

USING CLICKERS TO TEACH CALIBRATION OF SPRAYERS. Robert N. Klein, Western Nebraska Crops Specialist, University of Nebraska West Central Research and Extension Center, North Platte, NE 69101.

Applying the correct rate of a product is an important part of obtaining good results with pesticides. With a pesticide application, too little product can mean poor control, while too much can result in crop injury, extra costs, possible residue on the crop, and carryover.

Many methods can be used to calibrate sprayers, including the ounce calibration and formula-based methods. With the ounce calibration method, 1/128 of an acre is sprayed and the spray is collected. When measured in ounces the amount would be equal to the number of gallons applied per acre since there are 128 ounces in a gallon. Other methods involve using formulas which need to be remembered or recorded for easy use. These methods also may require converting some of the information you have.

The methods discussed in this presentation are simple relationships and do not require remembering formulas. However, you do need a general understanding of cross multiplication. The important thing is to be consistent: if you put an item on the top of an equation on one side, the same item also goes on the top of the other side.

Three factors that determine sprayer application rate are: 1) Speed, 2) Nozzle spacing, 3) Nozzle output (determined by orifice size, pressure, and density of spray solution).

A NebGuide which illustrates this method, G1511 "Calibration of Sprayers (Also Seeders)" is available on the University of Nebraska Web Site at <http://ianrpubs.unl.edu/farmpower/>

Using clickers enables the instructor to quickly measure the learning level of the participants. The instructor then knows if one should spend additional time on an area or can proceed to the next area. Following are examples of questions used to measure the participants progress.

Question 1. What is the travel speed if we travel 388 feet in 23 seconds?

- a. 5.5 mph,      b. 7.5 mph,      c. 9.5 mph,      d. 11.5 mph

Question 2. What is the gallons per acre if we collect 48 ounces in 30 seconds with a travel speed of 10 mph with 30" nozzle spacing?

- a. 14.85 gpa,      b. 16.25 gpa,      c. 18.5 gpa,      d. 20.65 gpa

Question 3. If I want to apply 10 gpa with an 11006 AI nozzle tip at 50 psi and I have 30" nozzle spacing, what is the speed?

- a. 9.3 mph,      b. 11.3 mph,      c. 13.3 mph,      d. 15.3 mph

Based on responses obtained from participants, the instructor may decide to review topics such as cross multiplication and/or using information from sprayer calibration references.