Study finds how rangeland grasses and upland sedge stack up in crude protein, TDN

How do some common rangeland grasses and an upland sedge compare in their crude protein and total digestible nutrient (TDN) contents?

We sampled western/thickspike wheatgrass (AKA rhizomatous wheatgrass), needle-and-thread grass, green needlegrass, bluebunch wheatgrass, and threadleaf sedge, which are common throughout Wyoming's eastern plains and western basin.

Monthly samples were collected from pastures in northeast Johnson County (Powder River Breaks) and along the Red Wall and foothills of the southern Bighorn mountains in northwest Natrona County between July 2015 and October 2018.

The Texas A&M University Soil, Water, and Forage Lab analyzed samples for crude protein and acid detergent fiber (ADF) amounts. TDN levels in the plants were determined from their ADF values.

The table below shows crude protein and TDN of the rhizomatous wheatgrasses, needle-and-thread grass, green needlegrass, bluebunch wheatgrass, and threadleaf sedge for January through April, May and June, July, August and September, and October through December.

Combining months, except July, was due to the similarity of the quality values throughout those months. Crude protein and TDN were highest in May and June and lowest during the dormant season of October through April.

Rhizomatous wheatgrasses contained more crude protein compared to the other grasses and the sedge, and its TDN levels were higher, except for that of needle-and-thread. However, dormant season TDN levels of all were satisfactory for non-lactating beef cows in mid-gestation, and growing season amounts were sufficient for a cow in late gestation and when lactating.

Crude protein levels were only adequate in late spring and early summer in all the grasses and sedge for cows in all stages of production, and the rhizomatous wheatgrasses contained enough in late summer to meet the needs of a dry cow in mid-gestation.

Knowing the quality of range forage throughout the year is important to ensure the livestock nutrient needs are being met and if not, what needs to be supplemented. The results indicate that if a rancher chooses to sample their rangeland grasses and upland sedges for crude protein and TDN analysis, they need only sample the predominate plants and combine them, saving time and costs.

In addition, sampling would only need to occur in late summer and the dormant season to assess potential nutrient shortfalls, especially for crude protein.

Knowing the quality of range forage throughout the year is important to ensure the livestock nutrient needs are being met and if not, what needs to be supplemented.

Sheri Hagwood, hosted by the USDA-NRCS PLANTS Database

Western wheatgrass (*Pascopyrum smithii* (Rydb.) Á. Löve)

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	%Crude Protein					%Total Digestible Nutrients				
Grasses/Sedge	Jan – Apr	May - Jun	Jul	Aug - Sep	Oct - Dec	Jan – Apr	May – Jun	Jul	Aug - Sep	Oct – Dec
Rhizomatous wheatgrasses	3.71	12.36	8.71	6.36	4.25	59.0	68.3	65.8	62.5	59.5
Needle-and-thread grass	3.49	10.54	7.18	5.87	4.10	57.1	67.0	64.8	61.8	58.6
Green needlegrass	3.26	11.10	6.95	4.94	3.26	55.9	67.6	64.1	59.9	56.8
Bluebunch wheatgrass	3.29	9.30	6.92	5.48	2.98	54.9	63.3	63.4	61.9	53.8
Threadleaf sedge	Not sampled	11.00	6.81	5.84	Not sampled	Not sampled	69.8	68.0	64.1	Not sampled

We know you'd rather not give - or get - food poisoning. Here's how not to.

This is a case of not better to give OR receive

Enjoying the outdoors is part of living in Wyoming. Food safety can be a concern whether enjoying winter or summer activities. While foodborne illnesses are more common in the warmer months, these safe food practices can help you stay healthy all year long.

Farmers Markets and Gardens

- Wash fruits and vegetables under cool, running water. This is necessary even if you do not eat the outside or the skin. Bacteria from the outside can end up inside when cutting into a melon or peel a banana.
- Once cut, keep fruits and vegetables refrigerated.
- Use separate cutting boards for fresh produce and other foods, like meat and poultry. Wash and sanitize cutting boards between foods to avoid cross contamination, especially when cutting fruits and vegetables that won't be cooked.
- When buying fresh produce at the farmers market, use an insulated grocery bag with an icepack to keep fruits and vegetables, especially leafy greens, from wilting.
- If buying perishables at the farmers market, like meats or dairy products, bring a cooler with ice or icepacks to keep food safe, and put it in a refrigerator as quickly as possible.

Barbeques

- Wash hands before and after handling raw meat, poultry, and seafood.
- Keep raw meat, poultry, and seafood away from other foods.
- When grilling, use clean utensils and plates for cooked food and never place cooked foods on a plate that held raw food.
- When marinating, keep foods refrigerated and do not reuse marinades.
- Cook foods to the correct temperature. Use a food thermometer to check.
- Keep raw meat, poultry, and seafood refrigerated or in a cooler with ice until ready to cook, and put cooked food away quickly.

Camping

- Transport foods in a cooler and bring the smallest amount possible. For example, bring a small carton of milk. Discard any perishable foods if the ice melts or the icepacks are no longer frozen.

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