

Smarter

# Weed Control

## New Technology Reduces Chemicals and Labor Required

Several military installations are using a new technology for controlling weeds that reduces pesticide use, cuts costs by more than 75 percent and reduces labor costs by 50 percent.

The new technology, called the “WeedSeeker® Sensor,” is a patented technology that uses advanced optics and computer circuitry to detect the

presence of weeds. Once a weed is detected, through its chlorophyll matter, the signal prompts the WeedSeeker® to apply the chemical to the detected weeds. (More specifically, the signal tells the system controller to open a solenoid valve and activate the spray pump.) The pump operating pressure ranges from 20 to 40 pounds per square inch (psi). The

spray system is calibrated to deliver enough spray mix through the nozzles mounted in the boom of the device. Any excess material flows back into the chemical tank to agitate the solution.

A complete system mounted on a cart includes: one 6 x 4 gas John Deere Gator motor, a model DB 210 (10 spray heads) or DB212 (12 spray heads) weed sensors with valve



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cartridges, one CP600 controller, associated cables and piping system, a breakaway/folding boom, one 55-gallon chemical tank, one 14-gallon fresh water tank and one 12-volt pump. The estimated cost for a complete system with 10 sensors is around \$23,000.

### Application

A Model 210 WeedSeeker®, manufactured by Patchen, was successfully tested at Eglin Air Force Base (AFB), Florida by the personnel from the Civil Engineering Pest Management Program. The one-year weed control

test was conducted in parking lots, runways, taxiways, and in many other areas around the base. The environmental benefits and the cost savings were significant since there was a reduced amount of herbicide used and the labor hours required to apply them was greatly reduced. The test was a conducted on a two-acre facility to evaluate the vendor's claim of cost savings and environmental benefits by comparing the performance of the WeedSeeker® to the previously authorized method of pesticide application—a hydraulic boom continuous sprayer manned by two maintenance personnel. As reported by Eglin AFB, the WeedSeeker® system was easier, simpler to use, and required only one person to operate. Test results showed that the WeedSeeker® system used only two gallons to eradicate the weeds at the two-acre area compared to the previous method that consumed eight gallons of pesticide to control

the weeds in the same area. Labor costs were reduced by 50 percent and the use of herbicides was reduced by 75 percent.

It was also reported that the WeedSeeker® sensors and herbicide application system can be adjusted to achieve the same results at an increased cart speed of 10 miles per hour. This results in an increase of work area coverage per unit time.

Current users of the WeedSeeker® include the Air Force bases at Nellis, Mountain Home, Minot Seymour Johnson, Langley, Lajes Field, and Hickam; Naval Air Station (NAS) Jacksonville; and NAS Norfolk. The WeedSeeker® system is available through the Navy's Pollution Prevention Equipment Program. [↙](#)

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