

## **NDSU Extension Discuss Wireless Technology and Energy Efficiency for Farms at Big Iron Show**

Just like the global positioning system (GPS), wireless technology is finding its way to the farm. Wireless technology is a method of sending data between electronic devices using radio waves. Wireless Local Area Networks (WLAN) allow computers and other electronic devices to communicate with each other. Farmers can use wireless technology to remotely monitor and control both conditions and activities at various locations on farms. Commercial sensors are available to monitor a wide variety of conditions including temperature, relative humidity, moisture, insect activity, electrical use, motion, light, on/off activity, open/closed position. Practical applications of these sensors allow farmers to monitor such things as weather conditions, stored grain condition, confined livestock facilities, water tank levels, irrigation equipment, and gate positions from remote locations up to several miles from their office computer. Wireless networks can also incorporate separate signals to control activities at remote sites such as switching motors on and off. These same wireless networks can provide wireless Internet access throughout the farm area.

North Dakota State University Ag and Biosystems Engineering Department Extension faculty will display and demonstrate wireless equipment at the Big Iron Show to remotely monitor stored grain conditions and the water level in livestock tanks. Monitoring grain temperature enables farmers to determine when grain aeration has cooled stored grain and recognize changes in grain condition. Increased temperatures can result from insect activity or mold growth in stored grain so remotely monitoring the temperature of stored grain can warn farmers of potential problems. The convenience of monitoring the water level in remote livestock watering tank from an office computer provides both assurance that livestock have water available and saves time and money required to travel to the pasture to physically check the tank.

Extension faculty will be available throughout the Big Iron Show at the combined North Dakota State University and University of Minnesota Extension booth. In addition to the information on wireless technology, NDSU Ag & Biosystems Engineering Extension faculty will have educational displays on ethanol and biodiesel production, livestock utilization of ethanol and biodiesel production byproducts and suggestions for energy efficient crop production practices. They will be available to discuss issues relating to grain drying and storage, geospatial technology, spray technology, irrigation, drainage. The University of Minnesota Extension Service faculty will be available to discuss issues relating to general crop production and fertility recommendations. NDSU Extension Animal and Range Science faculty will be available to discuss general livestock production and drought related issues.

Both universities have information available on websites which will be accessible at the booth. The NDSU Extension website is <http://www.ext.nodak.edu/>, the engineering website is <http://www.ag.ndsu.nodak.edu/abeng/>, and the University of Minnesota Extension website is <http://www.extension.umn.edu/>. The NDSU Extension Service will also have copies available of engineering publications.