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Pregnancy Toxemia

You are never too old to learn and don't always know when teaching moments will pop up. This past weekend I had the opportunity to listen to my daughter's last formal 4-H presentation at the Kansas State Fair. Prior to her talk, a young man gave a presentation on pregnancy toxemia and his experiences. Dr. Kelsey Bentley, K-State Sheep and Goat Specialist, also recently shared information on this topic with Extension agents on an update. I've dug in a bit on this topic and feel like it might be a good time to share as prevention, since we are in the traditional breeding season for small ruminants.

Pregnancy toxemia (ketosis) affects ewes or does during late gestation. It occurs more frequently in sheep than goats. Incidence rate is more common in either fat or thin animals that carry multiple offspring. The condition develops when the ewe or doe cannot ingest enough nutrients to meet both the glucose requirements of the growing fetus and her own body metabolism.

During early gestation, the dam's increased appetite is enough to encourage her to compensate for the increased nutrient needs. By late gestation however, the growing fetuses are taking up more space in the dam's abdomen, and she is often physically incapable of eating enough to meet her needs unless more nutrient-dense feeds are provided.

Besides multiple fetuses, health and management factors can predispose a pregnant ewe or doe to ketosis during pregnancy. For example, not enough feeder space will prevent timid individuals from eating their ration share. Lameness or other health issues may prevent affected animals from walking to feed or standing to eat. Any issue that causes a late-term pregnant doe or ewe to have reduced feed intake even temporarily—transportation, shearing, inclement weather, etc.—can result in ketosis.

If adequate energy is not available to the gestating ewe or doe, she can metabolize body fat to meet her own nutrient requirements. When fatty acids are metabolized at high rates, ketone bodies are produced, which can be dangerous at high levels. The condition where excess ketones are present in the bloodstream, known as ketosis, results in depression and anorexia until the ewe or doe becomes too weak to stand. Signs of pregnancy ketosis are initially subtle and include depression, lethargy, poor appetite, dull eyes, low fecal output, changes in behavior and general "slowness." As the condition progresses, affected animals may manifest tremors, circling, teeth grinding, blindness, wandering, star gazing and incoordination progressing to recumbency, coma and death.

Producers can take steps to prevent pregnancy toxemia by properly managing the weight of ewes or does throughout the year, and especially prior to breeding and during gestation. Ewes and does should be body-condition scored at breeding, as overweight and excessively thin ewes or does are at a higher risk for ketosis. Using ultrasound during pregnancy to determine fetal number, and animals gestating multiples being fed and managed differently than those with singles is a good strategy to minimize risk of toxemia. While it is acceptable for overweight ewes or does to lose weight during the first two trimesters, they should be gaining weight by the third trimester.

Feeding grains with increased energy density during the third trimester, or about six weeks prior to lambing or kidding, will help to prevent pregnancy toxemia. Providing higher quality hay is also a good idea for gestating ewes or does. Shearing ewes also makes it easier to monitor body condition and causes increased feed intake.