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For more information please contact your MU Extension Center:

Adair
(660) 665-9866

Audrain
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Cover Crops - An Emergency Forage

The old adage, "if you don't like the weather in Missouri, just wait a few minutes and it'll change," does not seem to hold up this year. Missouri has weather data for more than 200 years. April 2018 was the second coldest April on record and was followed by the hottest May on record, which broke the May record by two degrees. Spring was not ideal for cool-season grass growth. Forage and hay supply is low and it is unlikely to be resolved this year, even with favorable weather. Cattle producers may be faced with decreasing herd numbers or finding emergency forage. While there are several options available, grazing and/or harvesting cover crops may be an alternative feed option for some producers to consider.

If you have not planted cover crops, there are several factors to consider before selecting a forage cover crop. Do you have the necessary equipment? If you are currently row cropping, you likely have the basic equipment necessary to plant a cover crop. If you are interested in seeding a cover crop before harvest or concerned with a lack of time at harvest, you may need to consider equipment for interseeding or broad casting seed.

What is the fence and water situation? Most land being cropped today is not fenced and water availability may be limited. Several temporary fence options could be used, but they are not physical barriers and may be more risky based on location and class of livestock.

How does the soil drain? Producers with heavy, wet soils may have a harder time grazing cover crops. Most grazing will take place from late fall-early spring, typically a wetter time of year. If cattle are grazing when conditions are wet, it can lead to significant compaction and may affect the following cash crop.

Which cover crop species? Several cover crops can be used as a forage including cereal grains, oats, annual ryegrass, peas, vetch, brassicas, clover, etc. Selection will largely depend on how soon the cover can be planted (summer, later summer, early fall, late fall) and if a producer wants a cover that winter kills. Producers with wheat will have the most flexibility when determining a cover. The Midwest Cover Crop Council website, www.mccc.msu.edu has a selector tool to help determine which covers would most likely be successful under various parameters. Those looking for grazing this fall, will likely have to interseed into the cash crop to achieve enough growth.

What is cost? Cover crop seed cost is highly variable depending on the source of seed; however, utilizing the feed value can significantly help offset the cost. Producers may be eligible for state cost share to seed cover crops from the county Soil and Water Conservation District. Cover crops in the practice may be grazed once forages are 6-8 inches tall, but grazing must cease when forages are down to 4 inches. Contact your local SWCD office for details on state cost share assistance.

The decision to graze cover crops will be different for each operation, but it may a viable option to help with the low forage supply. A number of cover crops have the potential to extend the grazing season. Most common are cool-season cover crops which can grow late into the fall and be grazed in November and December; forage turnips, cereal rye, triticale, winter wheat and annual ryegrass. The cereal grasses will overwinter in Missouri and can also provide for early spring grazing. Rate of gain on cereal rye, wheat and annual ryegrass has been shown to exceed a pound of gain per day if sufficient fall growth has been achieved before grazing begins. For more information, see MU Guide G4161, *Cover Crops in Missouri, Putting Them To Work on Your Farm* https://extensiondata.missouri.edu/pub/pdf/agguides/crops/g04161.pdf **Source:** *Wyatt Miller, agronomy specialist*

Dry Field Conditions Increase Harvest Fire Risks

Harvest is a prime time for fire dangers, especially with the extremely warm, dry conditions. Fuel sources such as leaves, stalks, husks, dust, oil and fuel are always present when harvesting fields, and so are numerous sources of ignition on farm equipment or transport vehicles including exhaust, bearings and electrical wiring.

Fire safety in the field has two key components -- prevention and preparation in case a fire does break out. The following steps will help in preventing a combine fire:

Electrical systems:

- Keep wiring and fuses in proper operating condition and position.
- Properly route and insulate all replacement wires.
- Use heat-resistant insulation.

Fuel systems:

- Regularly inspect fuel lines.
- Keep fuel lines in good condition with tight connections
- When refueling, always shut off the engine and let the equipment cool for 15 minutes before you refuel.
- Never fill the gasoline supply tank near an open flame, while smoking, or with the engine running.
- Wipe up oil and fuel spills as they occur. This prevents chaff / trash from collecting and mixing to start a fire.

Mechanical operation:

- Use a pressure washer or a compressed air blowgun to thoroughly clean the machine.
- Remove excess crop residue from rotating units.
- Always inspect the machine for buildup of harvest materials (chaff and leaves) before operation.
- Keep your work area clean.
- Check lubricant levels often, and grease fittings regularly. Fix leaking oil, fuel, or hydraulic lines promptly. Check belts for proper tension and wear to reduce friction.
- Carefully check bearings for excessive heat. Overheated bearings are a major cause of combine fires.
- Check valve covers for oil leaks that can ignite as oil runs down manifolds.
- Check for cracked or loose exhaust pipes, ports and check the manifold.
- Pay particular attention to the exhaust system, checking for leaks, damage, or an accumulation of crop residue.

In the field:

- Put out any fire immediately.
- Always have a fire extinguisher within reach.
- Keep at least one fully charged 10-lb. ABC fire extinguisher on all equipment. (Or carry two: one10-lb. ABC fire extinguisher in the cab and one 20-lb. ABC fire extinguisher that can be reached from the ground.)
- Visually check your extinguishers monthly, looking for cracks in the hose and inspecting the gauge to see if the extinguisher is fully charged.
- Invert the extinguishers once or twice a season and shake them to ensure that powder inside the extinguisher hasn't compacted by machine vibrations.
- Have a professional fire extinguisher company inspect your fire extinguishers annually.
- Have a shovel available to scoop dirt onto a fire.
- Carry your cell phone or two-way radio with you at all times so you can summon help.
- If a fire does occur, CALL 911 FIRST, and then attempt to extinguish the fire by pulling the pin on the fire extinguisher and squeezing the handles together. Aim the nozzle at the base of the fire and sweep from side to side. Remember P.A.S.S., which stands for Pull, Aim, Squeeze, Sweep.

In addition to the combine, grain transport or pickup trucks with exhaust systems below the chassis also can ignite field fires. Catalytic converters operate at several hundred degrees. Field fires are sometimes started with the passing of a truck, and flames may not be noticed for 15 to 30 minutes. It is a good idea to not allow extra truck traffic through the field when conditions for fire are favorable.

One should remain vigilant throughout this potentially extremely warm, dry harvest season.

Source: *Kent Shannon, natural resource engineer*

Equipment is Key to Drought Harvest

Harvest conditions in fields will be affected by the severe drought conditions. Equipment usable for harvesting drought damaged crops depends on end use of the commodity, moisture content of the crop and equipment available to use (owned, leased, or custom).

Plant moisture content in may have already dropped below that suitable for the ensiling process (60 to 70 %). Forage material may still be collected in bales or stacks if plant material is dry enough for storage without excess spoilage.

Have the intended use or market for harvested feed in mind before pursuing forage harvest. Harvesting a silage or forage crop with no definite plans for feeding or local sale can be costly. Crop producers can often be caught a year after a drought with poor quality forage and no plans to use it.

Recognize that harvesting a drought damaged crop will be more stressful on the operator due to higher field variability. Do not be tempted into short cuts or using equipment in a manner for which it was never intended. Expect variable crop conditions within individual fields.

Grain harvest

If ear diameter is smaller than normal, stripper plates will need to be moved closer together to avoid excessive shelling on the snapping rolls. This will break off more stalks, increasing the load on the processing unit. Stripper plate spacing on newer combines may be adjustable from the operator's station and can ease adjustment if sizable areas of a field have different ear size. Beware of making numerous on-the-go adjustments or trying to evaluate shelling on the stalk rolls from the cab. At least one cornhead has spring-loaded stripper plates to adjust spacing on-the-go.

If ears are of non-uniform size and shape, adjustment of the threshing mechanism will be a compromise between adequate separation from the cob and acceptable grain breakage level. Concave clearance should be narrow enough to thresh grain from ears. Adjustment for small ears will break larger cobs and over load the cleaning shoe. Chaffer, sieve, and fan adjustment becomes more critical. Grain may be fragile and more susceptible to damage. Ideally, threshing should result in whole but battered cobs exiting the separator.

Soybean threshing needs to be just aggressive enough to remove beans from pods. Beans in drought-stressed fields this fall may be smaller than usual. If beans are small, air flow may need to be reduced in the cleaning shoe and the openings in chaffer and sieve screens reduced to maintain air speed, yet allow beans to fall through. More pods will be close to the ground if plant population has been reduced, so it is essential to keep the cutterbar low. The front drum of the feeder should be low enough so that the chain just clears the floor of the feeder house. If plants are shorter, smaller clearances may be needed between reel, cutterbar, auger, and feed conveyor chain to make sure stalks are feeding through the platform.

Expect to spend more time checking grain loss. Traveling fast enough to keep the combine loaded will improve grain quality, however a greater percentage of material other than grain moving through the combine may increase separation losses.

Forage harvest

A common mistake is to underestimate the moisture content of drought damaged crop. Check moisture content before baling or stacking. Operation of harvesting equipment will generally be similar to that used in a normal crop with a few exceptions. Check your owner's/ operator's manual for useful tips (for example using hay harvest equipment to harvest cornstalks or soybean straw). Your dealer is another source of information.

Windrowers, rakes, balers, and stackers have all been used to harvest corn. Expect that operation of conventional hay harvest equipment in cornstalks may be more difficult or at least require adjustment and some experimentation. Cornstalks are larger and may be more difficult to package. The potential variability of stalk diameter and length will put a premium on proper adjustment. Some equipment may not work in some conditions. Expect more wear, especially on cutting components, than when harvesting hay.

A major objective is to get the stalks dry enough to store. Allow the crop to field dry for much of the moisture removal. Equipment should aggressively shred stalks to promote drying and present smaller pieces for easier packaging. Flail shredding may do this easier than conditioning. If using a conditioner, consider tightening the roll spacing and slowing travel speed for more aggressive action. Stalks that are damp can be hard to start and they tend to wrap in baler belts.

Article developed from materials developed by Mark Hanna and Graeme Quick, Ag Engineers, Iowa State University, Ames, IA

Major Livestock Points to Remember During a Drought

Pasture Management

- Allowing cattle to forage for their own feed is more economical than for producers to do it. During a drought, overgrazing is easy to do, but should be avoided if possible. Producers should try to implement a rotational grazing system, to allows pastures time to rest and regrow.
- Identify a sacrifice pasture, one that is thin and weedy and is in need of renovation anyway. This will allow the decent pastures time to rest between grazing.
- Make sure animals have access to clean water within a close walking distance. If water intake is limited, feed intake will also be limited.
- If forage supplies are low, limit-feed a high-concentrate diet to stretch the supplies.

Cattle Management

- Low forage quality and quantity can lead to the possibility of thinner cows. With poor nutrition, we can expect to see lower oocyte and sperm quality leading to decreased fertilization rates and lower embryo survival if fertilization does occur.
- Producers who calve in the spring may see more open cows than normal. With hay in short supply, it is imperative producers pregnancy check cows early. This allows the option of culling open cows to decrease strain on feed recourses or, the ability to manage them differently allowing feed resources to be managed in the most economical way possible.
- If cows are too thin going into the fall, there could be fewer bred cows leading to fewer calves for next year and could have lighter calves at weaning.
- If cows are still thin heading into next breeding season, producers will again see fewer bred cows and fewer calves. The quality of colostrum may be lower leading to lower calf survival as well.

Culling

- Strategic culling is a way of keeping the good producers in the herd. Do not keep marginal cattle at a time when feed resources are scarce.
- Open cows should be culled. Then look at old cows, late bred young cows, late bred older cows and low producing cows.

Creep Feeding Calves

- Creep fed calves still nurse the dams; therefore, creep feeding does not result in lowered nutrient requirements of the females. They are still sequestering nutrients to produce milk.
- Typically non-creep fed calves catch up with their creep-fed mates post-weaning; therefore, calves should be sold at weaning to realize the greatest return.
- A risk of creep feeding is getting calves too fat, resulting in price discounts or lowered lifetime milk production of heifer calves intended to become herd replacements.
- Creep feeding is not recommended for heifers.

Early Weaning Calves

- Early weaning is usually better than creep feeding.
- Early weaned calves will achieve a daily gain equal to or greater than calves that remain with their dams.
- By weaning the calves, the dam's nutrient requirement decrease by approximately 50-60%.
- It is more cost effective to feed the calf directly.
- Do not wait to early wean until the cowherd has lost substantial body condition and/or there is no forage.
- If cows go into winter in poor shape, nutrient requirements will increase through winter and could hinder the herd's reproductive performance next spring.
- Calves should start on feed approximately three weeks before weaning to ensure they will eat after weaning.
- Young cows and first time heifers should be the first candidates for early weaning. Followed by thin cows, early calvers, then late calvers.
- Retain ownership to generate enough revenue to increase the profit potential of the cow-calf enterprise.

Other Thoughts

- Analyze feeds for nutrient profiles to help determine supplemental feed needs.
- Consider alternative feed sources. Remember on a price per unit of energy, hay is more expensive than corn; however, cattle will remain hungry if only fed corn.
- Feed additives such as Rumensin or Bovatec can increase gains in cattle on a high roughage diet and can increase feed conversions.
- Feeding the standard daily requirements every other day is more effective than a daily feeding of reduced amounts if it comes to this.
- Pool resources-buying feed and supplies in bulk will save money per unit.
- When feeding hay, do not waste it. The use of hay rings significantly reduces the amount of waste. Do not put out more than the cows can utilize.
- Do not store hay outside without protection. Use a tarp, wrap it or put it in the barn. Producers cannot afford to lose the nutrient value of the hay.
- Sell some cows and retain the calves.

Even after the rains come, there can be lasting effects of drought. It is important to weigh the options, then choose what fits the situation. For more information contact your local MU Extension livestock specialist.

Source: *Heather Conrow, livestock specialist*