

Predicting the Nutritional Quality of Corn Silage by Near Infrared Reflectance Spectrophotometry Equations



INVENTORS • James Coors, Joseph Lauer, Patrick Flannery

WARF: P01304US

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing software that rapidly estimates the nutritive value of corn silage using near infrared scanning.

OVERVIEW

Corn silage, the moist fermented fodder that employs the whole plant, has many uses in agriculture including feed for cud-chewing ruminants like cattle and sheep. Assessing silage's nourishing content, including crude protein and fiber, is critical to the development of new corn varieties by seed companies.

The process, however, is expensive and time-consuming when conducted by traditional wet lab analysis. A new method that does not require laborious sample preparation and that provides immediate evaluation is essential.

THE INVENTION

UW-Madison researchers have developed prediction equations that can estimate corn silage nutrition based on the unique light patterns of different chemical components using near-infrared reflectance spectrophotometry (NIRS).

The NIRS equations are calibrated on data obtained by traditional wet lab analyses of silage from the northern Corn Belt. Values of acid detergent fiber (ADF), neutral detergent fiber (NDF), *in vitro* true digestibility (IVTD) and crude protein serve as base parameters to assess all subsequent NIRS scans of dried ground samples.

APPLICATIONS

- Corn variety trials conducted by hybrid seed companies
- Preliminary evaluations of new corn inbreds and hybrids
- Use by commercial laboratories not currently incorporating NIRS equations

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.



KEY BENEFITS

- Quick, reliable estimations
- No expensive or time-consuming analysis

ADDITIONAL INFORMATION

Tech Fields

Agriculture - Mechanization

CONTACT INFORMATION

For current licensing status, please contact Emily Bauer at emily@warf.org or 608-960-9842.

