

Forage Analysis Report

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SOIL, PLANT & PEST CENTER
UT EXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE

Sample Name: 2nd cutting July
Lab Number: 118134
Type (Identified by Client): Hay
Forage Species (Identified by Client): Mixed Grasses



Payment Information:
Check 2505 - \$47.00

Report Date: 7/14/2026

Near-Infrared Spectroscopy Analysis (NIRS)

Water Content

DM	Dry Matter (Final)	as received	86.70 %
Moisture	Moisture		13.30 %

Protein

CP	Crude Protein	100% DM basis	18.69 %
ADICP	Acid Detergent Insoluble Crude Protein		0.77 %
NDICP	Neutral Detergent Insoluble Crude Protein		2.65 %
InsolCP	Insoluble Crude Protein		9.85 %
Lysine	Lysine		0.65 %

Fiber

ADF	Acid Detergent Fiber	26.18 %
NDF	Neutral Detergent Fiber	50.24 %
Lignin	Lignin	2.70 %

Carbohydrates

ESC	Sugar	9.52 %
Fructan	Fructan	2.55 %
Starch	Starch	1.31 %
WSC	Water-Soluble Carbohydrates	10.98 %
NSC	Non-Structural Carbohydrates	12.29 %
NFC	Non-Fiber Carbohydrates	22.25 %

Digestibility

IVTDMD48h	<i>in-vitro</i> True DM Digestibility at 48h	83.69 %
NDFD48h	Neutral Digestible Fiber Digestibility at 48h	66.03 %

Fat Content

Fat	Fat	3.01 %
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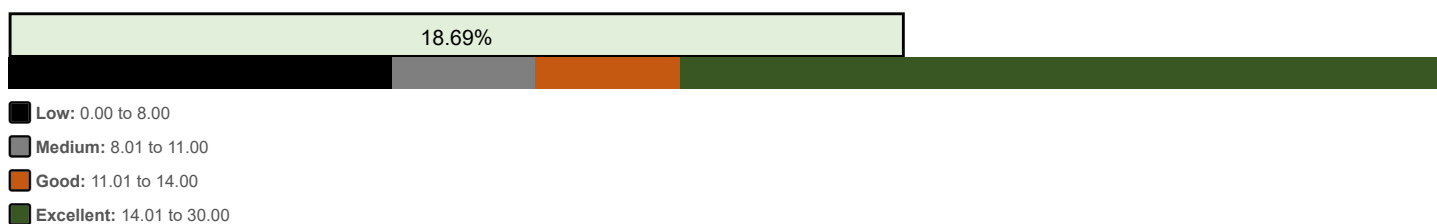
Minerals

Ash	Ash	100% DM basis	5.81 %
P	Phosphorus (Chemistry)		0.35 %
K	Potassium (Chemistry)		2.29 %

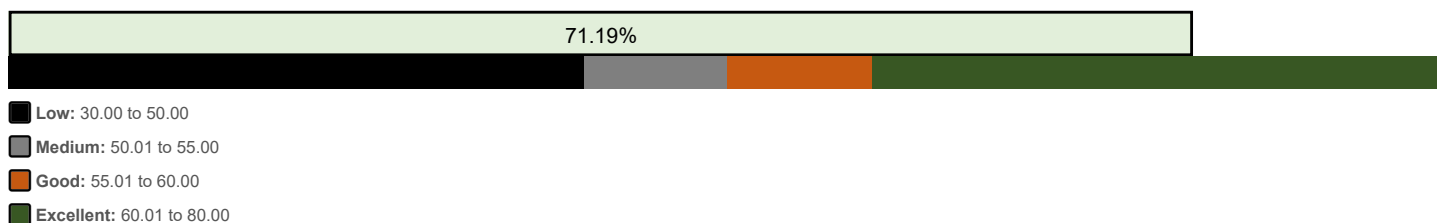
Ca	Calcium (Chemistry)	0.48 %
Mg	Magnesium (Chemistry)	0.24 %
S	Sulfur (Chemistry)	0.18 %
Zn	Zinc (Chemistry)	24 ppm
B	Boron (Chemistry)	4 ppm
Fe	Iron (Chemistry)	118 ppm
Cu	Copper (Chemistry)	5 ppm
Mn	Manganese (Chemistry)	61 ppm
Nitrates		<i>100% DM basis</i>
NO ₃	Nitrates	368 ppm
Energy Calculations		
TDN	Total Digestible Nutrients	71.19 %
DE	Digestible Energy	1.99 MCal/kg
ME	Metabolizable Energy	1.17 MCal/lb
NE _m	Net-Energy for Maintenance	0.76 MCal/lb
NE _g	Net-Energy for Gain	0.48 MCal/lb
NE _l	Net-Energy for Lactation	0.73 MCal/lb
Nutritive Value Parameters		<i>Scale</i>
RFQ	Relative Forage Quality	138

Understanding Forage Quality

Crude Protein (CP)



Total Digestible Nutrients (TDN)



Disclaimer: This benchmark graph is based on forage samples for alfalfa and grass hay/haylage submitted by Tennessee producers and may not represent all hay produced in the state. There is not a benchmark graphical representation available for corn silage. Comparisons are made with similar forage types and are intended for educational purposes only. Results should be used as general benchmarks, not as the sole basis for feeding, marketing, pricing, or management decisions.

[Additional grading information from USDA AMS](#)

- All nutritive analyses at 100% Dry Matter (DM) basis unless otherwise noted.
- Not all constituents are available for each forage type submitted to the Soil, Plant and Pest Center.
- Forage analysis calibrations provided by the NIRS Forage and Feed Consortium. Certification with the National Forage Testing Association.
- For conversions: ppm = mg/kg
- Relative Forage Quality (RFQ) is reported for all grass, mixed, legume hays and haylages.
- Relative Feed Value (RFV) is reported for Alfalfa only.
- No nutritive value parameter scale is available for corn silage.

[Forage Analysis Definitions Publication W1341](#)

For more information about your forage analysis, please visit with your local UT/TSU Extension Agent.

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Sample Name: Aug 1st 2nd cutting
Lab Number: 118309
Type (Identified by Client): Hay
Forage Species (Identified by Client): Mixed Grasses



Payment Information:
Check 2507 - \$47.00

Report Date: 8/13/2026

Near-Infrared Spectroscopy Analysis (NIRS)

Water Content

		<i>as received</i>
DM	Dry Matter (Final)	91.92 %
Moisture	Moisture	8.08 %

Protein

		<i>100% DM basis</i>
CP	Crude Protein	15.01 %
ADICP	Acid Detergent Insoluble Crude Protein	1.16 %
NDICP	Neutral Detergent Insoluble Crude Protein	3.13 %
InsolCP	Insoluble Crude Protein	8.72 %
Lysine	Lysine	0.52 %

Fiber

ADF	Acid Detergent Fiber	33.43 %
NDF	Neutral Detergent Fiber	60.91 %
Lignin	Lignin	5.43 %
aNDFom	amylase-treated NDF corrected for organic matter	58.40 %

Carbohydrates

ESC	Sugar	5.79 %
Fructan	Fructan	2.21 %
Starch	Starch	0.34 %
WSC	Water-Soluble Carbohydrates	7.14 %
NSC	Non-Structural Carbohydrates	7.48 %
NFC	Non-Fiber Carbohydrates	16.25 %

Digestibility

IVTDMD48h	<i>in-vitro</i> True DM Digestibility at 48h	74.22 %
IVTDMD30h	<i>in-vitro</i> True DM Digestibility at 30h	62.94 %
NDFD48h	Neutral Digestible Fiber Digestibility at 48h	54.98 %
dNDF30h	Digestible Neutral Detergent Fiber at 30h	21.74 %
NDFD30h	Neutral Detergent Fiber Digestibility at 30h	35.70 %
dNDF48h	Digestible Neutral Detergent Fiber at 48h	33.49 %
uNDF240h	Undigestible Neutral Detergent Fiber at 240h	16.28 %
uNDF240om	Undigestible Neutral Detergent Fiber at 240om	16.25 %

Fat Content

Fat	Fat	3.22 %
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Minerals

Ash	Ash	4.61 %
P	Phosphorus (Chemistry)	0.32 %
K	Potassium (Chemistry)	1.22 %
Ca	Calcium (Chemistry)	0.54 %
Mg	Magnesium (Chemistry)	0.35 %
S	Sulfur (Chemistry)	0.16 %
Zn	Zinc (Chemistry)	27 ppm
B	Boron (Chemistry)	4 ppm
Fe	Iron (Chemistry)	218 ppm
Cu	Copper (Chemistry)	6 ppm
Mn	Manganese (Chemistry)	143 ppm

Nitrates

NO ₃	Nitrates	412 ppm
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Energy Calculations

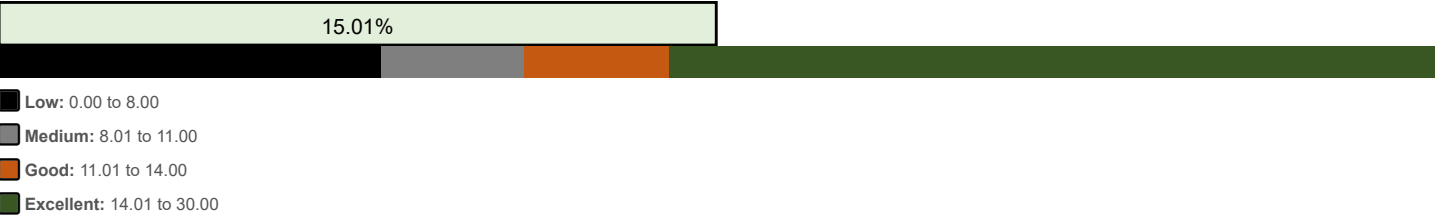
TDN	Total Digestible Nutrients	63.59 %
DE	Digestible Energy	1.81 MCal/kg
ME	Metabolizable Energy	1.04 MCal/lb
NE _m	Net-Energy for Maintenance	0.65 MCal/lb
NE _g	Net-Energy for Gain	0.38 MCal/lb
NE _l	Net-Energy for Lactation	0.65 MCal/lb

Nutritive Value Parameters

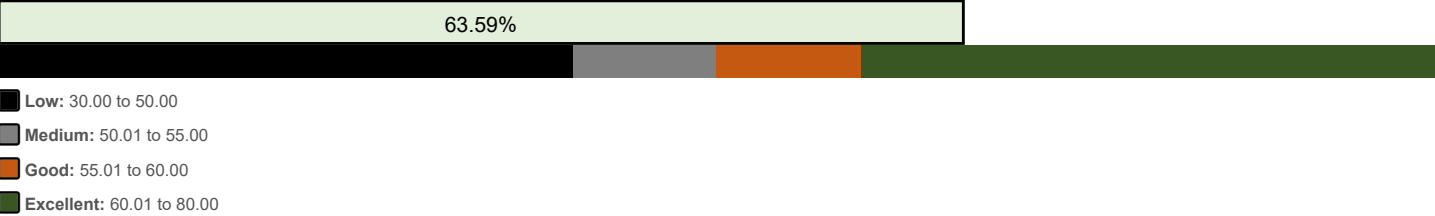
RFQ	Relative Forage Quality	102
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Understanding Forage Quality

Crude Protein (CP)



Total Digestible Nutrients (TDN)



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- Relative Feed Value (RFV) is reported for Alfalfa only.
- No nutritive value parameter scale is available for corn silage.

Forage Analysis Definitions Publication W1341

For more information about your forage analysis, please visit with your local UT/TSU Extension Agent.

Programs in agriculture and natural resources, 4-H youth development, family and consumer sciences, and resource development. University of Tennessee Institute of Agriculture, U.S. Department of Agriculture and county governments cooperating. UT Extension provides equal opportunities in programs and employment.

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Sample Name: Sept 4 2nd cut
Lab Number: 118553
Type (Identified by Client): Hay
Forage Species (Identified by Client): Mixed Grasses



Payment Information:
Check 2513 - \$47.00

Report Date: 9/18/2026

Near-Infrared Spectroscopy Analysis (NIRS)

Water Content

		<i>as received</i>
DM	Dry Matter (Final)	89.65 %
Moisture	Moisture	10.35 %

Protein

		<i>100% DM basis</i>
CP	Crude Protein	17.88 %
ADICP	Acid Detergent Insoluble Crude Protein	1.09 %
NDICP	Neutral Detergent Insoluble Crude Protein	3.38 %
InsolCP	Insoluble Crude Protein	10.51 %
Lysine	Lysine	0.62 %

Fiber

ADF	Acid Detergent Fiber	32.20 %
NDF	Neutral Detergent Fiber	58.95 %
Lignin	Lignin	4.99 %
aNDFom	amylase-treated NDF corrected for organic matter	57.66 %

Carbohydrates

ESC	Sugar	5.68 %
Fructan	Fructan	2.18 %
Starch	Starch	0.60 %
WSC	Water-Soluble Carbohydrates	6.81 %
NSC	Non-Structural Carbohydrates	7.41 %
NFC	Non-Fiber Carbohydrates	14.86 %

Digestibility

IVTDMD48h	<i>in-vitro</i> True DM Digestibility at 48h	76.99 %
IVTDMD30h	<i>in-vitro</i> True DM Digestibility at 30h	64.27 %
NDFD48h	Neutral Digestible Fiber Digestibility at 48h	56.77 %
dNDF30h	Digestible Neutral Detergent Fiber at 30h	22.68 %
NDFD30h	Neutral Detergent Fiber Digestibility at 30h	38.48 %
dNDF48h	Digestible Neutral Detergent Fiber at 48h	33.47 %
uNDF240h	Undigestible Neutral Detergent Fiber at 240h	14.26 %
uNDF240om	Undigestible Neutral Detergent Fiber at 240om	14.77 %

Fat Content

Fat	Fat	2.91 %
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Minerals

Ash	Ash	5.40 %
P	Phosphorus (Chemistry)	0.30 %
K	Potassium (Chemistry)	1.22 %
Ca	Calcium (Chemistry)	0.48 %
Mg	Magnesium (Chemistry)	0.41 %
S	Sulfur (Chemistry)	0.16 %
Zn	Zinc (Chemistry)	23 ppm
B	Boron (Chemistry)	3 ppm
Fe	Iron (Chemistry)	90 ppm
Cu	Copper (Chemistry)	6 ppm
Mn	Manganese (Chemistry)	122 ppm

Nitrates

NO ₃	Nitrates	3334 ppm
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Energy Calculations

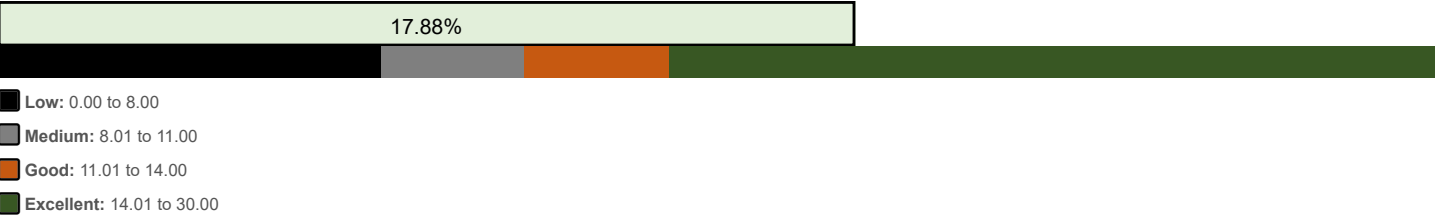
TDN	Total Digestible Nutrients	64.88 %
DE	Digestible Energy	1.86 MCal/kg
ME	Metabolizable Energy	1.07 MCal/lb
NE _m	Net-Energy for Maintenance	0.67 MCal/lb
NE _g	Net-Energy for Gain	0.40 MCal/lb
NE _l	Net-Energy for Lactation	0.66 MCal/lb

Nutritive Value Parameters

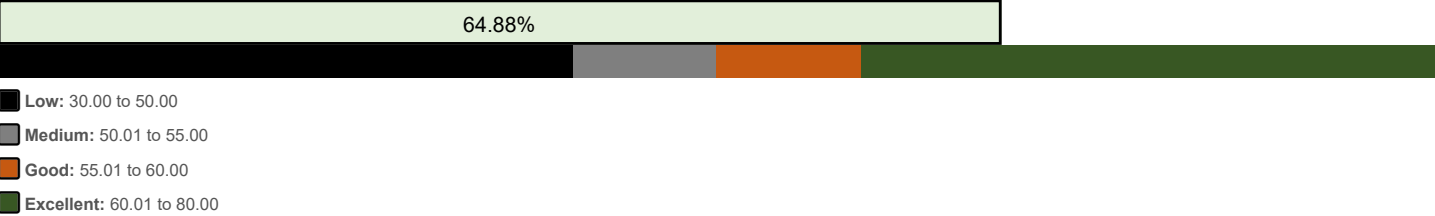
RFQ	Relative Forage Quality	107
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Understanding Forage Quality

Crude Protein (CP)



Total Digestible Nutrients (TDN)



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