

# Surround<sup>®</sup>

## Crop Protectant

Surround<sup>®</sup> Crop Protectant spray applications are most effective when resulting coverage is uniform and complete. A visual inspection of film deposition and completeness of coverage is crucial for fine-tuning spray amounts. Consult your sprayer's manual to determine what adjustments are necessary to achieve the desired coverage.

### Spray Equipment

Although Surround is designed for application through most conventional spray systems, the best method for applying Surround is through an air blast type orchard sprayer or boom sprayer with features as noted below. However, any standard orchard sprayer that is capable of making fine droplets and propelling them with turbulent force through the tree canopy can be adequate if coverage, as described in the product label, can be established and maintained.

Surround spray preparations made in accordance with label instructions produce suspensions that are similar in viscosity to water and that cause minimal abrasion to sprayer equipment.

To optimize applications, it is preferred that the sprayer has:

- Tank agitation with moderate-intensity mixing, capable of rapid incorporation of wettable powders. Mechanical agitation with variable speed is preferred over fluid agitation.
- A fluid bypass system where tank fluid is circulated through a mix basket to help aid in particle wetting and dispersion.
- A fan speed capable of producing 110 miles per hour wind speed to properly shear and propel the spray material.
- For orchard spraying, a nozzle configuration that can provide 2/3 of the spray volume from the upper 1/3 of the nozzles and 1/3 of the volume from the lower 2/3 of the nozzles.
- For field spraying, offset nozzles that direct the spray into the crop canopy at a 45° to 60° angle help the Surround spray to penetrate into the crop canopy more effectively.
- The ability to direct the majority of wind and spray into the crop canopy. If excessive spray goes into the air above the crop, it may be dry before it comes down, resulting in poor deposition.
- Nozzle sizes capable of creating fine droplets at the desired volume that can penetrate the inner crop canopy without excessive volume resulting in spray run-off.
- Strainers behind the nozzles.

### Tips for Improving Deposition

- Use the amount of water volume per acre to achieve near-drip. Too much spray volume causes excessive run off. Too little spray volume will not allow sufficient spreading and speckling will result.
  - For trees under 10 to 12 feet, 100 gallons of water per acre is normally sufficient.
  - For trees over 12 feet, 200 gallons per acre is recommended for complete coverage.
  - For field crops by ground, use 20 to 25 gallons of water per acre.
- Apply at ground speeds around 2 miles per hour or slower.
- Apply each application in the opposite direction of the previous application.
- Use of a spreader may help Surround spread more evenly.
- Don't apply if leaves are dripping wet.
- After drying, the foliage and fruit should have a uniform chalky white appearance.
- First coats may appear to be splotchy, but subsequent sprays will fill in the coverage.
- Often it takes two thorough sprays to establish a full coating.



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## Aerial Application

- Use no less than 10 gallons per acre. Best mixing results are achieved when mixing no more than 1 lb per gallon of water.
- Surround may be applied using standard aerial application nozzles.
- Make applications not more than 10 feet above the top of the largest plant unless a greater height is required for aircraft safety.
- When spraying at low relative humidity, increase droplet size to compensate for evaporation.

## Tank Mix Tips

- Add Surround slowly to sprayer tank half filled with water and with agitation operating.
- Always put Surround in the tank first and get it mixed in well, then add in tank mix partners, and spreaders, or oils.
- The use of surfactants can be effective in aiding coverage. Consider the following guidelines when using surfactants with Surround.
  - If using a non-ionic spreader, use 1 pint per 100 gallons
  - If using a silicon based product, use 3 ounces in 100 gallons of water. Water volume per acre may need to be reduced to avoid excessive drip.
  - Certain “super wetters” such as Kinetic<sup>®</sup> should be used at ultra low rates (1 ounce per 100 gallons).
  - If using NuFilm 17<sup>®</sup> or NuFilm P<sup>®</sup>, use 1 to 2 pints per 100 gallons of water.
  - If using a summer weight oil, use at the rate of 1 gallon in 100 gallons of water.
  - Consult the Surround CF Specimen Label regarding the use of Surround CF with dormant oil.
  - Sticking agents are not recommended on crops that require post harvest cleaning.

## Pesticide Compatibility

- Surround is physically compatible with most crop protection products. Do not use with Bordeaux mixtures or elemental sulfur. If compatibility is unknown, perform a jar test before mixing.
- Surround tends to reduce insect feeding. Insecticides that require ingestion by the insect for activity should be applied a few days before or after the Surround application. Insecticides that do not require ingestion have generally been effective when tank-mixed with Surround.
- When using a systemic or translocating product (such as a fungicide, PGR or certain insecticides) on a Surround treated crop, always use sufficient water to thoroughly wet the Surround. Surfactants may facilitate better wetting of the Surround layer and translocation of the material into the leaf.
- It is not possible to test every product or combination of products used with Surround. If the effectiveness of a tank-mixture with Surround is in doubt, apply the materials separately.

**Important:** Always read the label before buying and follow label instructions when using this product.

The use of Surround<sup>®</sup> WP in agricultural crop protection applications is covered by US Patents 6,027,740; 6,069,112; 6,110,867 and 6,156,327.

### CONDITIONS OF SALE – LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES

Failure to strictly follow label directions may cause injury to crops, animals, man or the environment. Tessenderlo Kerley, Inc. (TKI) warrants that the product conforms to the chemical description on the label and is reasonably fit for the purpose referred to in the directions for use when properly applied in normal weather conditions. TKI makes no other warranty or representation of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose. The exclusive remedy against TKI for any cause of action relating to the handling or use of the product is a claim for actual out-of-pocket damages, and in no event shall TKI be liable for special, indirect, incidental or consequential damages or expense of any nature, including, but not limited to, loss of profits or income, whether or not based on the negligence of TKI, breach of warranty, strict liability in tort, or any other cause of action. TKI and the seller offer the product, and the buyer and users accept it, subject to the foregoing conditions of sale and limitations of warranty, liability and remedies.

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