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Beef Cattle Production Rules of Thumb

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Advice given to beef cattle producers often comes in the form of rules of thumb. These are general guidelines that producers can then adjust and adapt to their own production settings. While these rules can be very helpful, they must be used in the proper production context to be appropriate. Examples of common rules of thumb in beef cattle production are described below.

Limiting Feed Intake with Salt Rule

Rule:

Cattle consume approximately 0.1 pounds of salt per 100 pounds of body weight (0.7 pounds per day for a 700-pound calf; 1.1 pounds per day for an 1100-pound cow) in salt limited feeds. For example, a 1,300-pound cow should consume 1.3 pounds of salt per day plus the feed that it is mixed with the salt. So to supply this cow with 2 pounds of corn and 1 pound of cottonseed meal per day, offer her a hot mix (salt plus a protein meal) with corn, cottonseed meal, and salt in a 2:1:1.3 ratio.

Important knowledge beyond the rule:

Just as there are wide variations in feed intake amongst individual cattle, there amount of a salt-limited feed that an individual animal consumes can be highly variable. The salt intake rule of thumb may be on target for the average of a herd but not for individual animals within the herd. In some instances, it may not even be on target for the herd average. The only way to know this is to monitor supplement intake.

If it is critical to get a particular animal or group of animals to consume a certain amount of feed, then hand feeding may be the more accurate feeding method. For salt to be an effective feed intake limiter it must be evenly distributed throughout the feed. That is why cottonseed meal and soybean meal, with their small feed particle size that facilitates mixing with salt to a consistent feed blend, are often used in salt-limited supplements. Also, note that salt can corrode metal equipment such as feeders, feed storage bins, and feed delivery equipment.

Cattle may overconsume salt-limiting supplements if forages are restricted. These supplements should not be used if cattle are not provided adequate forage amounts. Use only plain white salt to limit consumption in self-limiting rations. High levels of trace mineral salt in these rations may cause toxicities. Provide plenty of water with salt-limiting feeds. Water consumption may double with salt-limiting feeds. When feeding salt-limited feeds, cattle may not consume adequate mineral from another source. Therefore, it is important to include a good mineral package in the salt-limited mix. In addition, salt is not recommended as an intake limiter for young, lightweight calves.

Target Grazing Height Rule

Rule:

Start grazing bermudagrass when the pasture averages 4 to 8 inches in forage height, and end grazing when the pastures averages 1 to 2 inches in forage height. Allow 10 to 20 days rest before resuming grazing on the pasture.

Important knowledge beyond the rule:

Grazing sticks are yard sticks commonly distributed to livestock producers with target grazing start and stop heights listed on them for several locally grown forages. Charts listing individual forage species with target grazing height guidelines are also available. These recommendations are general guidelines but should not be the sole decision making tool in grazing management. When using these rotational grazing rules of thumb, make sure that accurate assessments of available forage are being used. Simply reading forage height against a grazing stick in a few spots in a paddock is not the most reliable method of evaluating how much forage is available for grazing.

Stocking density (number of animals grazing per acre of paddock) and environmental conditions (soil type, pasture botanical composition, precipitation, daylight length, temperature, etc.) greatly affect forage growth rates. Different livestock species also impact pastures differently through differences in defoliation (leaf removal through grazing), trampling (hoof action and lying), and excretion (urine and manure). For example, horses and sheep tend to more closely graze pastures than cattle. Forage intake also differs among livestock based on factors such as animal size and stage of production. Also, pasture quality changes with forage maturity, so consider livestock nutrient needs when making stocking decisions.

Bull Power Rule

Rule:

In a natural breeding situation, a mature bull can effectively service 30 to 35 females. For young, growing bulls the number of females he can service correlates to his age in months. For example, a 15-month old bull can effectively service 15 head of females.

Important knowledge beyond the rule:

The number of females a bull can effectively service depends upon bull maturity, body condition, paddock size, fertility, libido, length of the breeding season, and structural soundness. The number of females a young bull can successfully cover during a breeding season is typically much less than that of a mature bull due to differences in sexual maturity. There are also trends for some breeds of bulls to reach sexual maturity later in life than others that an across the board bull power rule does not take into account. Additionally, some bulls can effectively service more females than the bull power rule suggests, whereas other bulls cannot adequately service their breeding group using these recommended bull to female ratios. The bull power rule also assumes that bulls used for breeding are satisfactory potential breeders (documented through a current breeding soundness evaluation) with acceptable libido.

The bull power rule is generally intended for single sire breeding groups. In multi-sire breeding groups, where the recommended bull-to-female ratios are maintained some bulls will breed more females than others. The social dynamic of multi-sire breeding groups is much different than that of single sire breeding groups, creating opportunities for different bull behaviors to be exhibited including fighting and dominance.

AM/PM Breeding Rule

Rule:

Artificially inseminate cows 12 hours after observation of estrus or standing heat (in heat during the AM hours, breed 12 hours later during the next PM hours). For cows observed in estrus during the PM hours, schedule breeding for 12 hours later during the next AM hours.

Important knowledge beyond the rule:

Different artificial insemination protocols have different estrus detection and insemination timings specific to each protocol. Some may follow the AM/PM rule, and others may modify insemination timing. Learn the rationale behind and expected conception rates for each insemination protocol considered to choose the most appropriate one for the breeding group and production situation.

Excellent estrus detection is critical to the success of artificial insemination and embryo transfer programs. Make sure to know the signs of estrus (early signs: increased nervousness, restlessness, mounting other cows, swollen vulva; signs during standing heat: stands to be mounted, watery mucus discharge from the vulva, reduced feed intake; late signs: no longer stands to be mounted but may mount other cows, roughed tailhead, mud/manure on hips or rear flanks, matted hair on tail or below vulva from dried mucous). Observe cattle for adequate lengths of time and frequent intervals to pinpoint the start of estrus. Use animal identification systems that allow for easy identification of each female for estrus detection purposes. Keep precise, detailed, and accurate estrus detection records. Estrus detection tools, both high-tech and low-tech, are available assist in these efforts.

Summary

Cattle and pastures are biological systems with many unknowns. Sometimes individual animals defy expectations for productivity, health, or other measures. Understanding the reason behind a particular rule of thumb and the additional recommendations related to the rule is important for making safe, effective production management decisions. The saying, "Rules are meant to be broken (or bent)" can be applicable when using some beef cattle production rules of thumb and under some production settings. In other instances, rules of thumb can be good guiding principles that become even more useful with additional related knowledge. The bottom line is that it is wise to learn as much as possible about a production practice before implementing it. For more information on beef cattle production, contact an office of the Mississippi State University Extension Service.