Managing powdery mildew and rust on sunflower

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Several farmers in northern California’s Brentwood area grow sunflower, primarily for seed production. About 1,000 acres are cultivated each year.

Two fungal diseases are common on sunflower (Helianthus annuus L.): rust, caused by Puccinia helianthi Schw., and powdery mildew, caused by Erysiphe cichoracearum D.C. Rust and mildew, alone or in combination, occur on many crops and can reduce yield considerably.

Field test, 1982

In a field test to evaluate fungicides for rust and mildew control, plots 25 feet long and 36 inches wide, with one plant row per bed, were sprayed with either Bayleton (triadimenol) 50W, Tilt (propiconazole) 3.6E, or mancozeb 80WP on July 7 and 27. Similar, nontreated plots served as controls, and two beds between plots were left nontreated as a buffer. The plants were sprayed to runoff with a pressurized sprayer. The plot design was a randomized complete block with four replications.

At the time of the first application, the plants were free of rust or powdery mildew and were about 3 feet tall. On September 10, 46 days after the second application, 10 leaves taken at random from each plot were evaluated for the presence and severity of disease.

Results

Rust was present in all treated and nontreated plots but was significantly reduced by Tilt (table 1). Visually, but not statistically, Bayleton appeared to be somewhat more effective against powdery mildew than Tilt.

When the plots were reexamined on September 15 (51 days after the last application) the Bayleton-treated plants were still free of powdery mildew. None of the chemicals used caused any apparent damage to the plants.

Conclusions

In this field test, both Bayleton and Tilt controlled powdery mildew on sunflower. Tilt controlled rust, but Bayleton did not. Mancozeb 80WP, as used in this test, was not effective against either powdery mildew or rust. None of the fungicides tested is currently registered in California for use on sunflower.

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