NE\_TEMP1941 – Response to Peer Reviewers

February 22, 2019

The following language has been added to Sub-Objective 3:

**Sub-Objective 3)** Explore alternative uses of horse manure such as for energy use.  Task 1: Analyze energy content from farm collected samples for energy content.  A previous project (Westendorf and Helsel, 2015; [*https://articles.extension.org/pages/72862/validation-of-near-infrared-reflectance-spectral-data-for-analyzing-horse-manure*](https://urldefense.proofpoint.com/v2/url?u=https-3A__articles.extension.org_pages_72862_validation-2Dof-2Dnear-2Dinfrared-2Dreflectance-2Dspectral-2Ddata-2Dfor-2Danalyzing-2Dhorse-2Dmanure&d=DwMF-g&c=dWz0sRZOjEnYSN4E4J0dug&r=VOSuBTJuF7wuccuiF3eZWhbIqSR0rO1ZorsI1pYTnO8&m=dOma2u6WpMSeTV1KwLhvtwZUeNP2LTEw56PjNLB4uEw&s=baIaw-6c3jEvugou1QGUllTmGglfvYETm884wKrF-ew&e=)) described a method for determining energy content (also N, P) of horse manure using Near Infrared Reflectance Spectroscopy (NIRS).  Equations were developed using dry, ground samples of horse manure.  Gross energy (GE) was predicted after NIRS analysis with a R-Squared value of 0.89.  Ash content was also analyzed and is an excellent predictor of GE content, R-Squared value of 0.96.   Our first sub-task is to analyze horse manure (including bedding) on New Jersey (NJ)  farms for gross energy by NIRS and Ash determination.  This survey will help yield a profile of manure energy values on NJ horse farms.  The second sub-task is to consider further processing of horse manure, such as pelleting, to determine other disposal methods.