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Crop Moisture Meter Networked to Smartphones

A novel, smartphone-enabled moisture meter provides an affordable solution for small- and medium-sized farmers to accurately capture and transmit crop quality data, enabling participation in higher-value commodity markets and maximizing profit.

Moisture content is one of the most important attributes of crop quality. Portable hand-held crop moisture meters manufactured by well-known companies cost around $300, pricing them out of the range for small- and medium- sized farmers in developing countries. Unfortunately, due to the lack of technology to measure and document produce quality, excludes most farmers from highly lucrative markets because of their inability to meet market standards. In addition, the data collected with these devices requires the manual transfer to paper by hand, a tedious and potentially error-filled process. There currently exist the need for an affordable, easy-to-use meter that records and stores crop-related data in an efficient manner.

Researchers at Purdue University have developed a novel moisture meter that uses a smartphone to capture, store, and transmit data. It also decouples the moisture meter/sensor from the sampling cup, securing the transfer of samples in sampling cups from one location to another. In addition, this technology empowers small- and medium-sized farmers to market their crops in higher value markets by allowing data integration between sellers, buyers, merchants, and financial institutions to improve operational efficiency and maximize profits. The prototype priced at approximately $30, but large-scale production should further reduce the price. In addition, this technology could track foodborne disease outbreaks back to specific farms.

Advantages:

-Accurate measurement of crop quality

-Allows small-and medium-sized farmers to participate in the commodities market

Technology ID

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Category

Agriculture, Nutrition, & AgTech/Precision Agriculture & Smart Farming

Agriculture, Nutrition, & AgTech/Food Safety & Traceability

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View online

-Track foodborne disease outbreaks

Potential Applications:

-Smartphone app

-Crop moisture meter

-Farming

-Commodities market

TRL: 5

Intellectual Property:

Provisional-Patent, 2017-04-17, United States | Provisional-Patent, 2021-02-23, United States | PCT-Patent, 2022-02-22, WO | NATL-Patent, 2023-08-21, United States

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