Table S1. Mean values for dry matter (DM) barley yield, crude protein (CP), soluble protein (SP), acid detergent fiber (ADF), neutral detergent fiber (NDF), total digestible nutrients (TDN), relative feed value (RFV), net energy for maintenance (NEm), and net energy for gain (NEg) for the 14 treatments after five (2002) applications of amendments and treatments

<table>
<thead>
<tr>
<th>Treatment†</th>
<th>DM Yield</th>
<th>CP</th>
<th>SP</th>
<th>ADF</th>
<th>NDF</th>
<th>TDN</th>
<th>RFV</th>
<th>NEm</th>
<th>NEg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON</td>
<td>NA‡</td>
<td>112±9.6§</td>
<td>34.9±2.7</td>
<td>332±3.7</td>
<td>554±13.8</td>
<td>654±4.3</td>
<td>106±3.4</td>
<td>0.67±0.01</td>
<td>0.41±0.01</td>
</tr>
<tr>
<td>IN</td>
<td>NA</td>
<td>137±0.9</td>
<td>44.2±2.1</td>
<td>321±8.2</td>
<td>541±7.8</td>
<td>666±9.1</td>
<td>110±2.6</td>
<td>0.69±0.01</td>
<td>0.42±0.01</td>
</tr>
<tr>
<td>SM-ST-13</td>
<td>NA</td>
<td>116±8.2</td>
<td>36.0±2.3</td>
<td>339±9.8</td>
<td>553±17.2</td>
<td>646±10.8</td>
<td>106±4.5</td>
<td>0.66±0.01</td>
<td>0.40±0.01</td>
</tr>
<tr>
<td>SM-ST-39</td>
<td>NA</td>
<td>134±1.7</td>
<td>44.5±1.8</td>
<td>326±4.2</td>
<td>529±13.0</td>
<td>660±4.6</td>
<td>112±3.1</td>
<td>0.68±0.01</td>
<td>0.42±0.01</td>
</tr>
<tr>
<td>SM-ST-77</td>
<td>NA</td>
<td>133±1.8</td>
<td>45.6±1.8</td>
<td>345±4.6</td>
<td>569±5.4</td>
<td>640±5.3</td>
<td>102±1.4</td>
<td>0.65±0.01</td>
<td>0.39±0.01</td>
</tr>
<tr>
<td>CM-ST-13</td>
<td>NA</td>
<td>118±2.8</td>
<td>38.9±1.4</td>
<td>335±8.3</td>
<td>543±12.2</td>
<td>651±9.2</td>
<td>108±3.6</td>
<td>0.67±0.01</td>
<td>0.40±0.01</td>
</tr>
<tr>
<td>CM-ST-39</td>
<td>NA</td>
<td>131±3.4</td>
<td>42.6±2.5</td>
<td>314±19.6</td>
<td>515±23.9</td>
<td>674±21.7</td>
<td>118±7.9</td>
<td>0.70±0.03</td>
<td>0.43±0.03</td>
</tr>
<tr>
<td>CM-ST-77</td>
<td>NA</td>
<td>133±3.2</td>
<td>44.4±2.5</td>
<td>339±5.1</td>
<td>555±7.1</td>
<td>646±5.5</td>
<td>105±1.8</td>
<td>0.66±0.01</td>
<td>0.40±0.01</td>
</tr>
<tr>
<td>SM-WD-13</td>
<td>NA</td>
<td>114±5.1</td>
<td>36.1±1.8</td>
<td>342±10.4</td>
<td>568±18.9</td>
<td>643±11.4</td>
<td>103±4.8</td>
<td>0.66±0.02</td>
<td>0.39±0.01</td>
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<tr>
<td>SM-WD-39</td>
<td>NA</td>
<td>136±3.5</td>
<td>43.8±2.9</td>
<td>333±8.8</td>
<td>544±14.7</td>
<td>653±9.9</td>
<td>108±3.7</td>
<td>0.67±0.01</td>
<td>0.40±0.01</td>
</tr>
<tr>
<td>SM-WD-77</td>
<td>NA</td>
<td>134±3.3</td>
<td>44.4±1.9</td>
<td>328±7.8</td>
<td>548±13.0</td>
<td>658±8.7</td>
<td>108±3.5</td>
<td>0.68±0.01</td>
<td>0.41±0.01</td>
</tr>
<tr>
<td>CM-WD-13</td>
<td>NA</td>
<td>113±3.4</td>
<td>36.3±2.6</td>
<td>329±7.9</td>
<td>546±10.1</td>
<td>656±8.8</td>
<td>108±3.0</td>
<td>0.68±0.01</td>
<td>0.41±0.01</td>
</tr>
<tr>
<td>CM-WD-39</td>
<td>NA</td>
<td>124±3.8</td>
<td>37.9±3.1</td>
<td>327±2.6</td>
<td>547±17.1</td>
<td>659±3.0</td>
<td>108±3.5</td>
<td>0.68±0.01</td>
<td>0.41±0.01</td>
</tr>
<tr>
<td>CM-WD-77</td>
<td>NA</td>
<td>123±3.9</td>
<td>38.6±2.1</td>
<td>331±2.1</td>
<td>551±7.5</td>
<td>655±2.1</td>
<td>107±1.8</td>
<td>0.68±0.01</td>
<td>0.41±0.01</td>
</tr>
</tbody>
</table>

†Treatments: CON, control, SM, stockpiled beef manure; CM, composted beef manure; IN, inorganic fertilizer
‡ NA, not available due to hail damage to crop
§Mean±standard error
Table S2. Mean values for dry matter (DM) barley yield, crude protein (CP), soluble protein (SP), acid detergent fiber (ADF), neutral detergent fiber (NDF), total digestible nutrients (TDN), relative feed value (RFV), net energy for maintenance (NEm), and net energy for gain (NEg) for the 14 treatments after eight (2005) applications of amendments and treatments

<table>
<thead>
<tr>
<th>Treatment†</th>
<th>DM Yield</th>
<th>CP</th>
<th>SP</th>
<th>ADF</th>
<th>NDF</th>
<th>TDN</th>
<th>RFV</th>
<th>NEm</th>
<th>NEg</th>
</tr>
</thead>
<tbody>
<tr>
<td>CON</td>
<td>6.9±0.5‡</td>
<td>106±2.9</td>
<td>30.1±1.6</td>
<td>208±4.9</td>
<td>369±5.5</td>
<td>792±5.4</td>
<td>184±3.1</td>
<td>0.87±0.01</td>
<td>0.58±0.01</td>
</tr>
<tr>
<td>IN</td>
<td>8.4±0.5</td>
<td>123±1.5</td>
<td>42.3±1.3</td>
<td>190±22.5</td>
<td>358±30.8</td>
<td>813±24.9</td>
<td>198±22.8</td>
<td>0.90±0.03</td>
<td>0.60±0.03</td>
</tr>
<tr>
<td>SM-ST-13</td>
<td>9.1±0.6</td>
<td>115±4.0</td>
<td>37.3±2.6</td>
<td>205±22.7</td>
<td>364±31.9</td>
<td>795±25.3</td>
<td>193±21.7</td>
<td>0.87±0.03</td>
<td>0.58±0.03</td>
</tr>
<tr>
<td>SM-ST-39</td>
<td>8.8±0.4</td>
<td>121±4.9</td>
<td>39.9±3.5</td>
<td>226±7.7</td>
<td>387±11.8</td>
<td>773±8.8</td>
<td>172±6.4</td>
<td>0.84±0.01</td>
<td>0.55±0.01</td>
</tr>
<tr>
<td>SM-ST-77</td>
<td>9.5±0.2</td>
<td>113±4.6</td>
<td>33.3±2.6</td>
<td>204±8.5</td>
<td>363±11.3</td>
<td>796±9.5</td>
<td>188±7.6</td>
<td>0.88±0.01</td>
<td>0.59±0.01</td>
</tr>
<tr>
<td>CM-ST-13</td>
<td>9.1±0.5</td>
<td>112±3.5</td>
<td>37.0±2.4</td>
<td>203±10.4</td>
<td>357±20.1</td>
<td>797±11.5</td>
<td>193±13.4</td>
<td>0.88±0.02</td>
<td>0.58±0.01</td>
</tr>
<tr>
<td>CM-ST-39</td>
<td>9.8±0.3</td>
<td>111±2.3</td>
<td>30.8±2.6</td>
<td>203±11.7</td>
<td>362±19.5</td>
<td>797±13.2</td>
<td>190±12.5</td>
<td>0.88±0.02</td>
<td>0.58±0.02</td>
</tr>
<tr>
<td>CM-ST-77</td>
<td>9.4±0.4</td>
<td>120±4.8</td>
<td>39.7±2.5</td>
<td>211±13.4</td>
<td>369±14.1</td>
<td>788±15.0</td>
<td>184±9.7</td>
<td>0.87±0.02</td>
<td>0.57±0.02</td>
</tr>
<tr>
<td>SM-WD-13</td>
<td>8.0±0.4</td>
<td>116±3.0</td>
<td>33.1±3.4</td>
<td>214±7.5</td>
<td>373±9.7</td>
<td>785±8.1</td>
<td>181±5.9</td>
<td>0.86±0.01</td>
<td>0.57±0.01</td>
</tr>
<tr>
<td>SM-WD-39</td>
<td>8.5±0.3</td>
<td>119±1.3</td>
<td>36.4±3.2</td>
<td>203±8.2</td>
<td>368±14.5</td>
<td>797±9.2</td>
<td>186±9.0</td>
<td>0.88±0.01</td>
<td>0.58±0.01</td>
</tr>
<tr>
<td>SM-WD-77</td>
<td>8.9±0.1</td>
<td>119±1.7</td>
<td>38.0±0.7</td>
<td>200±17.6</td>
<td>362±32.3</td>
<td>802±19.6</td>
<td>195±23.6</td>
<td>0.88±0.03</td>
<td>0.59±0.02</td>
</tr>
<tr>
<td>CM-WD-13</td>
<td>8.7±0.5</td>
<td>112±5.0</td>
<td>31.8±4.3</td>
<td>186±8.5</td>
<td>340±13.8</td>
<td>817±9.6</td>
<td>205±10.6</td>
<td>0.90±0.01</td>
<td>0.61±0.01</td>
</tr>
<tr>
<td>CM-WD-39</td>
<td>8.9±0.5</td>
<td>122±6.5</td>
<td>37.2±3.5</td>
<td>210±15.1</td>
<td>368±19.0</td>
<td>790±16.8</td>
<td>186±13.7</td>
<td>0.87±0.02</td>
<td>0.58±0.02</td>
</tr>
<tr>
<td>CM-WD-77</td>
<td>9.3±0.4</td>
<td>116±2.0</td>
<td>35.5±3.6</td>
<td>205±19.8</td>
<td>358±33.4</td>
<td>796±21.9</td>
<td>196±22.9</td>
<td>0.88±0.03</td>
<td>0.58±0.03</td>
</tr>
</tbody>
</table>

†Treatments: CON, control; SM, stockpiled beef manure; CM, composted beef manure; IN, inorganic fertilizer
‡Mean±standard error
Table S3. Mean values for dry matter (DM) barley yield, crude protein (CP), soluble protein (SP), acid detergent fiber (ADF), neutral detergent fiber (NDF), total digestible nutrients (TDN), relative feed value (RFV), net energy for maintenance (NEm), and net energy for gain (NEg) for the 14 treatments after 12 (2009) applications of amendments and treatments.

<table>
<thead>
<tr>
<th>Treatment†</th>
<th>DM Yield</th>
<th>CP</th>
<th>SP</th>
<th>ADF</th>
<th>NDF</th>
<th>TDN</th>
<th>RFV</th>
<th>NEm</th>
<th>NEg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mg ha⁻¹</td>
<td>g kg⁻¹</td>
<td>g kg⁻¹</td>
<td>g kg⁻¹</td>
<td>g kg⁻¹</td>
<td>Mcal kg⁻¹</td>
<td>Mcal kg⁻¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CON</td>
<td>5.7±0.5‡</td>
<td>69.0±2.0</td>
<td>15.6±1.4</td>
<td>205±27.3</td>
<td>378±38.7</td>
<td>795±30.2</td>
<td>187±23.4</td>
<td>0.87±0.04</td>
<td>0.58±0.04</td>
</tr>
<tr>
<td>IN</td>
<td>10.6±0.4</td>
<td>98.3±4.7</td>
<td>23.7±1.6</td>
<td>213±10.7</td>
<td>387±12.3</td>
<td>787±12.2</td>
<td>174±7.2</td>
<td>0.86±0.02</td>
<td>0.57±0.01</td>
</tr>
<tr>
<td>SM-ST-13</td>
<td>10.4±0.6</td>
<td>87.8±4.6</td>
<td>20.5±1.0</td>
<td>204±8.4</td>
<td>382±12.0</td>
<td>797±9.5</td>
<td>179±6.1</td>
<td>0.88±0.01</td>
<td>0.58±0.01</td>
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<tr>
<td>SM-ST-39</td>
<td>10.5±0.1</td>
<td>112±3.5</td>
<td>31.3±2.0</td>
<td>210±12.1</td>
<td>385±15.2</td>
<td>790±13.5</td>
<td>177±10.1</td>
<td>0.87±0.02</td>
<td>0.58±0.02</td>
</tr>
<tr>
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<td>39.3±4.0</td>
<td>220±10.8</td>
<td>414±20.7</td>
<td>778±11.9</td>
<td>163±9.3</td>
<td>0.85±0.02</td>
<td>0.56±0.02</td>
</tr>
<tr>
<td>CM-ST-13</td>
<td>11.6±0.3</td>
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<td>202±13.1</td>
<td>389±15.6</td>
<td>799±14.6</td>
<td>177±9.9</td>
<td>0.88±0.02</td>
<td>0.59±0.02</td>
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<tr>
<td>CM-ST-39</td>
<td>10.8±0.4</td>
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<td>228±14.5</td>
<td>401±23.5</td>
<td>770±16.0</td>
<td>168±13.5</td>
<td>0.84±0.02</td>
<td>0.55±0.02</td>
</tr>
<tr>
<td>CM-ST-77</td>
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<td>117±4.1</td>
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<td>413±15.1</td>
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<td>158±7.4</td>
<td>0.81±0.02</td>
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<tr>
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<td>188±9.4</td>
<td>0.89±0.02</td>
<td>0.59±0.01</td>
</tr>
<tr>
<td>SM-WD-39</td>
<td>11.2±0.4</td>
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<td>0.54±0.02</td>
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<td>90.0±6.7</td>
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<td>230±16.9</td>
<td>393±19.9</td>
<td>768±18.9</td>
<td>170±11.6</td>
<td>0.84±0.03</td>
<td>0.55±0.02</td>
</tr>
<tr>
<td>CM-WD-13</td>
<td>8.7±1.1</td>
<td>75.0±4.9</td>
<td>17.7±1.5</td>
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<td>403±9.2</td>
<td>774±9.3</td>
<td>165±5.5</td>
<td>0.85±0.01</td>
<td>0.56±0.01</td>
</tr>
<tr>
<td>CM-WD-39</td>
<td>9.2±0.7</td>
<td>81.8±4.1</td>
<td>18.9±1.8</td>
<td>207±4.5</td>
<td>387±4.0</td>
<td>793±5.1</td>
<td>175±1.6</td>
<td>0.87±0.01</td>
<td>0.58±0.01</td>
</tr>
<tr>
<td>CM-WD-77</td>
<td>11.3±0.8</td>
<td>84.0±6.2</td>
<td>18.9±2.5</td>
<td>196±10.2</td>
<td>357±13.1</td>
<td>805±11.2</td>
<td>193±8.6</td>
<td>0.89±0.02</td>
<td>0.59±0.01</td>
</tr>
</tbody>
</table>

†Treatments: CON, control; SM, stockpiled beef manure; CM, composted beef manure; IN, inorganic fertilizer
‡Mean±standard error