GreenSeeker® Satellite Calculator

Companion to the GreenSeeker® Sensors

An Addition to the GreenSeeker® Sensor Technology

Production agriculture is driven by decisions related to the weather (forecast for both short and long range) and agronomic practices. For the developing world, technology is not readily available to aid in these production management decisions, especially when compared to the developed world. However, with the advent of the GreenSeeker® Sensor technology developed at Oklahoma State University, and commercially marketed by N-Tech Industries, Inc. (previously) and currently by Trimble, the affordability and availability of superior technology for the developing world is a reality.

GreenSeeker® 500 Series Sensor

Handheld GreenSeeker® Sensor marketed by Trimble.

Currently however, the GreenSeeker® Sensor is not a stand-alone tool in the field. The sensor collects NDVI readings which then can be input into an online calculator or into downloaded software on a desktop or handheld computer, meaning the sensor is just one part of the entire equation.

The idea is to develop a handheld GreenSeeker® Satellite Calculator that can:

Replica of a potential GreenSeeker® Satellite Calculator, which is representative of a modern smartphone. The potential market for this device is worldwide with those in developed nations paying a higher price (target price of US$350.00) to help subsidize the cost to those in developing nations (target price of US$20.00).

- Receive information from satellites anywhere in the world since many places in the developing world do not have radio, cellular, or broadband wireless transmission
  - Weather, both current and forecasted
  - Agronomic news relevant to the area
- Be able to calculate Growing Degree Days greater than zero (GDD>0) while in the field
- Be able to run necessary software to calculate nitrogen recommendations based on NDVI values received from the GreenSeeker® Sensor.
- Have a camera capable of capturing photos of crops, insects, diseased crops, soils, etc. for future referencing
- Have the ability to geo-reference problems in the field, nitrogen-rich strips, or any other needed point of interest
- Have the ability to send information through satellites for communication with experts and scientists throughout the world to increase the response time of disseminating information around the world

Daniel Edmonds – SOIL 5112: Research Methods in Plant and Soil Sciences

Watermarked photo is of a soybean field in the bush country near Bindura, Zimbabwe, Africa taken in January 2008.