

# COMPETING *for* PROFIT

**Smartfield**<sup>TM</sup>  
Growing a Greener Future

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TEXAS TECH UNIVERSITY

## SMARTFIELD

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Last week I was helping my dad wean some Hereford heifers. At the same time, I was confirming shipment of the Cotton Outlook booklets, calling Dr. Hudson's hotel in Washington D.C. so they would be expecting their arrival, and emailing Dr. Hudson, who was attending a conference in California, the shipment's tracking number. I looked over to see that my dad's farm employee had texted him a picture of a broken tractor part so that Dad knew exactly what to get at the John Deere dealership. And did I mention that we were doing all this in the pickup while hauling some Hereford heifers to the pasture?

To say the least, technology has become an important and growing presence in our everyday lives. While many may think technology exists more in the urban business areas, it is just as important and highly used by farmers and ranchers. Cell phones, GPS systems, cotton stripper harvesters, advanced irrigation methods, genetically modified seed, they have all allowed producers to be more productive and efficient with their time and land.

Smartfield, a Lubbock based information company, wants to improve growers' production and efficiency. The company's goal is to improve the profitability and quality of life of its customers by providing them the needed tools and information in a functional and timely manner. The company offers several products, such as SmartCrop, SmartRate, SmartWeather, and Croplnsight, to help producers conveniently manage their crops.

"We understand how busy farmers are," Kyle Gayler, chief financial officer of Smartfield, said. "What we do is take the data farmers need and put it into an informational format they can use and benefit from."

SmartCrop, the company's base product, uses specific tools to collect plant canopy temperature and environmental data. This information is used to determine if the plant is stressed, allowing farmers the ability to know when more water should be applied to certain areas of their crop, as well as being able to avoid overwatering areas not experiencing stress.

"We believe the plant is the sensor," Gayler said. "We can look at many factors when trying to determine what is wrong or right with a crop, but what we believe it all comes down to is the plant itself."

Gayler said information collected from SmartCrop can be text messaged or emailed to the grower so they know when events such as high stress levels or rainfall are occurring in their fields. Farmers can also login to Croplnsight, Smartfield's online portal, to see a variety of crop information including: canopy temperature, ambient temperature, relative humidity, precipitation, heat units, days since planting, and daily stress levels.

SmartCrop Premium adds a feature to SmartCrop allowing producers to monitor their pivots from remote locations. By simply using their cell phone or computer, farmers are able to shut-down their irrigation system when a specific amount of rainfall is recorded.

SmartRate PRO, another Smartfield product, is used to detect flow and up to three pressure readings, increasing the producer's comprehension of their drip irrigation system's performance. The technology can also detect the on/off status of up to 24 valves in a field.

SmartWeather is a remote weather station that collects important information such as ambient temperature, relative humidity, wind speed and direction, total solar radiation, and barometric pressure. This information is relayed to Croplnsight, allow-



## SmartCrop base system includes:

- Smartfield Base Station  
with Modem
- Base Station Mounting Kit
- Base Station Antenna
- Two IR Field Sensors with  
Standard Mounting Poles
- Rain Gauge with  
Mounting Bracket
- Relative Humidity Pod
- Cellular Antenna



ing growers to view the various environmental conditions of their fields from any remote location.

Additional Smartfield products include SmartRate, SmartProfile 4X and Smartfield Sensor Station, all designed to bring growers the information they need to maximize crop potential.

In 2009, Smartfield brought its products to producers for the first time. The company limited the number of systems to roughly 100, but hopes to increase that number to over 1,000 by the end of 2010. Gayler said Smartfield will begin installing additional pre-ordered systems this April, with a number of those being placed here in the South Plains area.

"We have systems all over the world," Gayler said. "We are not limited to any one crop, which allows us the ability to market to any irrigated area with cellular service."

As of today, Smartfield has systems all across the United States including Nebraska,

Texas and California, as well as international locations such as Puerto Rico, Australia and Italy. The company's products are not only used in a number of locations, but also on a large number of crops such as potatoes, cotton, soybeans, carrots, turf and alfalfa.

"As long as we know the optimal temperature of a crop, we are able to use our technology on it," Gayler said. "We have that for many crops, but we still need to conduct research to find it on others."

Smartfield also has systems in place today that are used for research purposes. The company works closely with a number of institutions in an effort to gain the data needed to monitor and improve its products.

Gayler said Smartfield is hoping more dealers will begin selling its products. The company realizes most dealerships already have established and trusting relationships with their customers, and believes those dealerships will be effective in getting Smartfield products in producers' hands.





Gayler said other marketing strategies the company plans to utilize include tradeshows, radio interviews, television commercials and industry publication advertisements. If you live in the Lubbock area, you might have already noticed a Smartfield commercial running on KCBD.

However, as many agriculture products go, the best advertisement for Smartfield is likely to be through word of mouth from those producers who have already experienced the benefits. Producers such as Glenn Shur of Plainview, Texas, who said that for the past five years the system has saved him one to one and a half inches per year of irrigation water and costs equaling anywhere from \$10 to \$16 dollars per acre, depending on energy expenses.

This sort of savings can equal major bucks to producers, and be extremely valuable to the declining water resources seen in areas such as the Texas High Plains. Industry and university experts agree steps should be taken to improve irrigation efficiency and that new technology, such

as that used in Smartfield's products, will aid in doing so.

Gayler said it is just as important for farmers to use Smartfield's technology in order to know when to not water their crop as it is to know when to apply more water. He said the company realizes more efficiency does not necessarily mean more yield. However, maximum yield is not the same as maximum return. More water plus more energy equals more cost, and what is the point of paying that additional cost if the plant does not need to be watered at that particular time?

Unneeded costs and water use is what Smartfield plans to help growers avoid. By providing valuable information, producers' crops, water availability, and pocket books are all sure to benefit from Smartfield's technology.

For more information on Smartfield, visit their website at [www.smartfield.com](http://www.smartfield.com).



**SmartWeather**  
brings the following  
information from the  
field to the farmer:

- ambient temperature
- relative humidity
- wind speed
- wind direction
- total solar radiation
- barometric pressure

## NOTE FROM THE CHAIR

DR. DARREN HUDSON

The Smartfield story is one of the potential benefits of technology. Of course, not all technology is equally beneficial, but Smartfield shows some great potential to “kill two birds with one stone.” First, the technology aims to improve management decisions by agricultural producers through the collection and dissemination about field-level conditions. These data allow producers to understand the relationship between field-level temperatures, moisture, and other key variables and crop performance. Then, producers can utilize this information to adjust water timing, amounts, as well as other chemical inputs, thereby avoiding unnecessary costs.

Second, better matching water needs to water requirements avoids water wastage, a key management issue in the Texas High Plains. Of course, simply matching water needs with application does not necessarily mean less water usage. But, better information about water requirements can improve yields on the same or less water.

Interestingly, this technology would greatly benefit from the simultaneous use of another, simple technology...water meters. Simply having accurate information about water usage greatly improve the ability to manage water use for greater profitability. In fact, recent research by the CASNR Water Center at Texas Tech shows that as little as 15% difference between perceived and actual water application can result in cost savings of \$8-10 per acre by properly adjusting chemical inputs to actual water application rates.



Dr. Darren Hudson, ACC Chair

When water meters are coupled with the Smartfield data collection technology, the producer will be armed with a great deal of information on which to base decisions. We are, of course, just beginning to understand the potential of this technology for production decisions. But, clearly, Smartfield technology is already having a real impact on producers.

