



I hope 2023  
continues to  
bring some  
much-needed  
moisture for all  
of us, feed prices  
are “low,” cattle  
prices are “high”  
and that I see  
you at an event  
this year!

By Theresa Becchetti  
Livestock & Natural  
Resources Advisor

## Testing Your Hay - What Does it All Mean?

I’m sure at some point in time you have had someone tell you to “test your hay” (or soil or grass, etc.). Well, if you have ever wondered why, what to look for and what do the results mean, keep reading. As a horse owner, if there are any issues with your horse’s health, your vet has probably told you to “test your hay”. But, for all livestock owners, if you have any health issues with your livestock, testing their hay can give you a lot of information about what might be going on with one specific animal or even the entire herd. I’ll focus on hay, but it will be pretty similar for any forage you are feeding your animals, including pasture.

**Find a lab.** We have many labs around in the northern San Joaquin valley and a quick search in the phone book (if you still have one around!) or on the internet for “Analytical Labs” will give you some options in our area. You can call them up or look at their websites to see what services they offer. There are also labs you can mail samples to in New York, Oklahoma and of course, UC Davis.

**What to test.** Depending on what you are looking for there are many options in tests to be performed and some labs offer different tests. Your first decision is between NIR and West Chem. NIR (Near Infrared Reflectance spectroscopy) is quick and therefore cheaper. It relies on a relationship to be built using wet chem to determine how the reflectance differs for different levels of protein (or magnesium or iron, etc.). This test is great for quick, inexpensive results for hay, but if you wanted to test your annual rangeland forages – relationships still have not been created and you will not get good results back. Wet Chem is the way to go for any of your annual forages or anything out of the normal (targeted grazing on weeds or brush, for example). It will cost more than NIR but will give you better results.

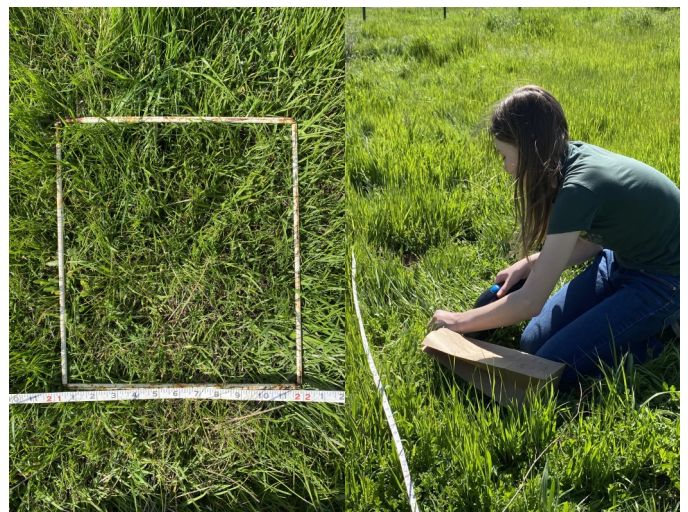
**Options for testing.** Most of your options will be pretty easy to figure out. Crude protein (CP) lets you know how much protein is in your feed, normally on a percentage basis. Minerals are typically reported in parts per million (ppm). The carbohydrate portions can be a little more challenging to make sure you know what you are looking at. I’ll go through each of the different options below so you can determine what you need and be able to understand what the information is telling you.

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*Acid Detergent Fiber (ADF) and Neutral Detergent Fiber (NDF).* The structural carbohydrates are what allows the plant to stand up in the field and results are reported back to you using ADF and NDF. NDF is the total plant fiber (cell wall) and includes the hemicellulose, cellulose, and lignin. ADF is the cellulose and lignin content only. They are both typically reported as a percentage. Now here is where it can get tricky. ADF can be used to determine Total Digestible Nutrients (TDN) and Net Energy (NE). NDF can be used to estimate how much feed an animal will eat. NDF is probably more useful when finishing animals than animals on pasture. So how do ADF and TDN relate to each other? The lower the ADF, the higher the TDN. You can think of it this way, as the amount of lignin increases from the lush spring feed in the pasture to the dried tough stalks in the summer, the energy decreases in the forage. ADF increases and TDN drops. It is why in the summer on annual rangelands you need to provide some energy (grain, molasses supplement tub, etc.). They might have enough forage to graze and keep their rumen full, but the forage doesn't provide much energy to meet their requirements. If we are talking about hay, the lower ADF hay should cost more since it will be better quality hay. If you find "cheap" hay, you can probably safely guess the quality is pretty low. Depending on your goals for your animals, that is not always a bad thing.

The other part of the carbohydrate equation is non-structural carbohydrates, or the sugars. To test for sugars, labs will use Ethanol Soluble Carbohydrates (ESC) or Water Soluble Carbohydrates (WSC). ESC will tell you about monosaccharides, disaccharides, oligosaccharides, and some fructans, where WSC does all of that and the remaining fructans. If your vet tells you to check your sugar levels – ESC or WSC is what they mean. Some horses are "easy keepers", and your vet may want you to keep an eye on the sugar content of the hay to ensure they don't gain weight too easily. I think we can all relate this time of the year when we have too many options for cookies and sweets- all sugar and not much fiber! Instead of just getting ADF tests and guessing the sugar content based off the ADF percent, it would be beneficial to get actual results to talk to your vet and provide a full picture of your horse's diet.

**Grabbing samples.** It is important to get a good sample to whatever lab you are using since the quality of the results they give you depends on the quality of the sample you give them. The adage "Crap in crap out" comes to mind here. Take time to get a good sample so the money and time you are spending provides you with good results. Most of the labs will tell you what to get, so be sure to ask or look on their website. In general, if you are testing hay, you will want a sample from the middle of the bale, not the outside that may have been exposed to various things (sun, moisture, rats, cats, etc.) that might change the results. If you have a corer – a long skinny probe you can use to get a sample through the middle of the bale, that is great. If not, ask your lab if some grab samples from the center will work for them. If you are sampling a pasture – make a grab sample by walking through the pasture and grabbing handfuls of forages (mix of the grasses and the broadleaved plants out there) cutting or pulling them from close to the base – you want to mimic how your animals are grazing and not just get the top part of the plant. Grab samples from many spots in the pasture to try and get a good mixed sample, tossing them all into a large brown grocery bag to create a "composite sample". If your pasture is thousands or even hundreds of acres, maybe you are just concerned about one part of the pasture or maybe you do grab samples for distinct parts of the pasture, for example three samples from one pasture instead of one. Talk to the lab and your vet, they should help you determine how many samples you need. If you are getting wet samples (fresh grass), sample and get to the lab as fast as you



can to make sure you don't have any mold happening in the bag. A good reason why you should use a paper bag instead of a plastic bag.

**Results.** So now that you have your results back, what does it all mean? Most labs will give you results with some guidance on it, like normal range of levels for each thing they tested. Be sure to look and see if the results are on an “as fed basis” (with the moisture still in there) or on a “dry matter basis” (should be 100% dry, how you compare different feeds to each other for their nutritional value – apples to apples). The normal ranges for everything will vary by not only the species of livestock you have, but also by the stage of production. A 1,200-pound dry cow in last third of gestation needs 746 grams per day (7.8% of diet) of protein compared to 1001 grams per day (9.5%) for the same cow nursing in the first few months with an average amount of milk. A 200-pound ewe ranges from 131 to 353 grams per day of protein from a dry ewe to an ewe nursing twins. Horses have more variation in their needs based on how much they are working, but can vary between 8.5% CP upwards of 13.5% for yearlings.

If your forage has more than what your animals need, it can cause problems. If we are talking about hay, “simply” find another type of hay or source of hay. If this is your pasture, it is not as easy to fix, but there are some things you can do. Overseeding

with a less nutritious forage can help “dilute” a higher quality diet. You can also time grazing to the stage of production requiring the most nutrients which most ranches already do. If your forage is lacking in something, then you need to think about what you can provide (different forages, supplement tubs, salt licks, etc.) that can provide what your animals need.

When you test your feed, it can help you finetune your most expensive part of your operation. You might be overspending and can reduce costs by selecting something that better provides for your animals’ specific needs. Or if you are seeing health issues, forage quality will be linked to pregnancy rates, laminitis, and overall health and wellbeing. It can be worth the cost of the sample to find out what your animals are actually receiving.



## Livestock Ag Pass

Some of you may know that in 2021 Governor Newsome signed into law, a bill that allowed for an Ag Pass program. Basically, the program will allow for ranchers to be identified and once the Incident Commander (IC) has declared an area safe during any disaster, Ag Pass holders will be allowed to enter the disaster area to care for their livestock. Many counties are working on implanting the program and in November the Stanislaus County Board of Directors approved the Pass for Stanislaus County. San Joaquin County should start working on the process through the county departments in early 2023,

which is our hope and goal. There are no guarantees when San Joaquin County Board of Supervisors will have this in front of them to approve, it does need to go through a process and have County Counsel approve the language, which includes a lot of liability. I can share that all five of the Stanislaus County Supervisors were in support of the program and even our Supervisor representing the city of Modesto wanted to know why a program like this was not already in place. It seems like it should be a simple process once the lawyers are happy with the liability piece.

The program is being administered through the Ag Commissioners in each county so far, and we believe will continue to be the model in all counties. Livestock Advisors are very involved in each county. We have been or will be organizing the required trainings and working with the Ag Commissioner office to ensure all eligible livestock owners have the ability to register for the program. Most counties have used 20 animals as the minimum number of animals to qualify for the program. More information for Stanislaus County will be coming out soon in the new year, but I wanted to make sure everyone was aware now. We plan to have the mandatory four (4!) hour training conducted by Cal Fire in conjunction with our normal livestock meetings in order to be as efficient as we can for everyone. You can attend a mandatory training in another county if that works best for you, or for San Joaquin since the program is not approved yet, other counties have honored the training that was taken in another county before their county program was approved. Which leads to my next blurb....



## Livestock Meetings are Back!

After COVID through a couple of twists in holding meetings at facilities, we are planning to be back in 2023! The Rangeland Summit has pushed back from mid-January to late February to ensure there are no COVID holiday issues like we had last year. And the Oakdale Livestock Forum will be back in March and Westside Rancher Meeting in April at Frank Raines Park as always. For the Oakdale and Westside meetings, the morning half will be our more traditional meeting with presentations on different

animal health and range management topics (if you have something you want addressed, as always, feel free to let me know!), lunch and then the afternoon will be the mandatory training conducted by Cal Fire. We hope this makes it easier to spend one day instead of two separate days.

## Joint Rangeland Conference

The California Rangeland Conservation Coalition (CRCC) and the Rangeland Management Advisory Committee (RMAC) will be holding a joint conference at the Stockton Cabral Ag Center on February 24, 2023. Registration is open now. RMAC will present *Navigating the Application and Permitting Process for Wildfire Fuels Treatment Using Targeted Grazing* in the morning and there is no cost to attend this workshop. CRCC will hold our annual Rangeland Summit with lunch, fellowship, posters, photo contest, rancher talks and current research projects all focusing on *Graze to Reduce the Blaze* right after the RMAC workshop. We plan to highlight grazing practices that are normally done by many ranchers on a regular basis such as grazing heavier on the perimeter of your ranch, creating fuel breaks, etc. If you have not attended this meeting in the past, I invite you to come join us. This meeting is unique in that we have in attendance many agencies who implement different policies, NGOs, researchers, students, and ranchers from around the state. While most of our message is trying to extend the ranching story to agencies, we have found that just as important as the presentations, the discussions that happen at the tables have been beneficial to not only the agency staffers, but the ranchers have also felt seen, heard, and sometimes understand better where the staffers are coming from. It is important to remember that in general, all the members of the Coalition agree that rangelands need to stay working rangelands to provide the benefits we all enjoy from them. Having the opportunity to chat in this setting helps reinforce that. And you have an opportunity to highlight your ranch in the photo contest. Registration can be found at: <https://ucanr.edu/jointrangeconf> and the full agenda should be up soon on the Coalition's website: <https://carangeland.org>

# International Year of Rangelands and Pastoralists

After many years of advocating the UN to establish an International Year, it has been approved! 2026 will be recognized as the International Year of Rangelands and Pastoralists! IYRP, for short (I don't think that acronym will roll off my tongue like others do!), is three years away, but planning is already underway. Obviously, this will be bigger than just our county and I am sure there will be international rangeland meetings that will highlight the big influence rangelands provide to our world (after all – over half of the terrestrial surface is classified as rangelands!). Our Society for Range Management (SRM) will be planning events nationally, and our

California-Pacific SRM (Cal Pac) will be planning statewide events. I am involved as lead for our Cal Pac section on the national level, and I hope to have events that we plan be practical for the local level. One of my goals will be to get information about the value of working rangelands in our local schools. We already have many Ag in the Classroom events, but a rangeland focus is normally not presented. Every resident of the state benefits from your management of rangelands. We need to spread that message wide and far in 2026. As we get closer, more information will be shared, and especially if you have social media to help spread the IYRP message and be involved in local events!



## California Rangeland Conservation Coalition Summit

February 24, 2023  
Stockton Cabral Ag Center

12:45pm	Welcome, Bre Owens, CRCC Chair and Paul Starrs, moderator
1:00pm	How Labor Issues Impact Small Ruminant Grazing – Including Targeted Grazing, Robert Irwin, Kaos Sheep
1:20pm	Grazing Effects on Fuel Loads and Fire Behavior. Felix Ratcliff, LD Ford Consulting
1:35pm	Maps, Grazing, and Fires – How Using Maps Can be Used as a Management Tool Stephanie Larson and Theresa Becchetti, UCCE
1:50pm	Graze to Reduce the Blaze Panel. Ranchers and agencies share how they use grazing to reduce their fire risks with livestock.
2:40pm	Photo Contest Winners - Point Blue
2:50pm	Munch that Grass: Biomass Reductions Reduce Fire Hazards. Matthew Shapero, UCCE and Roxanne Foss, Vollmar Natural Lands Consulting.
3:05pm	Prescribed Burning Obstacles, Marc Horney, Rangeland Management Advisory Committee
3:10pm	Small table discussion – From What You Heard Today, What Issues should CRCC focus on for 2023?
3:20pm	Wrap Up. Paul Starrs
3:30pm	Adjourn.

Thank you for joining us in Stockton and we hope to see you at another event later this year!