



# WALNUT BLIGHT TECH SHEET

**Instill goes beyond surface protection, by absorbing into treated crops to provide rain proof disease protection for 14-21 days**

**Active Ingredient:** Copper Sulfate Pentahydrate 21.27%

**Product Overview:** INSTILL is a broad-spectrum copper bactericide/fungicide. Its patented formulation speeds absorption into plants, enabling its active ingredient to move throughout the plant and be retained in the bio-system for up to 21 days.

**The Absorption Difference** Unlike other low dose coppers, INSTILL will not wash off, it provides a protective inside out barrier for superior disease prevention / control. The second benefit is the locally systemic activity provided with Instill allowing the copper to mobilize to protect the new tissue.

**Superior Formulation:** INSTILL is a solution (not a suspension) that leaves no visible residue and won't clog spray nozzles.

## Disease Overview

Walnut blight is the result of infection by the bacterium *Xanthomonas arboricola* pv *juglandis* (Xaj). All green tissue is susceptible to infection, including buds, flowers and leaves but nut infections are the most serious, usually resulting in economic damage.

## Spray Timing.

A successful walnut blight control program focuses on protecting developing shoots and flowers and decreasing Xaj bacteria over-wintering in dormant buds. Initial INSTILL walnut blight sprays should be timed to coincide with early shoot emergence. Instill provides a knock down of bacteria and quickly absorbs in the leaf tissue and floral parts. If bacteria are splashed from the outer bud scales to developing shoots and flowers, INSTILL prevents infection and subsequent blight lesions.

Since all walnut shoots do not emerge at the same time, the first protective spray is applied when 40% of the shoots are elongating, before leaves expand. A second spray is applied about 7 to 10 days later to protect the remaining opening buds. Additional spray decisions are based upon measurements of infected buds, disease history, weather conditions and variety.

## Instill Recommendation

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**Rate:** 30 oz per 100 gallons initial application // 20 oz per 100 gallons sequential applications

**Application timing:** Make first treatment at early pre-bloom

**Spray Interval:** Apply on a 7-10 day spray schedule until infection period has subsided

**Tank Mix:** For best results tank mix with Manzate flowable or Pro-stick

**Spray Solution pH is critical:** Optimal pH range is 5.5 – 6.5 (**Crop Damage Can Occur at pH below 4.5**)

48 Hour REI

0 Day PHI

MRL Exempt

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