

***Pseudomonas aureofaciens* Strain Tx-1 (006473) Fact Sheet**

Summary

Pseudomonas aureofaciens strain Tx-1 is a microbial pesticide that is used for controlling various fungal diseases of golf course turf. Large amounts of the microbe are grown in a production facility at the golf course, and the microbes are then distributed through the golf course irrigation system. EPA has approved the use of this pesticide until early in 2001, while it waits for additional data needed to more fully characterize the risks to non-target organisms. Available information indicates that use of the pesticide is not expected to have adverse health effects on humans.

I. Description of the Active Ingredient

Ps. aureofaciens is a naturally occurring bacterium that is widespread in soil and found near plant roots. The bacterium controls certain fungi that cause disease in plants.

II. Use Sites, Target Pests, and Application Methods

- **Use sites:** Turfgrass, including golf courses. Not for use on turf being grown for commercial seed production, for research purposes, or for sale or other commercial use as sod.
- **Target pests:** *Ps. aureofaciens* is approved for use against the following fungi, which cause the plant diseases shown in parenthesis: *Sclerotinia homeocarpa* (dollar spot), *Collectotrichum graminicola* (anthracnose), *Pythium aphanadermatum* (pythium), *Microdochium nivale* (pink snow mold).
- **Application methods:** The microbes are added to the golf course's sprinkler system, and are distributed when the grounds are watered. To maximize the effectiveness of the pesticide and to minimize exposure to humans and wildlife, the pesticide is normally applied in the evening or at night. The golf course grows the large quantities of microbes needed by using a special production system that connects directly to the sprinkler system.

III. Assessing Risks to Human Health

Whether or not a substance poses a risk to humans or other organisms depends on two factors: how toxic the substance is, and how much of it an organism is exposed to. Therefore, the EPA considers both toxicity and exposure data in determining whether to approve a pesticide for use

Based on review of the available toxicology data and other information related to *Pseudomonas aureofaciens* strain Tx-1, EPA finds that this microbe is not likely to produce adverse health effects in humans. The organism has been used for two years on golf courses with no reports of adverse effects or reactions. This organism is not known to cause an infectious disease in humans. Exposure is likely to be minimal because, as noted under

"Application Methods," the microbe is distributed in the watering system at times when people are not present in the area treated.

IV. Assessing Risks to the Environment

Available evidence suggests that *Pseudomonas aureofaciens* strain Tx-1 presents minimal risks to non-target organisms. However, EPA needs additional data to more definitively characterize risks to non-target organisms. Therefore, EPA is requiring specific toxicity and pathogenicity studies on the effects of *Pseudomonas aureofaciens* strain Tx-1 on aquatic and terrestrial wildlife, which it will review by early in 2001. Because there have been no adverse effects seen on the 200 U.S. golf courses that have been using this microbe, it is likely that no permanent ecological damage will occur during the two years it will take EPA to obtain and evaluate the additional data.

V. Regulatory Information

Pseudomonas aureofaciens strain Tx-1 was registered (licensed for use) on February 9, 1999 for two years. This registration will automatically expire on February 9, 2001 unless the registrant, Eco Soil Systems, provides EPA with sufficient data on effects on non-target organisms. Based on these data, EPA could then decide to convert the registration to a registration without an expiration date. There is one registered pesticide product with *Pseudomonas aureofaciens* strain Tx-1 as the active ingredient.

VI. Producer Information

Eco Soil Systems
10890 Thornmint Road
San Diego, CA 92127

VII. Additional Contact Information:

[Ombudsman, Biopesticides and Pollution Prevention Division](#) (7511P)
Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460