Equipment Highlights from Farm Tech Days

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Farm Technology Days 2015 in Sun Prairie, Wisconsin, was a fantastic show. Nearly 600 commercial and educational exhibitors filled tent city. There were five field demonstrations and several new pieces of technology were showcased, a few of which I will review here.

The first up-and-coming technology in production agriculture is Unmanned Aerial Vehicles (UAVs). Both fixed wing and rotor type UAVs were displayed. The fixed wing machines provide a "macro" view of the field by flying higher and faster than rotor propelled counterparts. Most of these devices have auto take-off and landing and will fly a pre-determined route. Rotor type UAVs provide higher resolution information since they can hover at low altitudes. Multicopter UAVs will not cover the acreage that a fixed wing will, but their measurement resolution is much higher. Sensor offerings ranged from regular visible light imagery to vegetative index sensors. This technology provides crop information throughout the growing season, allowing farmers to make adjustments to meet the plant's needs.

Another interesting technology was Auto-Fill systems on large forage harvesters. These systems utilize an "electronic eye" to accurately aim the loading spout at the forage box. As the crop fills the box, the spout is automatically rotated to completely fill the box. These systems allow farmers to accurately aim the spout, minimizing harvested crop loss and reducing operator fatigue.

Soil moisture sensors and in-field weather stations were also showcased. These can be installed in-field and left throughout the growing season. With data connectivity, they provide farmers with a soil moisture profile at any time and information for irrigation management and scheduling.

In-field weather stations are also an emerging technology providing information like incident solar radiation, temperature, and rainfall. This field location information allows farmers to improve management decisions throughout the growing season.

Several interesting scale systems were also displayed. In addition to weighing vehicles coming in and out of farms, they also provide extra data management features. Every vehicle crossing a scale can be fitted with a Radio Frequency Identification (RFID) tag, streamlining processes like recording forage harvest yields.

With all these data generating sensors and machines comes innovative data analysis and management programs. These programs receive farmer-generated data and aggregate it with similar farmer-generated data. This provides more sample locations with varying weather conditions producing better analysis results when input into the company's proprietary algorithm for analysis (i.e., crop growth models, nitrogen movement models). These aggregated analysis programs allow farmers to have more accurate crop information to improve management decisions.

Farm Technology Days 2015 encompassed innovative and responsible agriculture technologies that farmers can implement to improve profitability, sustainability, and minimize environmental impact. I am looking forward to seeing what is new and innovative at the show next year!