2024 Hay Sampling Project

North Region
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RELEVANCE

In late February 2024, the **Smokehouse Creek Fire** engulfed over **1.3 million acres** of rangeland, structures, livestock, and homes throughout the Northeast Panhandle counties of Potter, Carson, Hutchinson, Gray, Roberts, Hemphill, and Wheeler. The impact of this fire will be felt for decades from a physical, emotional, mental, and financial standpoint. It has been determined that this fire is the **largest and most destructive in Texas history**.

This was the third major wildfire that impacted these counties since 2006 (2006, 2017, 2024). Contributing factors to large wildfires, such as these, include:

- **Dry conditions**
- **Low humidity**
- **Available fuel (grass)**
- **Wind**
- **A source of fire**

Tremendous effort and resources were provided to improve the response to these wildfires. This effort from local, county, regional, and state agencies and partners has exponentially improved how we deal with wildfires since the 2006 fires in this same area. Part of that response is the ability to stand up local resources, such as ***livestock supply points,*** to aid producers in replacing grazing resources lost by the fires. **One of those important resources includes hay that can be fed to livestock and gives ranchers time to make critical decisions regarding their impacted animals, such as feeding or movement.** When a major emergency occurs, a call goes out throughout the country for hay and other resources. Ranchers, individuals, and businesses answered the call and sent these donations to the livestock supply points, which were managed by AgriLife agents, partners, and volunteers. These were positioned at centralized locations where they can easily be accessed by local ranchers that were impacted by the fires.

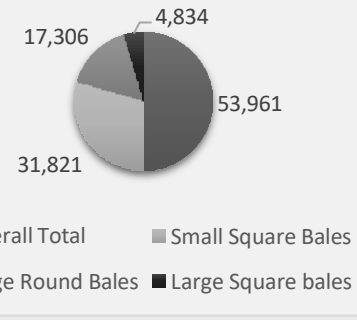
RESPONSE

The objectives of the hay sampling project were as follows:

- **Hay quality** – hay donated to livestock supply points came from various locations and environments. Knowing the nutrient content of these resources allowed livestock producers to feed and supplement hay to meet the nutrient requirements of their animals.
- **Peace of mind** – evaluating prussic acid and nitrate content of sorghum - or johnsongrass - containing hay. Testing ensured that hay was safe to feed and helped to minimize the risk of toxicity issues.
- **Educational opportunity** – the opportunity to test a large amount of hay and the variety and types of hay provided an opportunity to conduct educational programming on sampling procedures, testing methods, supplementation needs, nutrient requirements, and hay safety. These results are being used to train agents and educate producers.
- **Future expectations for resources** – a record of the amount of hay, types of hay, and quality of hay that can be expected in future calls for resources.

"LOADS OF HOPE"

Livestock Supply Points were established in Hemphill, Hutchinson, Gray, and Roberts Counties with satellite locations set up in alternative locations in those and surrounding counties. These supply points were coordinated by local county AgriLife agents and state partners. The donations to these locations include a variety of things including hay, protein supplements, feed, mineral, fencing, wire, medical supplies, etc. The donated Hay was sent from all over the US and from all over the state of Texas. Hay donations logged at these livestock supply



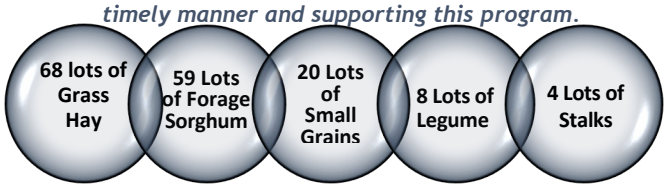
The hay donated included species of all grasses, sorghum forage types, small grains, legumes, and stalks.

Hereford cattle graze on hay as land burned by the Smokehouse Creek Fire surrounds them on Thursday, Feb 29, 2024, in Roberts County, Texas.

RESPONSE

Donated hay samples were collected from lots at **33 ranches and 8 livestock** supply points. Lots included hay from similar loads baled and delivered to the livestock supply points. Cores were pulled from 10 bales or 10% of the lot as recommended by hay sampling techniques and procedures. The hay samples were bagged, labeled, organized, and delivered to **ServiTech Laboratories in Amarillo**. The results were returned to agents and provided to ranchers in those respective counties that they were collected.

Thank you to ServiTech labs for providing results in a timely manner and supporting this program.



158 lots of hay were collected and tested. 106 lots were collected at ranches and 52 were collected at supply points. It is estimated that 20% of the donated hay was collected and tested in this project.

Livestock Supply Point Hutchinson County

RESULTS OF THE PROJECT

Results of the testing are grouped by hay type and can be found in the graph below. Reported values include the average % dry matter, crude protein (CP), and total digestible nutrients (TDN), as well as ranges for CP and TDN, grouped by type of hay. Nitrate and prussic acid results for forage sorghum hay and high-risk grass hay samples are also summarized below. Some samples contained potentially dangerous levels of nitrates. Producers were made aware of this and provided with information to minimize the risk of nitrate toxicity. Prussic acid levels were low and considered safe to feed.

Average analysis results for dry matter (DM), crude protein (CP), and energy (total digestible nutrients; TDN)

Type of hay	DM, % as-fed (avg.)	CP, % of DM (avg.)	CP, % of DM (range)	TDN, % of DM (avg.)	TDN, % of DM (range)
Grass	89.3	8.3	2.7 – 16.7	55.2	42.2 – 66.4
Forage sorghum	89.2	8.2	3.8 – 12.7	58.4	46.4 – 69.0
Small grain	90.2	12.8	9.0 – 19.0	61.2	48.4 – 70.6
Legume	90.6	18.9	12.5 – 22.3	59.1	55.1 – 64.0
Stalks	89.8	4.9	4.1 – 6.6	53.8	44.4 – 59.9

29% of forage sorghum samples contained potentially dangerous levels of nitrates
No Sample contained dangerous levels of prussic acid

Overall summary of results was that donated hay contained more crude protein and energy than was expected, but there was substantial variation within and across hay types. Nitrate toxicity risk was a concern for some forage sorghums, but prussic acid was not. These results demonstrate and reiterate the **importance and value of evaluating hay quality.**

AGRILIFE PERSONNEL INVOLVED

Andy Holloway,
Hannah Sell, Hanna Connor,
Jody Bradford,
Marcus Preuninger,
Megan Eikner, JR Sprague,
Mark Carroll, Danny Nusser,
Kayla Britten,
Dr. Jason Smith.

Thanks for your dedication to your clientele.

Texas A&M AgriLife Extension Service Agent Marcus Preuninger, center, loads a pallet of feed at an animal supply point setup in Pampa, Texas.

HAY TESTING SPONSORSHIP

A Special thanks to the Texas Farm Bureau for their support and donation that allowed this hay to be tested. This information would not have been possible without your support in this project. **Thanks to Dr. Dan Hale and Tracy Tomascik** for all they did to make this happen.

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