



Method for Increased Safety in Chemical Applications from Aircrafts

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Mississippi State University currently seeks companies interested in commercializing a wind speed and direction measurement system. Currently, measurement devices provide wind speed and direction data, but the measurements are not site-specific and lack complete accuracy. Pressure from environmentalists, changing environmental protection laws, and skyrocketing jury awards have created an environment in which aerial applicators must attempt to reduce their exposure to litigation through improved drift control techniques. Researchers at Mississippi State University developed and patented (US Patent 7,640,797) a technology that allows for site-specific measurement of wind speed and direction. This breakthrough allows pilots to calculate wind speed and direction more accurately at a specific location. Users of this technology would include aviators in the agriculture, defense, and firefighting industries.

Uses/Applications

The primary application for the wind speed and direction measurement system is to assist crop dusting pilots with drift control. By calculating exact site-specific wind speed and direction, a pilot can make adjustments to his application in order to minimize drift. Pilots could also potentially utilize the technology in the defense and aerial firefighting industries when accurate measurements are needed to drop materials.

Advantages

- Site-specific measurements allow more accurate assessments of current weather conditions.
- By reducing spray drift, pilots avoid waste, comply with regulations, and avoid litigation.
- Provides documentation of site-specific conditions at the time of application, thus reducing liability.

Technology

This technology requires a pilot to fly a small box pattern at a consistent ground speed to enable the device to make a series of calculations to determine the current wind speed and wind direction at a given location.

Inventors

Dr. David Smith is a former professor from the department of agricultural and biological engineering in the Bagley College of Engineering at Mississippi State University. The Bagley College of Engineering is the largest, most comprehensive engineering college in Mississippi, and ranks in the top 10% nationally in engineering research expenditures. Dr. Smith was named Fellow of the American Society of Agricultural Engineers, an honor achieved by only 2% of the members, in 2001. Dr. Bert Nail is an associate professor emeritus in the department of electrical and computer engineering.