

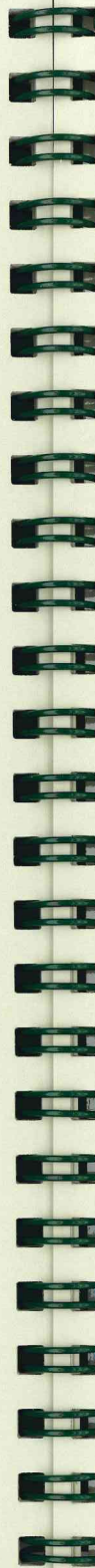


Spraying with a backpack sprayer.

HOW TO MAXIMIZE SPRAY EFFECTIVENESS

The guidelines below help save money and reduce unnecessary use.

- Keep equipment clean and in good working order. Replace worn spray nozzles as needed. Recalibrate sprayers annually.
- Identify pest or disease and only apply a registered pesticide if population levels warrant treatment. Use of an unregistered compound is not legal, and may be less effective than a registered one.
- Know the biology of the pest or disease and target the suitable life stage. The egg or pupal stage may be more resistant to pesticides than the larval or adult stages.
- Read the label to ensure that the compound is effective against the stage of the pest or disease present.
- If recommended, make repeat applications to reach all stages.
- Rotate pesticides using compounds with different modes of action to delay the development of resistance.



- Good coverage is essential, especially for contact insecticides/miticides and protectant fungicides. Make sure you get the undersides of the leaves. Between 150 and 300 gallons are typically needed to cover an acre of most greenhouse crops using a high volume sprayer.
- Use water-sensitive or oil-sensitive spray cards to evaluate coverage.
- Ensure crops are watered and not moisture stressed before spray.
- Unless indicated otherwise on the label, make applications early in the day or when it is cloudy to reduce chance of phytotoxicity and rate of evaporation. Horticultural oil is one exception; apply this when it is sunny for rapid evaporation.
- Add an acidifier if the pH of your water is higher than 7.0 and has over 205 parts per million (12 grains) of hardness. Water with a pH above 7.0 can cause carbamates and organophosphates to break down. High levels of suspended silt or organic matter in water can bind to pesticides making them ineffective.
- Use a different sprayer for herbicides than for pesticides to prevent accidentally harming the crop.
- Never tank mix pesticides with fertilizers.
- Do not tank mix more than one emulsifiable concentrate.
- Do not apply an emulsifiable concentrate that does not form a milky or opaque suspension when mixed with water. Do not apply a wettable powder if it does not break apart completely and become suspended in water.
- If applying a tank mix, check for chemical compatibility. While wearing protective equipment, mix them in a clear glass jar in the same sequence, proportion, and temperature that you will be applying them. Seal jar, shake it, and allow it to stand for at least

15 minutes. If a precipitate forms (clumps that may sink to the bottom), the mixture is likely incompatible. A mixture that generates heat indicates a chemical reaction occurred and should not be applied. Test mixture on a small area before treating entire crop.

- Dilute chemicals to be mixed in separate containers. Add half the water you plan to apply to the tank, then add the first chemical, followed by more water, and then add the second chemical. Add chemicals in the following order unless label indicates otherwise: wettable powders, flowables, soluble powders, surfactants, and emulsifiable concentrates.
- Check the label to determine if spreaders/stickers can/should be used if you are not getting good, even coverage. Start with low rate (usually 1-2 oz./ 100 gallons) and increase it only if necessary. Do not use more than 8 oz. of spreader/sticker per 100 gallons of water.
- When making applications to bedding plants and other plants with foliage close to the surface of the growing media, avoid soaking the soil with pesticides that may harm the roots.
- For soil drenches, make sure entire rooting medium is thoroughly wet, but do not exceed the recommended dilution rates.
- Buy only the amount of pesticide you think will be needed in one growing season. Only mix the amount required for a single application and do not store diluted pesticide mixtures.
- Keep records of the rate of pesticide applied, the date, the weather conditions, the time of day, and the crop stage.
- Scout the crop to determine the effectiveness of the pesticide application and record this information for later reference.

