Frost-Preventing Bacteria: Pseudomonas fluorescens A506 (006438); Pseudomonas fluorescens 1629RS (006439); Pseudomonas syringae 742RS (006411) Fact Sheet

Summary

Some bacteria normally found on plant surfaces initiate formation of frost, which damages crops. However, if these harmful bacteria are displaced by other bacteria that do not cause frost to form, plants can withstand temperatures several degrees lower without harm. To prevent frost damage, pesticide products containing one or more of the bacteria above are applied to newly emerging leaves and flowers to crowd out the frost-forming bacteria that would otherwise flourish. Both *Pseudomonas fluorescens* and *Pseudomonas syringae* are found naturally on plants.

I. Description of the Active Ingredient

Some bacteria normally found on plant surfaces initiate formation of frost, which damages crops. However, if these harmful bacteria are displaced by other bacteria that do not cause frost to form, plants can withstand temperatures several degrees lower without harm. To prevent frost damage, pesticide products containing one or more of the bacteria above are applied to newly emerging leaves and flowers to crowd out the frost-forming bacteria that would otherwise flourish. Both *Pseudomonas fluorescens* and *Pseudomonas syringae* are found naturally on plants.

II. Use Sites, Target Pests, and Application Methods

- **Use sites:** Certain fruit crops, as well as almond, potato, and tomato crops
- **Target pests:** To prevent or reduce the growth of frost-forming bacteria on leaves and blossoms When used with other pesticide products, Pseudomonas fluorescens A506 can help suppress fire blight and discoloration on pear and apple crops, and bunch rot in grapes.
- **Application methods:** Two to four spray applications early in the growing season.

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

These bacterial active ingredients are not expected to cause any adverse health effects in humans. Various studies found no evidence that these bacteria are harmful to mammals.

IV. Assessing Risks to the Environment

These naturally occurring bacteria are not expected to harm the environment, including birds, mammals, plants, aquatic organisms, and honeybees. EPA was especially concerned about effects on honeybees because the pesticide products are applied in the spring, when honeybees are pollinating flowers.

V. Regulatory Information

Pseudomonas fluorescens strains A506 and 1629RS, as well as *Pseudomonas syringae* 742RS, were initially registered in 1992. As of April 2000, there were four end products containing one or more of these bacterial strains as active ingredients.

VI. Producer Information

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VII. Additional Contact Information:

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