Agronomic Practices in Oklahoma.

Management of Pocket Gopher and Mole Damage

Dr. Dwayne Elmore

Pocket gophers and moles are both burrowing animals that can cause damage in the home landscape. Gophers are abundant in loose sandy soils, whereas moles are typically found in loose rich soils under a canopy of trees. Moles are insectivores and typically considered to be beneficial animals, but the shallow tunnels they create can be unsightly. Gophers consume plant roots and can damage turf and ornamentals. Gopher burrows are generally not visible from the surface, although they do create large fan-shaped mounds of soil that is pushed to the surface.



Gophers push soil to the surface in fan-shaped mounds such as this.



Mole tunnels are close to the surface and are often visible.

There are no known effective repellants for gophers or moles. Similarly, frightening is not proven to be effective at reducing damage from gophers or moles. Exclusion can be effective for small areas such as vegetable gardens and ornamental plantings, but are not practical for larger areas of turf. For small areas, use rolls of 24" wide fence (1/4" mesh) bent at a 90° angle (facing outward from the protected area), such that the fence will be 12" vertical with an additional 12" of horizontal protection to prevent gophers and moles from digging under the barrier. Soil insecticides are not generally recommended for moles as they must be applied over large areas and moles are easy to trap, thus eliminating soil insects should not be necessary.

Gophers and moles are not protected in Oklahoma and may be controlled year-around with either poisoning (toxicants) and trapping. Trapping is the preferred method, especially for moles. There are several types of traps available and can be found at most lawn and garden stores. Mole burrows are easy to see and harpoon style traps can work for these shallow burrows. These are placed directly over an active tunnel. To set, remove the soil from a small section of a tunnel so that the underground tunnel location can be precisely determined. Then replace the soil, packing it firmly. Place the harpoon trap directly over the tunnel and set the trigger so that it barely touches the soil. Gopher burrows are deeper and usually require body gripping traps that are placed in the burrow. To find a gopher burrow, use an object such as a piece of rebar to probe around a mound area (around 12" from the mound). When the probe breaks through a tunnel, you should notice the soil give way. Once found, carefully dig a hole into the top of the burrow just large enough to place the trap being careful to not collapse the burrow. Cover the hole with a board, burlap, or other object over the hole to keep out light so

that the approaching gopher will not be alerted to the disturbance. If you do not catch anything after a couple of days, move the trap to a new location with fresh sign. If using toxicants, zinc phosphide is one of the most common toxicants available for the home gardener and it is effective when applied according to label instructions. Always place toxic baits directly into tunnels to minimize risk to nontarget animals. Carefully punch a small hole into the top of the tunnel and place the toxic bait or trap underground.

The Oklahoma State University fact sheet NREM 9001- Controlling Pocket Gophers (<http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2709/NREM-9001web.pdf>) has additional information on control of gophers.

Virtually Find Farm Management Resources **Brent Ladd, Extension Assistant**

Producers can learn about farm financial management, production, marketing, and risk management topics online by visiting the e-Farm Management website. This site contains videos, decision tools, and publications for farmers and ranchers to strengthen their farm management skills.

In the Cattle Marketing: Cash Market Basics video, viewers learn about marketing cattle through the cash market. The video shows information about the cattle cycle and seasonality of prices. Lastly, the video shows considerations to take when making marketing decisions for calves.

In the Livestock Nutrition Support Offered by County Extension Offices video, viewers learn about livestock nutrition and how to identify livestock nutrition needs. The video shows information about supplement options and balancing rations. Lastly, the video shows tools that are available for producers to calculate rations

To view this video and find additional information on livestock marketing, visit:
<http://agecon.okstate.edu/efarmmanagement/lmktg.asp>.

More information on this and other farm management topics may be found: 1) by contacting your nearest Extension Educator (<https://extension.okstate.edu/county/index.html>) 2) on the e-farm management website (<http://agecon.okstate.edu/efarmmanagement/index.asp>) or 3) on the OSU Agricultural Economics YouTube Channel (<https://www.youtube.com/user/OkStateAgEcon>).

Grain Digestibility in Cattle **Earl H. Ward, Area Livestock Specialist**

Anyone who has fed a bovine corn has asked if it is worth buying cracked corn versus whole corn. When feeding whole corn, we concern ourselves with seeing a lot of corn in the feces and begin to think if the animal is getting anything out of it.

By processing the grain, which could be dry rolling (or cracking), grinding, or steam rolling (flaking), we want to increase the surface area and the digestibility. Increasing the surface area allows the rumen microbes and digestive enzymes access to consume the feed stuff which should in turn increase the digestibility.

Many research papers have been written on the digestibility and performance of processing grains and there seems to be a consistent reporting of the results. Turgeon et al. reported in 1983 that the percentage of starch in the feces did not improve when corn was fed whole, cracked, or ground. This agreed with Lee et al. (1982) research that reported seeing 21.7% of the starch in the feces but showed an increase in starch digestion when the corn was steam flaked. Huntington in 1997 reported that the total tract digestion of corn was improved to 99% from 92% when comparing steam flaked corn to dry rolled corn.

Research done in the 1980's by Wagoner showed that calves in Oklahoma eating whole corn, dry rolled corn, or steam flaked corn resulted in the same daily gains of 2.75 pounds per day. However, it is the feed efficiency that tells the story. Calves eating the steam flaked corn had a feed to gain conversion of 5.71 whereas the calves eating whole corn and dry rolled corn had feed conversions of 6.19 and 6.21, respectively.

So, if you are feeding corn and are walking through the pasture and see little golden nuggets in the feces, don't get upset that you're not getting the value out of your corn. Although there is not much difference between whole and dry rolled corn there is a large improvement in digestion for steam flaked corn, but there is also a noticeable increase in cost as well. It is recommended to always evaluate the feeding situation and price difference between the different types of processed corn. If you have any questions about feeding animals, please give your county's OSU Extension office a call.

Zinc in Pecan Trees

Becky Carroll, Associate Extension Specialist, Fruit and Pecans

Zinc is one of the essential nutrients needed for plant growth. In zinc deficient pecan trees, symptoms of wavy leaf margins, short internodes (rosetting), and smaller leaves may be noticeable. In larger slower growing trees, symptoms may not be visible but hidden deficiencies may be found when using leaf tissue analysis. Zinc deficiencies are commonly seen in most pecan growing areas across the state.



Most pecan growers in Oklahoma use foliar zinc applications. On young trees, begin spraying when new leaves are unfurling.

One to two pounds of zinc sulfate (36%) in 100 gallons of water can be applied every two weeks until the trees stop growing in mid-July. Sprays should be applied until run-off. These can be combined with insecticide or fungicide applications. Young leaves are more efficient at taking up the zinc, so early season applications are most helpful.

In mature trees, apply zinc with other needed early season sprays or apply about 3 to 4 times early season about 2 weeks between applications. Zinc sulfate should be applied at rates of 4 to 6 pounds per acre.

Many zinc products are available to use as a foliar application. Many of those products contain nitrogen or chelated zinc. Many of the liquid formulations of zinc and nitrogen are mixed at about 1½ quarts per 100 gallons of water. Follow label instructions for mixing and application rates. Some growers believe that the nitrogen helps with zinc absorption. These nitrogen applications will not be enough to provide all the nitrogen needed to the tree. Other forms of nitrogen will need to be incorporated in the management plan.

Be sure to measure and mix well prior to spraying. Zinc and nitrogen can burn foliage if not applied properly.

In soils with low pH readings, or less than 6.0, zinc can be available to the tree from the soil. In higher pH soils, the zinc will be unavailable. Chelated zincs are best applied to the soil rather than zinc sulfate. Chelated zinc products are released slowly and are more available to the tree. Zinc sulfate quickly becomes tied up with soil particles.

Bagworms

David Hillock

Bagworms can be a real nuisance on many plants. In Oklahoma the most common hosts are eastern redcedar, other junipers, and arborvitae. Other hosts sometimes damaged include pines, spruce, bald cypress, maple, boxelder, sycamore, willow, black locust, oaks, and roses. The bagworm has been recorded on 128 different plant species in various parts of the United States.

Symptoms: Bagworm larvae damage their hosts by feeding on the foliage. Heavy infestations can completely defoliate small plants. Defoliation usually kills hosts such as redcedar and other junipers. Broadleaf hosts are not killed, but are weakened and become more susceptible to borers and diseases.

Life Cycle: The overwintered eggs (in the year old female bags) begin to hatch in late April or early May and the young larvae begin to feed and construct bags immediately. The first evidence of an infestation is normally a small bag, about 1/4 inch long, standing almost on end. As larvae grow, silk and fragments of the host plant foliage are added to the bag until it reaches 1 1/2 or 2 inches long. When larvae are mature they fasten the bag to a plant stem with silk. Pupation occurs in the bag in August and males emerge in late August and September. They engage in a mating flight in search of the wingless females still inside their bags. After mating the female lays several hundred white eggs inside her old pupal case, drops from the bag, and dies. There is one generation per year.

Description: Adult males are small, clear winged moths with a black, hairy body and a wingspread of about 1 inch. Adult females are wingless, have no functional legs, eyes, or antennae, and are almost maggotlike in appearance. The female's body is soft, yellowish white, and practically naked except for a circle of woolly hairs at the posterior end of the abdomen. Mature larvae have a dark brown abdomen and the head and thorax are white, spotted with black. They are about 1 inch long. Both larvae and adult females are found in silken bags on the host plants.

Cultural control: Infestations can be reduced by handpicking bags (and overwintering eggs within bags) during fall, winter, or spring before eggs hatch. Eggs remain viable within bags so be sure to destroy bags upon removal by crushing or burning them. When larvae become active, bagworms can still be removed by hand if the numbers are small and the affected host plants are small enough to reach the canopy. Again, take care to destroy the bags once they are removed.

Biological control: There are several naturally occurring parasitic wasps and predatory insects that attack bagworms. The activity of these natural enemies apparently explains the fluctuation in bagworm populations observed from year to year.

Chemical control: Chemical controls are most effective if applied early when larva are small. In Oklahoma, it is normally a good practice to make applications of insecticide by early June. *Bacillus thuringiensis* var. *kurstaki*, a bacterial insecticide, is reported to provide good control of bagworms. Also effective are products that contain the active ingredient spinosad, another microbial agent. These insecticides must be ingested by the caterpillars in order to achieve kill, so be patient as it will take some time to see results. Repeat applications may be needed later in the summer in order to keep susceptible plants free of bagworms. This is not due to the occurrence of multiple generations. Rather, not all eggs will hatch at the same time in some years and there may be migration of larvae between host plants. In most years, treatment in early June will catch most of the emerging larvae and provide fairly good, season-long control. The larger, older larvae can be controlled with products containing acephate (Orthene), carbaryl (Sevin), bifenthrin, cyfluthrin, and lambda-cyhalothrin.