

# Soil, Plant & Pest Center

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**U|REXTENSION**  
INSTITUTE OF AGRICULTURE  
THE UNIVERSITY OF TENNESSEE

## Forage Analysis Report

**GREGORY MOCK**  
157 ETT BROWN ROAD  
DEER LODGE, TN 37726

County: Morgan  
Email: GDM1951@GMAIL.COM

Sample ID: Hirs72 OG  
Lab Number: 117117  
Reported: 10/22/2025  
Type: Hay

Forage Species (Identified by Client): Orchardgrass

### Near-Infrared Spectroscopy Analysis (NIRS)<sup>1</sup>

| Water Content                      |                                           |  | as received      |
|------------------------------------|-------------------------------------------|--|------------------|
| DM                                 | Dry Matter                                |  | 89 %             |
| Moisture                           | Moisture                                  |  | 11 %             |
| Protein                            |                                           |  | 100% DM basis    |
| CP                                 | Crude Protein                             |  | 17.96 %          |
| ADICP                              | Acid Detergent Insoluble CP               |  | 1.01 %           |
| NDICP                              | Neutral Detergent Insoluble CP            |  | 3.81 %           |
| InsolCP                            | Insoluble Crude Protein                   |  | 11.74 %          |
| Lysine                             | Lysine                                    |  | 0.63 %           |
| Fiber                              |                                           |  | 100% DM basis    |
| ADF                                | Acid Detergent Fiber                      |  | 31.33 %          |
| NDF                                | Neutral Detergent Fiber                   |  | 56.06 %          |
| Lignin                             | Lignin                                    |  | 4.55 %           |
| Carbohydrates                      |                                           |  | 100% DM basis    |
| ESC                                | Sugar                                     |  | 5.42 %           |
| Fructan                            | Fructan                                   |  | 2.08 %           |
| Starch                             | Starch                                    |  | 0.90 %           |
| WSC                                | Water Soluble Carbohydrates               |  | 8.07 %           |
| NSC                                | Non-Structural Carbohydrates              |  | 8.97 %           |
| NFC                                | Non-Fiber Carbohydrates                   |  | 14.17 %          |
| Digestibility                      |                                           |  | 100% DM basis    |
| IVTDM48h                           | in-vitro True DM Digestibility 48h        |  | 79.78 %          |
| NDFD48h                            | Neutral Detergent Fiber Digestibility 48h |  | 60.00 %          |
| Fat                                |                                           |  | 100% DM basis    |
| Fat                                | Fat                                       |  | 4.01 %           |
| Minerals                           |                                           |  | 100% DM basis    |
| Ash                                | Ash                                       |  | 7.80 %           |
| Ca                                 | Calcium                                   |  | 0.49 %           |
| P                                  | Phosphorus                                |  | 0.35 %           |
| Mg                                 | Magnesium                                 |  | 0.26 %           |
| K                                  | Potassium                                 |  | 3.13 %           |
| Energy Calculations                |                                           |  | 100% DM basis    |
| TDN                                | Total Digestible Nutrients                |  | 65.79 %          |
| DE                                 | Digestible Energy                         |  | 1.88 MCal/kg     |
| NE <sub>m</sub>                    | Net Energy Maintenance                    |  | 0.68 MCal/lb     |
| NE <sub>g</sub>                    | Net Energy Gain                           |  | 0.41 MCal/lb     |
| NE <sub>l</sub>                    | Net Energy Lactation                      |  | 0.67 MCal/lb     |
| Components                         |                                           |  | Wet Chemistry    |
| pH                                 | Ensiled                                   |  | pH               |
| NO <sub>3</sub>                    | Nitrates                                  |  | ppm <sup>2</sup> |
| Calculated Parameters <sup>3</sup> |                                           |  | Scale            |
| RFQ                                | Relative Forage Quality                   |  | 115              |
| RFV                                | Relative Feed Value                       |  | 0                |

<sup>2</sup> ppm = mg/kg

<sup>3</sup> Relative Forage Quality (RFQ) is reported for all grass, mixed, legume hays and hayages; and, Relative Feed Value (RFV) is reported for Alfalfa only. No nutritive value scale is available for corn silage

<sup>1</sup> 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.

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## Understanding Hay Quality

The graphs below are presented to provide a general guide to evaluate the Crude Protein (CP) and Total Digestible Nutrients (TDN) levels of the forage submitted for testing. If you need help understanding the results or information on developing a balanced ration for a specific animal(s), please contact your local UT Extension agent or visit [utbeef.com](http://utbeef.com).

### Crude Protein (CP)



Low = <8% | Medium = 8% to 10.9% | Good = 11% to 13.9% | Excellent = ≥14%

### Total Digestible Nutrients (TDN)



Low = <50% | Medium = 50% to 55% | Good = 55.1% to 59.9% | Excellent = ≥60%

## Wet Chemistry

| Minerals |            |                  | as received |
|----------|------------|------------------|-------------|
| Ca       | Calcium    | %                |             |
| P        | Phosphorus | %                |             |
| Mg       | Magnesium  | %                |             |
| K        | Potassium  | %                |             |
| S        | Sulfur     | %                |             |
| Cu       | Copper     | ppm <sup>1</sup> |             |
| Zn       | Zinc       | ppm              |             |
| Mn       | Manganese  | ppm              |             |
| Fe       | Iron       | ppm              |             |
| B        | Boron      | ppm              |             |

<sup>1</sup> ppm = mg/kg

## Payment Details

Receipt:  
Amount: \$37.00  
Method: 107  
Payment Date: 10/17/2025