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Late Summer Weeds Can Be Toxic

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With dry, hot weather, late summer pasture can become thin and short. Occasionally, this may entice cattle to browse on weeds they wouldn't typically eat when adequate forage is available. Some weeds can be very toxic to cattle and other livestock. It never hurts to assess your pasture for toxic weeds and to realize they can have a detrimental effect on your livestock.

Perilla mint weed (aka Purple mint) is found in semi-shady areas of the pasture. When cattle take to the shade in the hot afternoons, they may be tempted to munch on this toxic plant. Mint weed contains a ketone toxin that leads to severe respiratory problems in animals. This toxin causes the affected animal's lungs to fill with fluid, leaving it unable to breathe properly. Affected cattle show signs of respiratory distress such as breathing with their mouth open and neck extended, frothy salivation, grunting when breathing and generalized weakness. Death often occurs within one to two days after onset of illness. Treatment for the perilla mint toxin is very limited. Often, the stress of handling the affected animal for treatment is enough to exhaust their already weakened state. The best medicine is to prevent the consumption of the plant, if possible.

Bracken fern is typically found across mountainous areas. It grows in clusters in semi-shady areas of pastures that contain rocky soil. Bracken fern contains a toxin that can lead to problems with internal bleeding in cattle. Blood loss can occur in the intestinal tract, in urine or from other body orifices. When toxicity occurs, affected cattle exhibit signs of severe weakness, fever, rapid weight loss, blood in feces or urine, anemia and potentially death. Bracken fern toxin can also lead to a thiamine deficiency in some animals. Thiamine is an important B vitamin, and deficient levels lead to neurologic disease causing staggering, weakness, clumsy gait, convulsions and death. Younger stages of the plant tend to be more palatable, and animals may develop an appetite for young bracken ferns. However, consumption of bracken fern tends to occur when other

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forage is less available. Treatment for bracken fern poisoning is limited. The best prevention is to limit access to the plant.

Nightshades are another common group of pasture weeds found in late summer. Nightshade (aka horse nettle) has small berries that are similar in appearance to cherry tomatoes but are typically smaller and are usually yellow or black in color. Nightshades contain alkaloid toxins that can lead to signs of gastrointestinal upset in animals that consume the plant. Clinical signs may include diarrhea, excessive salivation, poor appetite and generalized weakness. Even though death may not be as common with nightshade toxicity, poor performance and weight loss can be costly in affected cattle.

Pigweed (aka Redroot) is a common weed in barnyards, pastures and corrals. This plant contains two potential toxic principles. First, pigweed can accumulate nitrates and lead to nitrate poisoning if ingested by cattle. This can be especially hazardous after spraying the plant with herbicides. Second, pigweed

contains oxalate crystals which can lead to severe kidney damage after ingestion. Severe kidney damage is irreversible, and affected animals will lose weight and suffer poor performance until they die from kidney failure. Animals will typically avoid pigweed if other adequate forage is available.

Considered good forage by some producers and a weed by others, Johnsongrass can also lead

to toxicity problems in cattle. Like pigweed, Johnsongrass can accumulate nitrates and be a source of nitrate poisoning for grazing livestock. Signs of nitrate toxicity include heavy breathing, staggering, weakness, abortions and death. Johnsongrass can also contain prussic acid (cyanide) in its leaves and stems, which is very toxic to animals. Young plants that have been stressed by frost, wilt or recent application of herbicide contain dangerous levels of free cyanide in their leaves. Cyanide prevents the body's ability to normally utilize oxygen. Therefore, affected cattle may show respiratory symptoms, but sudden death is a very common occurrence. Johnsongrass is very common throughout our state.

Late summer pastures can often be short on forage and full of weeds. Always keep in mind that some of those weeds can be poisonous to your livestock. Usually, the best method of controlling plant toxicity is to limit exposure to the poisonous plant initially. For more information about toxic plants or other tools for managing your farm, contact your county Extension office.

2008 Across-Breed EPD Table

BRETT BARHAM, PH.D.

The table of adjustment factors to be used to estimate across-breed expected progeny differences (AB-EPDs) for 16 breeds was presented at the Beef Improvement Federation Annual Meeting in Calgary, Alberta, on July 2. Across-breed adjustment factors have been calculated for growth traits and maternal milk since 1993. This year, adjustment factors for carcass traits have been calculated for 8 of the 16 breeds for the first time. In order to be included, breeds had to have carcass data in the U.S. Meat Animal Research Center (USMARC) database and report their carcass EPDs on an actual carcass basis using an age-adjusted endpoint. Bulls of different breeds can be compared on the same EPD scale by adding the appropriate adjustment factor to the expected progeny differences (EPDs) produced in the most recent genetic evaluations for each of the 16 breeds.

As an example, suppose a Hereford bull has a weaning weight EPD of + 35.0 lb and a South Devon bull has a weaning weight EPD of + 32.0 lb. The across-breed adjustment factors for weaning weight (see table) are -2.9 lb for Hereford and 3.6 lb for South

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Devon. The AB-EPD is 35.0 lb + (-2.9) lb = 32.1 lb for the Hereford bull and 32.0 lb + 3.6 lb = 35.6 lb for the South Devon bull. The expected weaning weight difference when both are mated to cows of another breed (e.g., Angus) would be 32.1 lb - 35.6 lb = -3.5 lb.

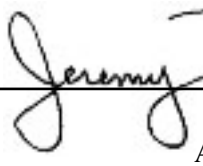
The AB-EPDs are most useful to commercial producers purchasing bulls of more than one breed to use in cross-breeding programs. In terminal cross-breeding systems, AB-EPDs can be used to identify bulls whose progeny would have the highest growth potential when mated to a third unrelated breed (e.g., choosing between a Simmental and Charolais bull when mated to an Angus female). Birth weight AB-EPDs are useful for selecting bulls for use on first calf heifers to decrease the likelihood of dystocia. The carcass adjustment factors can be used to determine which bull's progeny would have more marbling and larger ribeye areas or reduced backfat. Uniformity from one generation to the next can also be improved by selecting bulls with similar AB-EPDs. Selection for uniformity is especially important in rotational cross-breeding systems for traits such as birth weight to manage calving difficulty and for traits related to cow size and milk production to effectively manage feed requirements in cow herds.

Most breed associations publish EPDs on an annual basis. These EPDs predict differences expected in performance of future progeny of two or more bulls within the same breed for birth weight, weaning weight, yearling weight and maternal milking ability (as reflected in progeny weaning weights). Normally, the EPDs of bulls from different breeds cannot be compared because most breed associations compute their EPDs in separate analyses and each breed has a different base point. The across-breed adjustment factors allow producers to compare the EPDs for animals from different breeds for these traits; these factors reflect both the current breed difference (for animals born in 2006) and differences in the breed base point. They should only be used with EPDs current as of July 2008 because of potential changes in EPD calculations from year to year.

The adjustment factors in the table were updated using EPDs from the most recent national cattle evaluations conducted by each of the 16 breed associations (current as of July 2008). The breed differences used to calculate the factors are based on comparisons of progeny of sires from each of these breeds in the Germplasm Evaluation Program at USMARC in Clay Center, Nebraska.

Adjustment Factors to Add to EPDs of 16 Different Breeds to Estimate Across Breed EPDs

Birth Breed	Wt.	Weaning Wt.	Yearling Wt.	Maternal Milk	Marbling Score	Ribeye Area	Fat Thickness
Angus	0.0	0.0	0.0	0.0	0.00	0.00	0.000
Hereford	2.7	-2.9	-12.8	-15.3			
Red Angus	2.8	-5.2	0.9	-3.9	-0.02	-0.13	-0.062
Shorthorn	6.5	31.0	44.1	18.1			
South Devon	3.3	3.6	-5.7	-5.6	-0.57	0.07	-0.008
Braunvieh	6.2	29.4	17.8	25.3			
Charolais	9.6	39.0	47.3	2.9	-0.79	0.43	-0.355
Gelbvieh	4.4	5.0	-22.4	7.0			
Limousin	4.0	-3.8	-27.8	-11.9	-1.08	0.58	
Maine-Anjou	7.0	-3.6	-31.6	-6.0	-1.08	0.84	-0.305
Salers	4.2	30.3	43.4	13.1	-0.10	0.52	-0.276
Simmental	5.4	23.3	16.9	13.9	-0.84	0.67	-0.335
Tarentaise	3.0	31.5	18.2	20.5			
Beefmaster	9.2	45.1	45.1	-2.1			
Brahman	12.5	38.0	2.5	27.5			
Brangus	5.8	27.4	28.8	-3.9			



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