

Vitamins A&E can be depleted in stressful situations, including drought.

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Producers grazing livestock this summer should consider supplementing vitamins A&E due to drought conditions, said Alvaro Garcia, SDSU Extension Agriculture and Natural Resources Program Director & Professor.

"Both vitamins are typically present in green forage, however when most of the diet consists of dry summer pasture or dry, bleached hay, deficiencies in both vitamins is likely," Garcia explained.

Garcia encourages livestock producers to consider supplements that contain these vitamins if they are not available through grazing.

"When facing a drought, one usually thinks first about forage and water shortages, however there are other highly essential nutrients that may be critically short under these conditions. Reduction in the fat-soluble vitamins, such as A & E usually poses a problem," he said.

SDSU professor encourages livestock producers to consider supplements that contain these vitamins A & E if they are not available through grazing. (Photo: jmt0826/Thinkstock)

He added that other drought-related stressors, such as aflatoxins in supplemental feed and reduced water quality, can also deplete livestock's stores of A&E.

Garcia is not worried about vitamins D and K, which are two other fat-soluble vitamins, because they are readily synthesized through sun exposure and gut microbes.

What role do vitamins A & E play?

Vitamin A plays a critical role in vision, growth, and reproduction. Vitamin A deficiency has been associated with abortions, retained placentas and compromised immune function, as well as an increase in the number of sick and dead calves.

In cows supplemented with vitamin A or beta carotene as provitamin, pregnancy rate doubled particularly in the second and third cycles.

Cow/calf pairs challenged by the environment either by disease or other stress rely on the vitamin A stored in their liver or the one supplied with the minerals for their protection. If they haven't been supplemented or they are not fed green forages their reserves may last up to 180 days.

Vitamin E helps maintain the integrity of the keratin, and as such it helps protect the eyes from pinkeye, a common problem oftentimes also observed during the summer. Around calving time,

for example, high levels of this vitamin have been associated with boosting white blood cells necessary to fight infections. As a result of their antioxidant properties, both vitamin E and selenium prevent cell and tissue damage protecting from the invasion of pathogens.

Supplement recommendations

When purchasing mineral supplements, Garcia encourages producers to verify that they contain adequate concentrations of vitamins A and E. It is advisable that trace mineral tubs or licks for cows with their calves contain 500,000 international units (IU) of vitamin A and 50 of vitamin E. This is particularly critical when pastures are dry and bleached, a clear sign the vitamins have been oxidized.

Source: SDSU Extension