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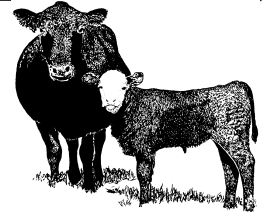
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Preparing for Calving Season



The success of calving season starts long before the arrival of the first-born calf. The USDA's National Animal Health Monitoring System (NAHMS) conducted a beef cow-calf study in 2017 and 2018. The study involved producers in 24 states (including Missouri) representing more than 70% of beef cows in the United States. Results from the questionnaire found nearly all calves (97.7%) were born alive. The percentages of calves born alive to heifers and to cows were similar across herd sizes, while a higher percentage of calves were born alive to cows than to heifers. Since 55.6% of calves were born in February, March or April, for most producers, calving is right around the corner and now is the time to prepare.

Body Condition

Producers should walk through the spring calving herd and body condition score (BCS) animals. Beef cattle are scored from 1 (thin, emaciated) to 9 (fat, obese). Mature cows need a body condition score of 5, while first-calf heifers need to be at a score of 6 going into calving. If cows are not in calving condition, a supplement with higher quality feed is needed so animals can gain condition prior to calving. In most situations, if 20% of cows have BCS of 3 or 4 and the other 80% have a BCS of 5 or greater, then separate and feed accordingly. Feeding cows and heifers prior to calving does not cause calving difficulties. Increasing BCS from 4 to 6 does not increase dystocia rates but will increase rebreeding rates from 50 to 96% (in a 65-day breeding season). Producers should also make sure plenty of feed is readily accessible near the calving area.

For more information on BCS see:
<http://extension.missouri.edu/publications/g2230>

Calving Equipment and Supplies

Calving equipment and supplies need to be obtained and gathered into one location prior to the start of the season. The calving barn and equipment should be clean and in good working condition. A calving toolbox or bucket should include a clean bucket, disinfectant, liquid soap, lubricant, obstetric (OB) gloves, OB chains, OB handles, paper towels or towels, and calf ear tags and tagger. A calf jack is beneficial if it is used properly. Producers should also make sure medications and colostrum are on hand.

Colostrum Replacement vs. Colostrum Supplement

A calf with inadequate colostrum intake is ten times more likely to get sick or die than a calf that gets enough colostrum. Colostrum is the first milk and contains antibodies, energy, and immunological cells and compounds. The immune system response of calves is competent at birth; however, it has no antibodies to fight infection. Colostrum must be ingested by newborn calves within six hours of birth to acquire satisfactory passive immunity. Hand feeding colostrum may be necessary for calves who experienced difficult births or have not nursed within the first four hours. Like the product names indicate, colostrum replacers are used to "replace" colostrum, meaning they are used instead of colostrum; while supplements are used to "supplement" or in conjunction with maternal colostrum intake.

When it comes to colostrum, remember:

The 3 Q's (Quality-Quantity-Quickly)

OR

The 5 C's (Colostrum-Calories-Comfort-Cleanliness-Consistency).

Parturition and Calving Techniques

A knowledge of normal parturition, or the birthing process, is imperative in order to know what is abnormal. Producers should be familiar with the stages of labor, and length of each stage, the difference between cows and heifers, the different calf presentations, and how to assist if needed. Producers should not rely on internet searches to answer questions when time is of the essence to get a live calf on the ground. Reviewing when and how to assist a cow having a difficult birth and knowing when to call a veterinarian for assistance is a must for a successful calving season. Normal delivery should be completed in one to two hours after the water sac appears. In normal presentations, the front feet should appear after the water bag and the hoof will be down. If a first-calf-heifer has not calved within one to one and a half hours after the water sac, it might indicate help is needed.

A successful calving season begins at breeding with the selection of the bull(s) and continues with proper nutrition and management during gestation and especially three-six months prior to the start of calving. Now is the time to prepare mentally and physically for the arrival of baby calves.

For more information contact the local MU Extension livestock specialist.

Source: *Heather Conrow, livestock specialist*



Pause on Beneficial Ownership Interest Registration

The October issue of this newsletter contained an article on Beneficial Ownership Interest (BOI) (<http://agebb.missouri.edu/agconnection/>). Since then, things have evolved. On December 3, 2024, BOI registration was paused with a ruling from the U.S. District Court for the Eastern District of Texas.

The Corporate Transparency Act (CTA) and the requirement of Beneficial Ownership Interest (BOI) registration applies to entities (Limited Liability Companies, C corporations, S corporations, etc.) registered with the Missouri Secretary of State. The deadline for existing entities (formed prior to Jan. 1, 2024) to register was Jan. 1, 2025. There have been court cases related to the legislation for several months.

Things changed on December 3, 2024. A federal district court in the Eastern District of Texas, issued an order granting a nationwide preliminary injunction that: (1) enjoins the CTA, including enforcement of that statute and regulations implementing its beneficial ownership information reporting requirements, and specifically, (2) stays all deadlines to comply with the CTA's reporting requirements. The case was *Texas Top Cop Shop, Inc. et al. v. Garland et al.* The Department of Justice, on behalf of the Department of the Treasury, filed a Notice of Appeal on December 5, 2024.

Texas Top Cop Shop is only one of several cases in which plaintiffs have challenged the CTA that are pending before courts around the country. Several district courts have denied requests to enjoin the CTA, ruling in favor of the Department of the Treasury. The government continues to believe—consistent with the conclusions of the U.S. District Courts for the Eastern District of Virginia and the District of Oregon—that the CTA is constitutional.

While litigation continues, the Financial Crimes Enforcement Network (FinCEN) will comply with the order issued by the U.S. District Court for the Eastern District of Texas for as long as it remains in effect. Therefore, reporting companies are not currently required to file their beneficial ownership information with FinCEN and will not be subject to liability if they fail to do so while the preliminary injunction remains in effect. Nevertheless, reporting companies may continue to voluntarily submit beneficial ownership information reports.

Background

Beneficial Ownership Interest (BOI) is a part of the Corporate Transparency Act (CTA), which was passed by Congress in 2020. The CTA was enacted as part of the Anti-Money Laundering Act of 2020 in the National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283. The CTA was enacted to prevent money laundering, corrupt financial transactions, and financial terrorism. It requires FinCEN, which is a bureau of the U.S. Treasury, to establish and maintain a national registry of beneficial owners of entities that are otherwise not subject to disclosure regulations. Beneficial Ownership Interest is for entities registered through the Secretary of State such as LLCs, S corporations, and C corporations. (For more details on entities see the article referenced earlier in the article.)

The CTA plays an important role in protecting the U.S. and international financial systems, as well as people across the country, from illicit financial threats including terrorist financing, drug trafficking, and money laundering. The CTA levels the playing field for millions of law-abiding small businesses across the U.S. and makes it harder for bad actors to exploit loopholes in order to gain an unfair advantage.

In summary, the ruling is not a final determination of the case. The government has filed an appeal. The case could go as far as the Supreme Court. In the meantime, the preliminary injunction is in place nationwide.

Does this mean entities will never have to register? No. It means registration is on pause until the courts make the final decision on the legislation.

Can you still register? The FinCEN website is working and can take registrations. The site has put up a notice stating, “*Impact of Ongoing Litigation – Deadline Stay – Voluntary Submission Only.*” www.fincen.gov/boi

The National Ag Law Center has a good explanation of the preliminary injunction <https://tinyurl.com/BOI-Dec3>

Source: *Mary Sobba, ag business specialist*



Low Pressure Ground Sprayer Calibration Considerations

Low pressure ground sprayer calibration is the process by which agricultural spraying application equipment is adjusted or modified to give a desired application rate of pesticide in a uniform matter to a given crop to control pests. Without calibration, the applicator has little to no knowledge of the amount of pesticide being applied during field operations. Falling outside of label required application rates can lead to crop damage or reduction of pest control and suppression. Continued reduced rate applications made over time can encourage selection for and development of resistance to pesticides. Similarly, using the same group numbered pesticides repeatedly can lead to resistance. Before calibration begins, there are a few action items related to pre-calibration checks which should be addressed. The applicator will need to determine the ground speed, operating pressure, and spray nozzle width to calculate nozzle output.

Pre-calibration checks include confirming tank capacity, servicing, and checking nozzle output and pattern. Confirming tank capacity is the simplest specification to verify when mixing a spray solution to ensure tank mix concentrations are correct. It is possible to use weight, flow meters, or known volume containers to deduce sprayer tank capacity. Sprayer servicing will ensure nozzle tips, screens, hoses, lines, strainers, seals, and tanks are clean and in good functioning order with no leaks. A small shop leak tends to turn into a big field leak. It can be beneficial to apply a light coating of dielectric grease to seals, gaskets and o-rings before reassembly of sprayer components following cleaning. Excessive grease will plug screens and nozzles. When cleaning nozzle tips and screens, only use a soft bristled

brush or air. Depending on nozzle type, something as soft as a toothpick is enough to damage a spray nozzle, and ruin application rates and pattern uniformity and overlap. Nozzles cannot be repaired; only replaced.

For extra thoroughness, after initial cleaning with a soft brush, nozzles and screens can be cycled through a heated ultrasonic cleaner bath. Ultrasonic cleaners are readily available and a relatively inexpensive non-abrasive cleaning option to ensure the cleanest of nozzles and screens for the next application. When using purpose-made pesticide tank cleaners or other cleaners such as ammonia, utilize proper personal protection equipment. Tank cleaning products are effective, but tank cleaners often have a corrosive nature, so a certain amount of risk is posed to the user if the cleaner label is not followed. Following a thorough cleaning of all internal and possibly external components of the sprayer, starting with a triple rinse (field apply rinsate according to product label specifications), it is applicable to then begin checking nozzle output and pattern.

When checking nozzle output and pattern uniformity, select application rates, nozzles, and screens which are applicable to the specific pesticide label. Nozzle spacing (effective spray width), desired application ground speed and required droplet size for the pesticide(s) being applied will need to be determined ahead of nozzle selection. Reference the pesticide label and nozzle manufacturer literature for proper nozzle/screen selection and carrier volume rate. The use of screens when spraying prevents plugging and excessive wear of nozzles. Screens remove large particles from the spray mixture. Typically, at low volume application rates, 100-mesh screens are utilized. At higher volume application rates or when utilizing pesticide formulations such as wettable powders, a 50-mesh is typically used. Always check the nozzle manufacturers recommendations when selecting screens.

Typically, preemergent herbicides will be applied at a minimum carrier rate volume of 10 gallons per acre (GPA). Post emergent herbicides, fungicides, insecticides, and foliar nutrition products will typically be applied in the 15-to-20-GPA carrier volume range. Several products can be applied with liquid fertilizers, and differences in fluid densities between water and liquid fertilizers must be accounted for. When working with liquid fertilizer carriers, it is still possible (and more cost effective) to calibrate utilizing water, but the spray volume captured during calibration will differ based upon a specific conversion factor for the fertilizer product being used. These conversion factors can be found in the spray nozzle technical section of a nozzle manufacturer catalog. Fertilizer manufacturers may publish liquid densities, but it is possible to simply weigh a gallon of liquid fertilizer solution to determine this. Once nozzles have been reinstalled, pressurize the system to the designated operating pressure within the

specification of selected nozzles which produces the ideal spray droplet size. Typically, ideal droplet sizing will follow a volume mean diameter (VMD) of spray droplets which fall into the fine category droplets for insecticides and fungicides, medium droplet category for contact herbicides, and coarse to ultra coarse droplets for systemic herbicides. Units used for droplet size will be in microns (micrometers). Before capturing spray for calibration, ensure pressure gauges zero properly, and compare pressure readings between a new pressure gauge and the currently installed pressure gauge at least once a year. If the readings differ, leave the new pressure gauge installed.

Capture spray from the nozzles for 30 seconds to 1 minute and then convert the ounces per minute (OPM) captured to gallons per minute (GPM). Remember, there are 128 ounces per gallon, so if each nozzle outputs 128 ounces in 1 minute or 64 ounces in thirty seconds, that tells you nozzle flow rate is 1 gallon per minute. Any nozzles differing in flow rate by 10% from the GPM average of all the nozzles or that differ from 10% of a

new nozzle's GPM should be discarded. A good rule of thumb is to discard all nozzles whenever two or more nozzles fall at 10% or more variance from a new nozzle's output rate.

A good practice to follow is to start each growing year with a new set of nozzle tips, and depending on acreage sprayed and formulations of pesticides used, it may be necessary to change out nozzles more than once a year. Nozzle spray fan orientation should yaw along the vertical axis 10 to 15 degrees from parallel to the boom. This prevents issues in application uniformity due to intersecting collisions of spray droplets in the air.

The conclusion of the article will be in the February issue of this newsletter.

Source: *Nick Wesslak, agronomy specialist*

