Calibrating a boom-buster sprayer

- **Fill spray tank ½ full with clean water.** Test the nozzles make sure all nozzles are clean and have good spray patterns. Select the spray pressure at which the system will be operated (check herbicide label and nozzle recommendations for guidelines). Adjust to desired pressure while pump is operating at normal speed and water is actually flowing through the nozzle. Minimize off-target drift by operating at the lower end of a nozzle's pressure range.

- **Collect the spray output** from the nozzles in ounces at the pressure to be used for a time interval easily converted to one minute (e.g. 30 sec * 2). Measure the volume collected in fluid ounces and divide by 128 to determine gallons per minute **(GPM).** (128oz = 1 gallon) **Example:** *(175oz collected in 30 seconds x 2) = 350oz/minute. Convert 350oz to gallons by dividing 350oz by 128oz = 2.734375 GPM.

- **Measure the SWATH WIDTH (SW) in inches or feet.** Measure the entire distance that the nozzles spray. (12 inches = 1 foot) **Example:** 18 feet SW = 216 inches

- **Select the travel speed** in miles per hour **(MPH)** that will be used for spraying. See chart below if no speed indicator is available on equipment. **Example:** 3MPH

- **Calculate the delivery rate in gallons per acre (GPA).** Use the following formula by inserting travel speed in miles per hour, nozzle spacing in inches or feet, and the gallon per minute output.

$$\frac{(\ 5940 \times \textbf{GPM}\ )}{(\ \textbf{MPH} \times \textbf{SW}\ \text{in}\ \textbf{INCHES})} = \textbf{GPA}$$

Example: $\frac{(5940 \times 2.734375\textbf{GPM})}{(\ 3\textbf{MPH} \times 216\text{in}\ \textbf{SW}\ )} = \frac{16242.187}{648} = 25\ \text{GPA}$

OR

$$\frac{(\ \textbf{GPM} \times 495\ )}{(\ \textbf{MPH} \times \textbf{SW}\ \text{in}\ \textbf{FEET}\ )} = \textbf{GPA}$$

Example: $\frac{(2.734375\textbf{GPM} \times 495\ )}{(\ 3\textbf{MPH} \times 18\text{ft}\ \textbf{SW}\ )} = \frac{1353.5156}{54} = 25\ \text{GPA}$

How to determine speed in miles per hour if you do not have a ground speed indicator on your equipment.

1. Set two markers in the field 200 feet apart.
2. Select gear and throttle setting on your vehicle.
3. Check time (in seconds) from running start to drive the 200 feet.

Time required to travel 200 feet at various speeds

Time for 200 feet Seconds	Equivalent speed MPH
45	3
34	4
27	5
23	6
19	7