

Potato Leaf Roll Virus Resistance Gene (also known as *orf1/orf2* gene) (006469) Fact Sheet

Summary

This active ingredient consists of a portion of potato leaf roll virus DNA, which has been incorporated into the cells of a particular strain of potato. The presence of the resistance gene prevents the potato leaf roll virus from reproducing in the potato plant. Use of this plant-pesticide is not expected to harm people, other organisms, or the environment, and has the potential to reduce the amount of organophosphates applied to potato crops.

I. Description of the Active Ingredient

The active ingredient, which is classified as a plant-pesticide, consists of a specific gene from the potato leaf roll virus that researchers have incorporated into potato cells. The gene inhibits the potato leaf roll virus from replicating in potato plants. Growers whose potatoes contain this active ingredient might be able to reduce the amount of organophosphates they use to control aphids, which transmit the leaf roll virus from plant to plant.

II. Use Sites, Target Pests, and Application Methods

- **Use sites:** Potatoes
- **Target pests:** Potato Leaf Roll Virus
- **Application methods:** This active ingredient is a viral gene incorporated into the cells of the potato.

III. Assessing Risks to Human Health

There are no known risks to humans from eating or handling potatoes with this viral gene. The leaf roll potato virus is common in potatoes, and people normally are exposed to it when they eat potatoes. No adverse effects have been reported. Furthermore, plant viruses do not reproduce in humans or in other vertebrates.

IV. Assessing Risks to the Environment

Use of this viral plant-pesticide is not expected to harm non-target species or the environment. No toxicity has been associated with the gene or with consumption of infected plants.

V. Regulatory Information

The potato leaf roll virus resistance gene (also known as orf1/orf2 gene) was registered as a plant-pesticide active ingredient in October 1998. As of January 2000, there was one registered end product--a particular strain of potato. This potato also contains the Cry III(A) gene from Bacillus thuringiensis, which codes for a protein that makes the potato resistant to the Colorado potato beetle. Consequently, this strain of potato is resistant to both potato leaf roll virus and Colorado potato beetle. Growers are required to take measures to prevent insects from developing resistance to the Cry III(A) gene.

VI. Registrant Information

Monsanto Company
700 Chesterfield Parkway North
St. Louis, MO 63198

VII. Additional Contact Information:

[Ombudsman, Biopesticides and Pollution Prevention Division](#) (7511P)
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