ANTICIPATING NEEDS / Current farm combine technology provides average yield data for harvested plots, but does not allow for a detailed analysis of differences between plants within a plot. The technology is also unable to provide information on the traits that contribute to yield such as ear size, kernel numbers or tip kernel death, which are key attributes that help explain and predict the ability of hybrids to yield when grown under stress. The high throughput ear photometry system measures areas of filled kernels of corn ears for rapid yield measurements and enables corn breeders to evaluate disease, observe plant-to-plant interaction, and measure the response of genetic responses to environmental stresses occurring during plant growth.

DELIVERING SOLUTIONS / The ear photometry system enables better prediction of product performance and allows for targeted selection of genetics showing adaptation to wide ranges of growing environments. Ear photometry is a key technology used in the continued development of many Pioneer brand corn products, including the Optimum® AQUAmax® product lineup.

EAR PHOTOMETRY IS A PATENTED AND PROPRIETARY TECHNOLOGY to DuPont Pioneer that quantifies yield on a single ear basis. Both genetics and environment can influence corn yield. Ear photometry enables researchers to identify which key ear traits determine yield so they can be leveraged in DuPont Pioneer corn products.

STATUS: This technology has helped develop corn hybrids with increased yield performance. The first corn hybrids using ear photometry were commercialized in 2010.

TECHNOLOGY LOCATION: Worldwide

CROPS: Corn

TECHNOLOGY APPLICATION: Development

• Improve precision and speed in developing and testing products

TECHNOLOGY LEADER: Precision Trait Measurement + High Throughput + Targeted Selection

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