Energy Values available through Dairyland Laboratories Inc.

ADF Energy Calculations

These calculations rely on a direct calculation from the ADF content of the feedstuff to the energy values.

OARDC & NRC2001Energy Calculations

The OARDC energy calculations are similar to those developed by the NRC (2001). Both calculations use a summative approach by assigning digestibility and energy values to CP, NDF, Fat, and Ash. Both the OARDC and NRC (2001) utilize the relationship between lignin and NDF to determine NDF digestibility.

MILK2006 and MILK2013

The MILK2006 and MILK2013 equations were developed by the University of Wisconsin for corn silage and alfalfa/grass, respectively. These use a summative approach similar to OARDC and NRC (2001) to calculate energy. In vitro NDFD is used in these calculations instead of lignin to estimate NDF digestion. Additionally, MILK2006 takes processing and moisture content into consideration for predicting starch digestibility in corn silage.

Table 1. Description of energy calculations

<table>
<tr><th>Nutrient</th><th colspan="4">Lab Measurements Utilized</th></tr>
<tr><th></th><th>ADF</th><th>OARDC/NRC01</th><th>Milk2013</th><th colspan="2">Milk2006</th></tr>
<tr><td>CP</td><td rowspan="6">ADF</td><td>CP, AD-ICP</td><td>CP, AD-ICP</td><td colspan="2">CP, AD-ICP</td></tr>
<tr><td>NDF</td><td>NDF, Lignin</td><td>NDF, NDFD</td><td colspan="2">NDF, NDFD</td></tr>
<tr><td>TFA</td><td>TFA</td><td>TFA</td><td colspan="2">TFA</td></tr>
<tr><td>Ash</td><td>Ash</td><td>Ash</td><td colspan="2">Ash</td></tr>
<tr><td rowspan="2">NFC</td><td rowspan="2">CP, NDF, ND-ICP, TFA, Ash</td><td rowspan="2">CP, NDF, ND-ICP, TFA, Ash</td><td>Non-starch NFC</td><td>CP, NDF, ND-ICP, TFA, Ash</td></tr>
<tr><td>Starch</td><td>Starch, Moisture, Processing</td></tr>
</table>