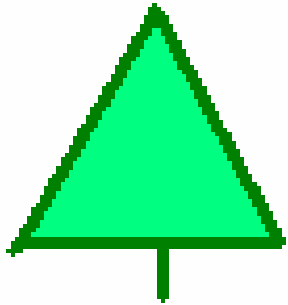


# Calibration

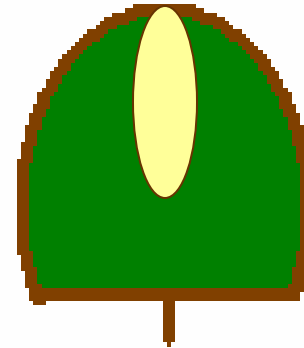
## Air Blast Sprayers

2009

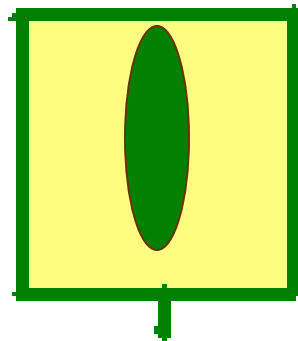


**Tree shape can have a significant effect on coverage:**

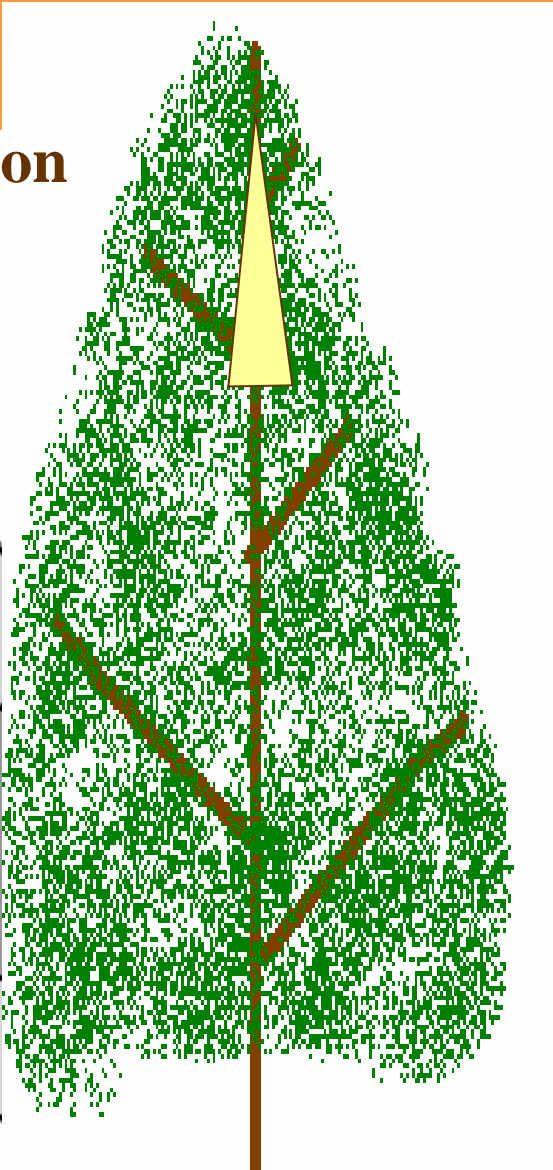
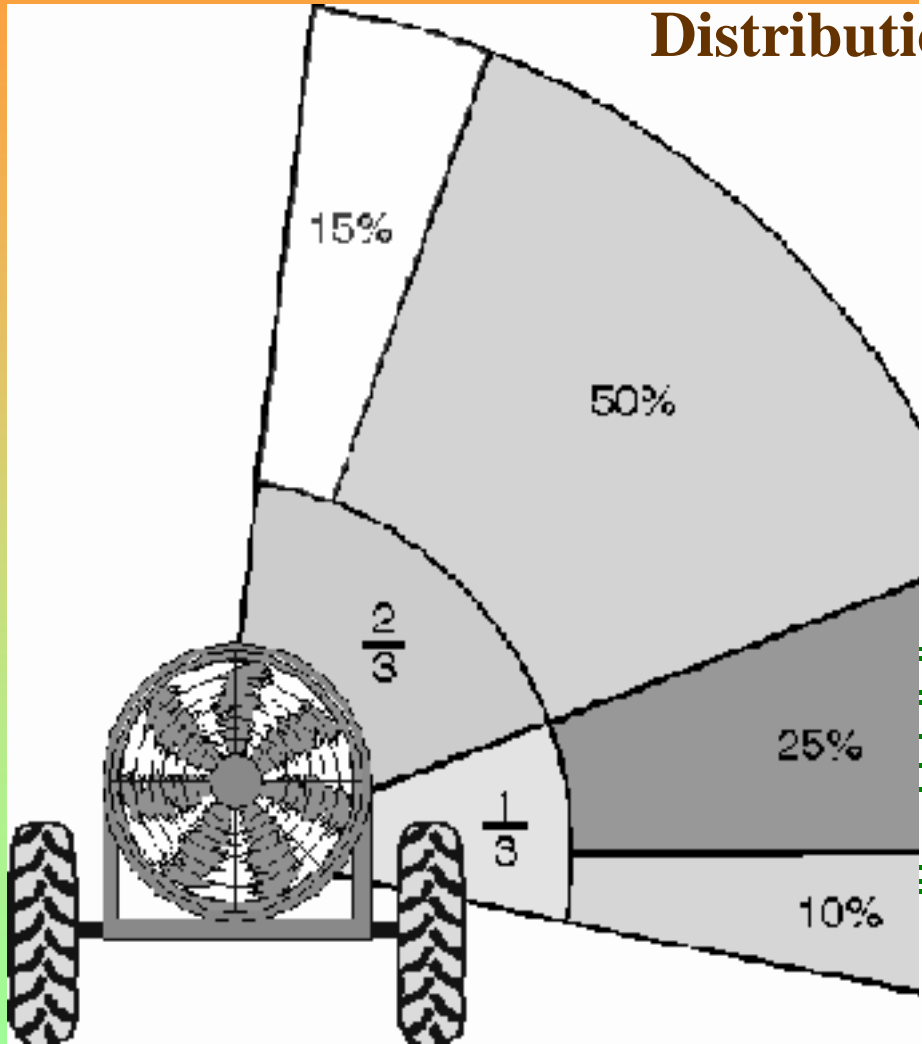
- 1° scab in top/center of tree is most common result



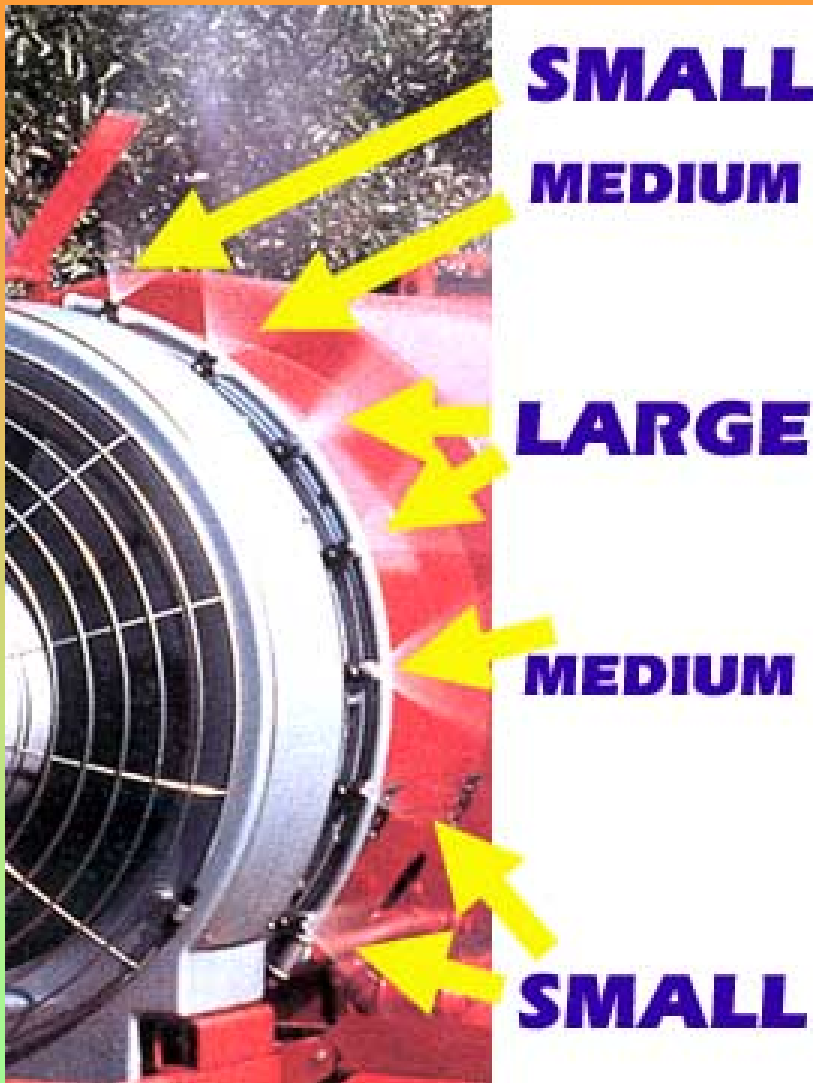
- 2° scab control costs skyrocket



# Spray Distribution



# 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

# Basic Calibration

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

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

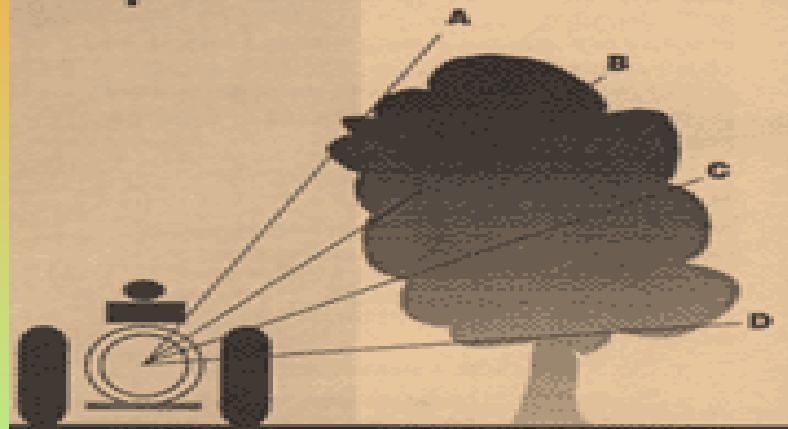
$$\frac{\text{Gallons per Minute Sprayer Output} \times 445}{\text{Tree Row Spacing} \times \text{Miles per Hour}} = \text{GPA}$$

**Example: 10 GPM x 445/16ft x 3 = 93GPA**

# 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**

# Orchard Air-Blast Sprayer Calibration, Adjustment and Operation



COOPERATIVE EXTENSION  
Washington State  
University

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

2009



UNIVERSITY of NEW HAMPSHIRE  
Cooperative Extension

# Which Nozzles Should I Buy?

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



# 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**

# 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**