United States
Environmental Protection
Agency

Office of Pesticides
and Toxic Substances
(H7501C)

540/FS-89-057

EPA

Pesticide Fact Sheet

Name of Chemical: Trichoderma harzianum and Trichoderma polysporum
Reason for Issuance: Registration of New Biological Pesticide
Date Issued: July 1989
Fact Sheet Number: 203

1. Description

Generic Names:	Trichoderma harzianum (ATTC 20476) a Trichoderma polysporum (ATTC 20475)
Trade Name:	Binab™ T
EPA Shaughnessy Codes:	128903 and 128902, respectively
Year of Initial Registration:	1989
Pesticide Type:	Biofungicide
U.S. and Foreign Producers:	Binab™ USA, Inc. c/o E.R. Butts International, Inc. 555 Clinton Avenue P.O. Box 3337 Bridgeport, CT 06605-0337

2. Use Patterns and Formulations

Application sites: Mixtures of Trichoderma harzianum and T. polysporum are proposed for use in the control of internal decay of wood utility poles, playground structures, and fence posts and for use in the control of decay of pruning wounds of ornamental, shade, and forest trees.

Types of formulations: 28% pelleted end-use product (14% each active ingredient) and 33.2% wettable powder end-use product (16.6% each active ingredient).

Types and methods of application: Pellets are placed in holes drilled into wooden members followed by sealing of the holes with a vented plastic plug. Wettable powder formulation is mixed with water (1:2 v/v) and applied to pruning wounds of trees with a paint brush, followed by application of a wound sealant.

Application rates: For pellets: Three pellets/hole. Holes are 3/8" diameter, 4 1/2" deep, spaced 4" apart and placed 2-4" above ground level. Product contains approximately 1,400 pellets/pound. For wettable powder: Apply 1:2 mixture of product with water (v/v) to cover pruning wound.

3. Science Findings

Summary Science Statement:

The toxicological data which were submitted for these active ingredients included reports of acute oral and hypersensitivity studies and a request for waiver of all other toxicological data requirements was made based on the contention that Trichoderma species are widespread in the environment and are innocuous. The acute oral toxicity/infectivity study and hypersensitivity study were classified as Core-minimum and as such support registration of the active ingredients.

The species Trichoderma does not grow at temperatures above 28°C and is not capable of growth in warm blooded animals or birds. The proposed use patterns for the products would not expose aquatic wildlife to the fungi. The fungi are not pathogenic to plants or insects. Trichoderma species are naturally occurring in soils throughout the world. The proposed application sites and application rates would not cause a detectable increase over naturally occurring background levels. There would be no increased exposure to any non-target wildlife of ecological concern. The proposed uses do not pose a "may effect" situation to any endangered or threatened animal or plant species.

Data for environmental fate are not triggered under current requirements for the proposed products since the organisms are naturally occurring species and the results of initial (Tier I) tests did not trigger the need for additional testing.

Chemical Characteristics:

Color:	greyish beige
Physical State:	powdered solid or pellet
Odor:	moldy flour
Density:	171 grams/liter (WP); 650 grams/liter (Pellets)
pH:	5.4

Toxicological Characteristics:

Acute effects:

Acute oral toxicity (mice):
The acute oral LD_{50} toxicity of TUF (an extract from the Trichoderma strains) was greater than 4,000 mg/kg after 1 and 14 days. The acute oral and subcutaneous LD_{50} toxicities of trichodermin (antibiotic) in mice were greater than 1,000 mg/kg and 500-1,000 mg/kg respectively.

Hypersensitivity study (Guinea pig):
No sensitization occurred when Guinea pigs were dermally exposed to Trichoderma spores.

Other Toxicity Testing:
Additional toxicity testing was waived based upon submission of data or information:

1. which indicated that the fungi do not grow at or near the body temperatures of mammals or birds.
2. which demonstrated that no toxins or antibiotics were produced in simulated use situations.
3. which showed that exposure to Trichoderma strains has occurred in personnel working with the fungi for times of up to 18 years with no adverse toxicological effects.
4. which provides the criteria used to determine the extent to which formulated preparations are free from contaminating microorganisms.
5. which confirmed the exempt status of certain inert ingredients.

Ecological Characteristics

Data on the ecological characteristics of the products were waived based upon the fact that the fungi will not grow at or near body temperatures of mammals or birds, that the fungi are ubiquitous in nature and that the use patterns are unlikely to result in additional exposure of aquatic organisms or other non-target wildlife of ecological concern.

4. Benefits

The use of Binab™ T pellets will control internal decay of wood in utility poles, playground structures, and fence posts and may replace chemical treatments for these uses to some extent. The use of Binab™ T Wettable Powder will control decay of pruning wounds of ornamental, shade, and forest trees aiding in the maintenance of plant health and esthetic value of trees.

5. Tolerance Assessment

The products will not be used in situations where tolerances are required. Trees to be treated are limited to those which will not be used for food or feed production.

6. Summary of Major Data Gaps

No major data gaps exist for these active ingredients.

Contact Person at EPA

Susan T. Lewis
Acting Product Manager (21)
Fungicide-Herbicide Branch
Registration Division (H-7505C)
Environmental Protection Agency
401 M St., SW.,
Washington, D.C. 20460

EPA

United States
Environmental Protection Agency
Office of Pesticide Program (H7504C)
PMSD, Information Services Branch
401 M Street, SW
Washington, DC 20460

First-Class
Postage and Fees Paid
EPA
Permit No G-35

Official Business
Penalty for Private Use $300