Introduction
Quality forage crops have high palatability, digestibility, and, of most importance, availability of essential nutrients. For successful livestock production, producers must have good knowledge of animal nutritional needs and characteristics of the forage crop they grow.

Fenugreek, a leguminous crop, is rich in nutrients. A Kansas State University study (Obour et al., 2015) reported that the nutritive value of fenugreek is comparable or even greater than alfalfa. Research conducted in Canada also supported the results in Kansas (Acharya et al., 2008). Fenugreek also has similar dry matter intake as alfalfa.

The quality of a forage crop also depends on species or cultivars, maturity stage, storage methods, and management practices. Though there is potential to grow fenugreek as a forage crop in Wyoming, little information is available on its nutritive value under our state’s growing conditions along with management practices.

Objectives
The objective of this study was to determine the nutritive value of different fenugreek entries.

Materials and Methods
The study was carried out at the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC) during the 2015 and 2016 growing seasons. The experiment was laid out in a strip-split randomized complete block design with three replicates. Four fenugreek entries that are still being studied for possible release (F96, LRC3708, LRC3375, and F75) as well as one previously released cultivar (‘Tristar’) were planted under irrigated conditions.

Fenugreek was planted in May and June both years. Harvesting took place on August 21, 2015, and August 31, 2016. Forage nutritive values (crude protein, CP; neutral detergent fiber, NDF; acid detergent fiber, ADP; in-vitro dry matter digestibility, IVDMD; total digestible nutrients, TDN; and relative feed value, RFV) were determined using near infrared reflectance spectroscopy (NIRS) after grinding the samples in a Thomas® Wiley Mill. Data were analyzed using SAS 9.4.

Results and Discussion
Taking all of the measured forage quality parameters into consideration, fenugreek entry “LRC3375” had the highest forage quality both years. Across two years for the five entries, average CP (22.5%), NDF (36%), ADF (24.5%), IVDMD (77.5%), TDN (75.5%), and RFV (181.5) are fairly consistent for both growing seasons. The normal ranges for nutrients in quality alfalfa are: 18–24% CP, 33–44% NDF, 26–34% ADF, 70–80% IVDMD, 57–63% TDN, and 120–190 RFV. Initial results from our study indicate that the forage quality of fenugreek under growing conditions similar to those at SAREC is comparable to the forage quality of alfalfa. This particular study is complete, but other research is focused on identifying best management practices to enhance the yield and quality of fenugreek.

Acknowledgments
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Contact Information
Saugat Baskota at sbaskota@uwyo.edu, or Anowar Islam at mislam@uwyo.edu or 307-766-4151.

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PARP: I:1,2,12, II:2, VI:1

Literature Cited

Obour A. K., Obeng, E., and Holman, J., 2015, Influence of different seeding dates on fenugreek (Trigonella foenum-graecum L.) forage yield and nutritive value: Manhattan, Kansas, Kansas Agricultural Experiment Station Research Reports, v. 1, issue 2, article 12, 5 p.

Table 1. Forage nutritive values of different fenugreek entries at SAREC in 2015 and 2016.

<table>
<thead>
<tr>
<th>Entries</th>
<th>CP (%)</th>
<th>NDF (%)</th>
<th>ADF (%)</th>
<th>IVDMD (%)</th>
<th>TDN (%)</th>
<th>RFV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tristar</td>
<td>21 b</td>
<td>22 a</td>
<td>36 a</td>
<td>37 ab</td>
<td>25 a</td>
<td>25 a</td>
</tr>
<tr>
<td>F96</td>
<td>24 a</td>
<td>23 a</td>
<td>36 a</td>
<td>36 b</td>
<td>23 b</td>
<td>24 a</td>
</tr>
<tr>
<td>LRC3375</td>
<td>23 a</td>
<td>23 a</td>
<td>35 a</td>
<td>35 b</td>
<td>24 b</td>
<td>24 a</td>
</tr>
<tr>
<td>LRC3708</td>
<td>24 a</td>
<td>22 a</td>
<td>36 a</td>
<td>36 ab</td>
<td>23 b</td>
<td>25 a</td>
</tr>
<tr>
<td>F75</td>
<td>24 a</td>
<td>22 a</td>
<td>35 a</td>
<td>38 a</td>
<td>23 b</td>
<td>25 a</td>
</tr>
<tr>
<td>Average</td>
<td>23</td>
<td>22</td>
<td>36</td>
<td>36</td>
<td>24</td>
<td>25</td>
</tr>
</tbody>
</table>

CP=crude protein, NDF=neutral detergent fiber, ADF=acid detergent fiber, IVDMD=in-vitro dry matter digestibility, TDN=total digestible nutrients, RFV=relative feed value.

Values with same letters within a column do not differ at p>0.05.

1Department of Plant Sciences.