



Measuring Lignin in Corn Stalks

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing software to select low-lignin corn varieties for silage and biofuel feedstock.

Overview

The lignin in corn stalks makes it difficult to process for biomass and harder for animals to digest. Levels are especially high in the tough outer 'rind' and vascular bundles of the stem.

For this reason growers are looking to develop new corn varieties low in lignin. Field testing modified crops is very costly and time consuming, so it would be beneficial to gather phenotypic data early in the growth process to improve the odds of success.

The Invention

UW–Madison researchers have developed an automated method to scan and analyze corn stalks. The algorithm extracts information about rind thickness, vascular bundles, density and size. The new method uses a flatbed scanner to image samples. The images are acquired as RGB color at a resolution of 800 dpi. Thresholding techniques are used to assess the outer ring boundaries and vasculature.

Applications

- Phenotype monitoring
- Selecting low-lignin corn varieties ideal for biomass processing and animal silage

Key Benefits

- First tool of its kind
- High throughput
- Cuts the costs and risks associated with field trials

Stage of Development

A campus lab is using the system to analyze new corn varieties.

Additional Information

For More Information About the Inventors

- [Edgar Spalding](#)

Tech Fields

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