

# Calibration

## Air Blast Sprayers

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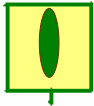
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Tree shape can have a significant effect on coverage:

•1° scab in top/center of tree is most common result



•2° scab control costs skyrocket

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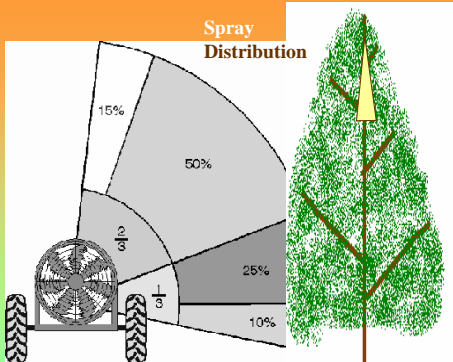
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### Spray Distribution



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## Nozzle Selection

- Nozzle output is regulated by position
- The largest output nozzles are directed at the top 1/3 of the canopy
- While output per side should be equal, distribution within a side should not be uniform

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## Basic Calibration

- To determine the gallons per minute that should be sprayed from each side of the sprayer
- Gallons per Minute (GPM) = 
$$\frac{\text{Desired GPA} \times \text{MPH} \times \text{Row Spacing (ft)}}{990}$$

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- If you know how many GPM your sprayer puts out and....your travel speed
- You can figure your GPA

$$\frac{\text{Gallons per Minute Sprayer Output} \times 445}{\text{Tree Row Spacing} \times \text{Miles per Hour}} = \text{GPA}$$

Example:  $10 \text{ GPM} \times 445/16\text{ft} \times 3 = 93\text{GPA}$

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## How Fast Am I Going?

- To accurately determine your speed in miles per hour
  - Time equipment over an 88 foot length
  - Divide the seconds elapsed into 60
  - MPH = 60/time to travel 88 ft
    - Example: it takes 20 seconds to travel 88 feet;  
 $60/20 = 3$  MPH

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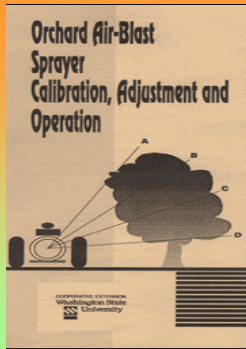
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<http://cru.cahe.wsu.edu/CEPublications/eb1575/eb1575.html>

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## Which Nozzles Should I Buy?

Nozzle Material	Per Nozzle Cost (Example)	Cost Per Unit of Wear
Brass	\$2.00	\$2.00
Stainless Steel	\$4.00	\$1.00
Hardened Stainless Steel	\$6.00	\$0.40
Tungsten Carbide/Ceramic	\$18.00	\$0.12

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## Mist Blower Use

- **Air must be calm**
  - Water and an air stream are used to carry pesticides to target
  - Higher wind & temperature and lower humidity will affect small droplets
    - Evaporate quickly, missing target
    - Reduced coverage
    - Increased risk of off target movement

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## What About Backpack Sprayers?

- **Select a defined number of trees**
  - If you have a tree spacing of 8' x 16', 34 trees would represent 1/10 Acre
  - Spray with backpack sprayer (filled with water), insuring uniform coverage
  - Refill sprayer
  - Refill volume x 10 equals GPA

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