



# CUMBERLAND VALLEY ANALYTICAL SERVICES

"Laboratory services for agriculture ... from the field to the feed bunk"

Farm: **APPLE VALLEY**  
Desc: **HAYLAGE BUNK 3**  
Submitter: **WARD, RALPH**  
Account: **CVAS**

Copies to:

Lab ID: **28569 087**  
Sampled: **02/02/2021**  
Arrived: **02/03/2021**  
Completed: **02/03/2021**  
Reported: **02/04/2021**

## SAMPLE INFORMATION

Lab ID: 28569 087      Feed Type: LEGUME FORAGE      Version: 1.0  
Crop Year:      Package: NIR Wet Minerals, Cl, S      Cutting#: 3

## NIR ANALYSIS RESULTS

Moisture **54.5**  
Dry Matter **45.5**

PROTEINS	%SP	% CP	% DM	AVERAGE	90% RANGE
Crude Protein			<b>21.8</b>	21.3	15.9 - 26.8
Adjusted Protein					
Soluble Protein		60.0	<b>13.0</b>	11.9	6.8 - 17.1
Ammonia (CPE)	11.1	6.7	<b>1.45</b>	1.44	0.04 - 2.85
ADF Protein (ADICP)		7.1	<b>1.54</b>	1.50	0.70 - 2.20
NDF Protein (NDICP)		12.3	<b>2.67</b>	2.65	1.15 - 4.14
NDR Protein (NDRCP)					
Rumen Degr. Protein		80.0	<b>17.4</b>	16.6	12.2 - 21.1
Amino Acid Nitrogen, Total		68.1	<b>14.81</b>	14.04	9.45 - 18.63

FIBERS	% NDF	% DM	AVERAGE	90% RANGE
ADF	81.3	<b>28.0</b>	32.1	22.8 - 41.4
ADFom				
aNDF		<b>34.5</b>	38.7	28.3 - 49.2
aNDFom		<b>33.7</b>	37.1	26.9 - 47.3
NDR (NDF w/o sulfite)				
peNDF				
Crude Fiber				
Lignin	18.60	<b>6.42</b>	6.76	4.26 - 9.26

NDF DIGESTIBILITY	%NDFom	NDFom %DM	% NDF	% DM	AVERAGE	90% RANGE (%DM)
NDF Digestibility (12 hr)	<b>37.8</b>	12.7	36.8	<b>13.1</b>		
NDF Digestibility (30 hr)	<b>45.3</b>	15.3	44.5	<b>15.4</b>	17.2	12.6 - 21.9
NDF Digestibility (120 hr)	<b>47.9</b>	16.2	46.8	<b>16.2</b>	19.3	13.5 - 25.0
NDF Digestibility (240 hr)	<b>49.7</b>	16.8	48.8	<b>16.9</b>	20.2	14.2 - 26.2
uNDF (12 hr)	62.2	21.0				
uNDF (30 hr)	54.8	18.5	55.5	<b>19.2</b>	21.4	12.7 - 30.0
uNDF (120 hr)	52.1	17.6	53.2	<b>18.3</b>	19.3	11.4 - 27.3
uNDF (240 hr)	50.3	17.0	51.2	<b>17.7</b>	18.4	10.6 - 26.2

CARBOHYDRATES	% Starch	% DM	AVERAGE	90% RANGE
Silage Acids		<b>7.4</b>	6.1	0.8 - 11.3
Ethanol Soluble CHO (Sugar)		<b>3.8</b>	4.2	0.0 - 8.6
Water Soluble CHO (Sugar)		<b>6.4</b>	6.5	1.5 - 11.5
Starch		<b>1.8</b>	1.3	0.0 - 3.0
Soluble Starch				
Soluble Fiber		<b>18.8</b>	17.51	13.19 - 21.83
Starch Digestibility (7 hr, 4 mm)				
Crude Fat		<b>3.30</b>	3.10	2.10 - 4.00
Fatty Acids, Total		<b>2.02</b>	2.23	0.87 - 3.59
C16:0		<b>0.42</b>	0.40	0.31 - 0.49
C18:0		<b>0.07</b>	0.06	0.05 - 0.08
C18:1		<b>0.05</b>	0.05	0.02 - 0.08
C18:2		<b>0.41</b>	0.35	0.24 - 0.46
C18:3		<b>0.99</b>	0.72	0.37 - 1.07
Unsaturated Fatty Acids (RUFAL)		<b>1.45</b>	1.12	0.67 - 1.58
Fatty Acids (%Fat)		<b>61.2</b>	73.2	35.4 - 100.0



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MINERALS		AVERAGE	90% RANGE
Ash (%DM)	<b>10.33</b>	11.55	7.46 - 15.64
<b>Calcium (%DM)</b>	<b>1.60</b>	<b>1.53</b>	1.05 - 2.01
<b>Phosphorus (%DM)</b>	<b>0.35</b>	<b>0.33</b>	0.24 - 0.43
<b>Magnesium (%DM)</b>	<b>0.26</b>	<b>0.32</b>	0.20 - 0.44
<b>Potassium (%DM)</b>	<b>2.82</b>	<b>2.91</b>	1.67 - 4.14
<b>Sulfur (%DM)</b>	<b>0.21</b>	<b>0.29</b>	0.42 - 0.17
<b>Sodium (%DM)</b>	<b>0.03</b>	<b>0.08</b>	0.00 - 0.29
<b>Chloride (%DM)</b>	<b>0.76</b>	<b>0.63</b>	0.00 - 1.29
<b>Iron (ppm)</b>	<b>144</b>	<b>644</b>	0 - 1805
<b>Manganese (ppm)</b>	<b>24</b>	<b>56</b>	0 - 117
<b>Zinc (ppm)</b>	<b>23</b>	<b>28</b>	15 - 41
<b>Copper (ppm)</b>	<b>14</b>	<b>11</b>	20 - 2
Molybdenum (ppm)			

QUALITATIVE		AVERAGE	90% RANGE
pH	<b>4.69</b>	5.06	4.08 - 6.04
Total VFA (%DM)	<b>7.38</b>	5.90	0.61 - 11.20
Lactic Acid (%DM)	<b>5.16</b>	3.97	0.05 - 7.88
Lactic as % of Total VFA	<b>70</b>	66	35 - 98
Acetic Acid (%DM)	<b>1.87</b>	1.87	0.00 - 3.87
Butyric Acid (%DM)	<b>0.35</b>	0.68	0.00 - 1.44
1, 2 Propanediol (%DM)			
Nitrate Ion (%DM)			
Nitrate-Nitrogen, ppm			
Soil Contamination Probability			Probable low to none
Nitrate Probability			Probable low nitrate level
NIR Statistical Confidence			Excellent prediction potential

INDEX CALCULATIONS		AVERAGE	90% RANGE
NDF Dig. Rate (Kd, %HR, Van Amburgh, Lignin*2.4)	<b>4.89</b>	4.61	2.84 - 6.38
Starch Dig. Rate (Kd, %HR, Mertens)			
Relative Feed Value (RFV)	<b>181</b>	158	93 - 222
Relative Forage Quality (RFQ)	<b>182</b>	164	94 - 235
Dig. Organic Matter Index (lbs/ton)	<b>647</b>	580	307 - 853
Non Fiber Carbohydrates (%DM)	<b>32.8</b>	28.1	19.8 - 36.4
Non Structural Carbohydrates (%DM)	<b>5.6</b>	5.3	0.4 - 10.2
DCAD (meq/100gdm)	<b>38.7</b>	46.3	15.4 - 77.2
Summative Index % (Mass Balance)	<b>99.7</b>	99.7	90.4 - 109.0

ENERGY CALCULATIONS		DAIRY 2001	PSU-ADF	EQUINE
TDN (%DM)		<b>62.8</b>	68.65	
Net Energy Lactation (Mcal/lb)		<b>0.64</b>	0.71	
Net Energy Maintenance (Mcal/lb)		<b>0.67</b>	0.72	
Net Energy Gain (Mcal/lb)		<b>0.40</b>	0.45	
Metabolizable Energy (Mcal/lb)		<b>1.06</b>	1.13	

Nutrients names in bold were analyzed by wet chemistry methods.

Definitions and explanation of report terms



Additional sample information, submitted documents and lab pictures linked to QR code.



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