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United States Environmental Protection Agency

Office of Pesticide Programs

August 1992

EPA

Reregistration Eligibility Document (RED)

Indole-3-Butyric Acid

REREGISTRATION ELIGIBILITY DOCUMENT

INDOLE-3-BUTYRIC ACID

LIST B

CASE 2330

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS
SPECIAL REVIEW AND REREGISTRATION DIVISION
WASHINGTON, D.C.

REREGISTRATION ELIGIBILITY DOCUMENT

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INDOLE-3-BUTYRIC ACID REREGISTRATION ELIGIBILITY TEAM

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GLOSSARY OF TERMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service
EPA	U.S. Environmental Protection Agency
FIFRA	Federal Insecticide, Fungicide and Rodenticide Act
MRID	Master Record Identification (number)
	EPA's system of recording and tracking studies submitted.
RED	Reregistration Eligibility Document

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EXECUTIVE SUMMARY

Pesticide products containing indole-3-butyric acid (IBA) as the sole active ingredient, or in combination with other active ingredients, have been registered since October 1960. These products have been registered for use on plant cuttings and transplants of nonfood, ornamental nursery stock to promote root growth and to reduce transplanting shock. In 1990, new products were registered for use on fruit and vegetable crops, field crops and ornamental turf to promote growth development of flowers and fruit and to increase crop yields. Thirty-one products are currently registered with the Environmental Protection Agency ("the Agency").

The Agency has assessed the available scientific information about this compound in relation to all its registered uses to determine its eligibility for reregistration. The data base for IBA is sufficient to allow the Agency to conduct a tentative risk assessment for all uses. Therefore, the Agency has determined that the products containing IBA for all uses are eligible for reregistration.

Before reregistering each product, the Agency is requiring confirmatory acute ecotoxicity data on the active ingredient, product specific data, and revised product labeling to be submitted within eight months from the issuance of this document. In an effort to reduce the time, resources, and number of animals needed to fulfill the acute toxicity data requirements for reregistration of end-use products containing IBA, the Agency has batched products which can be considered similar for purposes of acute toxicity. After reviewing these data and revised labels, the Agency will determine whether or not the conditions of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) section 3(c)(5) have been met, that is, whether product composition and labeling are acceptable and the product's uses will not cause unreasonable adverse effects to humans or the environment. If these conditions are met, the Agency will reregister the products. Those products which contain other active ingredients will be eligible for reregistration only when the other active ingredients are determined to be eligible for reregistration.

I. INTRODUCTION

In 1988, FIFRA was amended to accelerate the reregistration of products with active ingredients registered prior to November 1, 1984. The amended Act provides a schedule for the reregistration process to be completed in nine years. There are five phases to the reregistration process. The first four phases of the process focus on identification of data requirements to support the reregistration of an active ingredient and the generation and submission of data to fulfill the requirements. The fifth phase is a review by the Agency of all data submitted to support reregistration.

Section 4(g)(2)(A) of FIFRA states that in Phase 5 "the Administrator shall determine whether pesticides containing such active ingredient are eligible for reregistration" before calling in data on products under section 4(g)(2)(B), and either reregistering products or taking "other appropriate regulatory action," under section 4(g)(2)(C) and (D). Thus, reregistration involves a thorough review of the scientific data base underlying a pesticide's registration. The purpose of the Agency's review is to reassess the potential hazards arising from the currently registered uses of the pesticide; to determine the need for additional data on health and environmental effects; and to determine whether the pesticide meets the "no unreasonable adverse effects" criterion of FIFRA section 3(c)(5).

This document presents the Agency's decision regarding the reregistration eligibility of indole-3-butyric acid (IBA). This document consists of five sections. Section I is this introduction. Section II describes IBA, its uses and regulatory history. Section III discusses the human health and environmental assessment based on the data available to the Agency. Section IV discusses the reregistration decision for IBA and Section V discusses product reregistration. Additional details concerning the Agency's review of available data are available on request.[1]

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[1] EPA's reviews of specific reports and information on the set of registered uses considered for EPA's analyses may be obtained from: EPA, Freedom of Information, 401, M St., S.W., Washington, D.C. 20460.

II. CASE OVERVIEW

A. Chemical Overview

The following active ingredient is covered by this Reregistration Eligibility Document.

Common Name: IBA

Chemical Name: Indole-3-Butyric Acid

CAS Registry Number: 133-32-4

Office of Pesticide Programs Chemical Code: 046701

Empirical Formula: $C_{12}\ H_{13}\ NO_2$

Trade and Other Names: Hormodin, Seradix

Basic Manufacturer: Syntex S.A., Chemical Division

B. Use Profile

The following is information on the current registered uses and application methods. A detailed table of all uses of indole-3-butyric acid is in Appendix A.

Type of Pesticide: biochemical pesticide, plant growth regulator

Use Sites: Greenhouse Nonfood - ornamental plants, shade trees and shrubs

Terrestrial Nonfood - ornamental plants, shade trees, shrubs, turf, sod, lawn, golf courses

Residential Indoor/Outdoor - ornamental plants, shade trees and shrubs

Terrestrial Food - fruit, vegetable, field crops

Formulation Types

Technical Grade: 97.0%
Formulations: Dust: 0.01% - 4.5%
Soluble Conc./Liquid: 0.0004% - 1.03%
Wettable Powder/Dust: 0.1 - 0.8%

Method of Application:

Powder (Dust): plant cuttings are dipped in dust or inserting the cuttings into rooting media.

Dust is blown on the cutting ends by means of a duster or blower.

Liquid: cuttings are dipped in solution prior to insertion into rooting media.

Solution is poured into planting hole pre-transplant and during transplant.

Immediately after laying turf, solution is broadcast over turf and then watered in after application.

Foliage is sprayed with solution to point of run-off.

Broadcast: application is made depending on the crop (either by ground or air equipment) at -- leaf stage; pinhead; first or early bloom; initial pegging; first sign of running; or after transplant; pre and post emergence.

Solution is applied through sprinkler including center pivot, lateral move, end tow, side roll, traveler, big gun, solid set, or hand move irrigation systems.

C. Regulatory History

As stated in the Executive Summary, products containing IBA were first registered in October 1960. IBA was originally registered for use on a variety of nonfood ornamental plants, shrubs and shade trees to promote and accelerate root formation of plant clippings and to reduce transplant shock. On October 1990, additional uses were registered for IBA which included fruit and vegetable crops, field crops, and ornamental turf.

On June 28, 1988, the Agency issued a Data Call-In Notice for data on pesticide products containing IBA as the active ingredient. The registrants responded by requesting a low volume minor use data waiver for all applicable guidelines. The Agency was later asked to classify IBA as a biochemical pesticide. Following review, the Agency designated IBA as a biochemical pesticide based on the following scientific reason: 1) IBA is similar in structure and functional identical to a naturally occurring plant hormone or auxin, indole-3-acetic acid.

III. SCIENCE ASSESSMENT OF INDOLE-3-BUTYRIC ACID

A. Product Chemistry Assessment

Indole-3-butyric acid is a synthetic plant hormone which structurally resembles 3-indole acetic acid (IAA), the primary growth hormone, naturally occurring in plants. Several naturally occurring plant hormones have been identified which display structural and physiological activity similar to this compound. Such plant compounds, which are intermediate metabolites produced during the synthesis of 3-indole acetic acid from tryptophan, are thought to be converted to IAA prior to being considered effective when applied to auxin deficient plant tissue.

The molecular weight of IBA is 203.23. IBA is odorless, white or slightly yellow crystals, and has a melting point of 123-125°C. IBA is practically insoluble in water and chloroform but soluble in alcohol, esters and acetone.[2] All generic chemistry data requirements for IBA have been satisfied. Appendix B and C includes references of these data.

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[2] The Merck Index, Eighth Edition p. 565.

B. Human Health Assessment

1. Toxicology Data

The Agency has waived all data requirements on the active ingredient because of the expected, extremely low exposures to those involved in the use of products containing IBA and due to the negligible dietary exposures expected from the use of IBA on food and feed crops. IBA is exempt from tolerances of residues on crops (40 CFR 180.1099). All registered products are formulated with IBA in low percentages of IBA, from 0.0004 to 4.5, and are applied in ultra-low quantities, up to 7 mg active ingredient/acre/crop season, for the crop uses. Use of products for the ornamental plant propagation use also results in low applicator exposure to IBA.

Additionally, these products have low acute toxicity as suggested from data of at least one formulated product (Toxicity Categories III and IV, no dermal irritation, and moderate eye irritation, perhaps from another active or an inert ingredient in the product formulation.[3] As discussed in other sections of this document, the Agency is requiring registrants to submit new, or reference, existing acute toxicology and chemistry studies for each product.

2. Occupational and Residential Exposure

There is potential for occupational exposure to IBA during dipping and transplanting activities and mixing, loading and spraying activities. However, since the Agency does not have concerns about any toxicological endpoints, the Agency has not required exposure data. The Agency has no significant exposure concerns other than appropriate label precautions for eye protection for mixers, loaders, and applicators. For pesticide products in Toxicity Category II for primary eye irritation, the following protective eyewear are required: goggles; face shield; or safety with glasses with front, brow, and temple protection.

[3] MRID #s 41661402, 41661403, 41661404, 41661406

3. Human Risk Assessment

As discussed above, the potential risks to humans from occupational exposure to IBA are considered negligible due to: a) the lack of toxicological concerns, b) the low volume/minor use of the product, and c) IBA's structural resemblance to naturally occurring plant hormones.

C. Environmental Assessment

1. Ecological Effects and Environmental Fate Data

Although data from environmental fate and ecological effects studies have not been submitted, the Agency believes that there is sufficient information available to tentatively assess potential environmental risks resulting from the current uses of IBA. Accordingly, the Agency at this time will require environmental effects (ecotoxicity) data only for confirmatory purposes.

The terrestrial crop and turf uses of IBA result in very low exposures to the environment -- the maximum application rate is 7 mg/acre/crop season (1.7×10^{-5} pounds/acre). By comparison, this rate is five orders of magnitude lower than use rates typical of conventional pesticides and lower than most other biochemicals. Low application rates of IBA to crop land result in correspondingly low environmental concentrations and exposure to nontarget plants and animals. The Agency recognizes that IBA's low application rate alone is not sufficient evidence on which to base an environmental assessment. However, IBA's low application rate combined with its similarity in structure and physiological function to natural plant growth regulators are important factors to consider when assessing potential risks to nontarget terrestrial and aquatic plants and animals.

Indole-3-butyric acid (IBA) is similar in structure and biological activity to the naturally occurring plant growth hormone indole-3-acetic acid (IAA), a principal hormone of higher plants. Compounds similar to IBA (indoleacetamide, indoleacetaldehyde, indoleacetonitrile, and indolepyruvic acid) are intermediate metabolites in the synthesis of IAA from the amino acid tryptophan, which occurs widely in plants, fungi, bacteria, humans and other species. In fact, the average human excretes approximately 7 mg of IAA in urine daily. Given this occurrence of tryptophan and IAA in such a wide diversity of organisms, it is reasonable to assume IAA and similar compounds have metabolic pathways in avian and aquatic species.

Even though specific data have not been submitted, the Agency believes that IBA applied to the environment may be metabolized to IAA and other metabolites by soil, plant, and aquatic microorganisms. The chemical structure of IBA is very similar to IAA, the difference being that the aliphatic side chain contains two additional carbon

atoms. It is reasonable to conclude that a major mechanism of metabolism in the environment is ß-oxidation, a metabolic process in which fatty acids are metabolized by subtraction of two-carbon fragments. This is a common means of microbial metabolism of compounds such as IBA which consist of side chains linked to rings[4]. ß-oxidation of fatty acids also occurs in animal cells[5]. Further, IBA's metabolites and degradates after an application of 7 mg/acre are a negligible incremental contribution to the environment compared to naturally occurring amounts of IAA and related compounds.

For these reasons -- very low application rate, non-lethal mode of action, similar chemical structure and metabolic pathways to other well-known compounds, and natural occurrence in the environment -- the Agency believes that the registered uses of IBA are not likely to pose any significant incremental toxicity to nontarget plants or animals. It is important to note, however, that no data regarding environmental effects have been presented. Therefore, to confirm the presumption of no unreasonable risk to nontarget organisms, the Agency is requiring four basic ecotoxicity studies: acute oral and dietary avian toxicity and freshwater fish and aquatic invertebrate toxicity.

2. Environmental Risk Assessment

Above, the Agency has presented a set of facts and reasonable assumptions about IBA's behavior in organisms and the environment. In summary, 1) IBA is applied to the environment (crop land) in very low amounts resulting in correspondingly low exposures to plants and animals; 2) its mode of biological activity is a plant growth hormone rather than a toxicant or repellant; 3) it is structurally and functionally similar to other naturally occurring compounds which are ubiquitous in biological organisms; and 4) there is some evidence that IBA occurs naturally in plants.

Given these considerations the Agency believes the current uses of IBA will not result in unreasonable risks to the environment. While the Agency does not have toxicity values of IBA for representative avian and aquatic species and certain assumptions have been used to derive its environmental risk conclusion, the Agency nevertheless expects no unreasonable risk from the uses covered by this document. To support this conclusion and confirm related assumptions, the Agency is requiring data from four ecotoxicity studies. Refer to Appendix F for these specific data requirements.

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[4] Alexander, M. 1977. Introduction to soil microbiology. Second edition. John Wiley and Sons, New York.

[5] Lehninger, A.L. 1975. Biochemistry. Second edition. Worth Publishers, Inc. New York.

IV. RISK MANAGEMENT AND REREGISTRATION DECISION FOR INDOLE-3-BUTYRIC ACID

A. Determination of Eligibility

Section 4(g)(2)(A) of FIFRA requires the Agency to determine, after submission of relevant data concerning an active ingredient, whether products containing the active ingredient are eligible for reregistration. The Agency has waived the submission of most generic (i.e., active ingredient specific) data, except for technical chemistry data and acute ecotoxicity data for confirmatory reasons. The Agency has completed its review of the technical chemistry data and other factors and considerations, and has determined that this information is sufficient to support reregistration of all products containing IBA for all uses. Appendix B identifies the generic studies that the Agency reviewed for the determination of reregistration eligibility for IBA.

The Agency therefore finds that products containing only IBA as an active ingredient are eligible for reregistration once the product specific data, confirmatory ecotoxicity data, and amended labeling are received and accepted by the Agency. Products that contain additional active ingredients will be reregistered once the Agency completes eligibility decisions on the other active ingredients and once product specific and amended labeling are received and accepted. The reregistration of particular products is addressed in Section V of this document ("Product Reregistration").

Although the Agency has found that all products containing IBA are eligible for reregistration, it should be understood that the Agency may take appropriate regulatory action and/or require the submission of additional data to support reregistration of products containing IBA, if new information comes to the Agency's attention or if the data requirements for registration change.

V. ACTIONS REQUIRED BY REGISTRANTS

A. Determination of Eligibility

Based on consideration of data and information submitted for the active ingredient, IBA and the registered use patterns, the products containing this active ingredient are eligible for reregistration. Section 4(g)(2)(B) of FIFRA requires that the Agency obtain any needed product-specific data regarding the pesticide following a determination of eligibility. The Agency will review these data and the confirmatory ecotoxicity data and determine whether to reregister individual products.

B. Confirmatory Generic Data Requirements

These data requirements are presented in Appendix F.

C. Product Specific Data Requirements

The product-specific data requirements are stated in Appendix G.

D. Labeling Requirements for End-Use Products

1. The labels and labeling of all products must comply with EPA's current regulations and requirements. Follow the instructions in PR Notice 91-2 (Appendix D) and the Product Reregistration Handbook (Appendix E) with respect to labels and labeling.

2. The labels of IBA products in Toxicity Category II for primary eye irritation must bear the signal word "Warning" and must include the following eye protection/protective eyewear statement:

> "Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Wear goggles, face shield or safety glasses. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse."
>
> The accompanying statement of practical treatment should read:
>
> "If in eyes: hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. If swallowed: drink promptly a large quantity of milk, egg white, gelatin solution, or if these are not available, large quantities of water. Avoid Alcohol."

APPENDIX A

Indole-3-butyric Acid Use Patterns Subject to Reregistration

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
NON-FOOD/NON-FEED USES - **ELIGIBLE FOR REREGISTRATION**									
ORNAMENTAL HERBACEOUS PLANTS Use Group(s): Terrestrial Non-Food Crop, Greenhouse Non-Food Crop, Indoor Residential and Outdoor Residential									
Chemigation, Foliar, Irrigation	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Container plant, Cutting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Dip, Cutting, Not on label	SC/L	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dip, Cutting, Not on label	WP/D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dip, Root stock, Not on label	SC/L	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Bulbs, Dust bag	D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Corms, Dust bag	D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Cutting, Not on label	D	na	0.001 lb/35,000 cuttings	Not spec	Not spec	Not spec	None	None	

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Dust, Root stock, Dust bag	D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Seed, Dust bag	D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Soil drench, Post planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	7	None	None	
ORNAMENTAL HERBACEOUS PLANTSUse Group(s):Terrestrial Non-Food Crop, Greenhouse Non-Food Crop, Indoor Residential and Outdoor Residential									
Soil drench, Transplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	7	None	None	
Soil treatment, At planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Postplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Pretransplant, Not on label	D	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Pretransplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Not on label, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Plant bed, Not on label	D	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Plant bed, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Post planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	

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SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
Spot soil treatment, Post planting, Not on label	D	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
ORNAMENTAL WOODY SHRUBS AND VINES Use Group(s): Terrestrial Non-Food Crop, Greenhouse Non-Food Crop and Outdoor Residential									
Chemigation, Foliar, Irrigation	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Dip, Cutting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Dip, Cutting, Not on label	WP/D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Cutting, Hand held duster	D	na	Not specified	Not spec	Not spec	Not spec	None	None	
Dust, Cutting, Not on label	D	na	0.001 ai lb/35,000 cuttings	Not spec	Not spec	Not spec	None	None	
Soil treatment, At planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Post planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Pretransplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Post plant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Preplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spray, Foliar, Aircraft	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	

APPENDIX A: Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
ORNAMENTAL WOODY SHRUBS AND VINES Use Group(s): Terrestrial Non-Food Crop, Greenhouse Non-Food Crop and Outdoor Residential									
Spray, Foliar, Ground	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
ORNAMENTAL AND/OR SHADE TREESUse Group(s):Terrestrial Non-Food Crop, Greenhouse Non-Food Crop and Outdoor Residential									
Dip, Cutting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Dip, Cutting, Not on label	WP/D	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Dust, Cutting, Not on label	D	na	0.0013 lb ai/ 1000 cuttings or not specified	Not spec	Not spec	Not spec	None	None	
Soil treatment, At planting, Not on label	D	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Pretransplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Soil treatment, Post planting, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Post plant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spot soil treatment, Preplant, Not on label	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
Spray, Foliar, Aircraft	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	

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ORNAMENTAL AND/OR SHADE TREESUse Group(s):Terrestrial Non-Food Crop, Greenhouse Non-Food Crop and Outdoor Residential									
Spray, Foliar, Ground	SC/L	na	Dose cannot be calculated	Not spec	Not spec	Not spec	None	None	
FOOD/FEED USES - **ELIGIBLE FOR REREGISTRATION**									
BARLEY (CEREAL GRAIN) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Appn	Max. # Appn @ Max. Rate (Days)	Minimum Interval Between Appn. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
BEANS Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	Not Spec	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000026 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	Not Spec	None	
	SC/L	na	0.0000026 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
BROCCOLI Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
BRUSSELS SPROUTS Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
CABBAGE Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
CAULIFLOWER Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	14	None	None	

APPENDIX A: Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
CITRUS FRUITS Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Dip, Transplants, Not on label	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Directed spray, Transplants, Not on label	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Spray, Foliar, Not on label	SC/L	na	not specified	3/year	Not spec	Not spec	None	None	
CORN, FIELD,SWEET (CEREAL GRAIN) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Premergence, Ground	SC/L	na	0.0000078 lb ai/A	1	1	na	None	None	
Broadcast, Premergence, Aircraft	SC/L	na	0.0000078 lb ai/A	1	1	Not spec	None	None	
Band, Foliar, Ground	SC/L	na	0.0000026 lb ai/A	1	1	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
COTTON (UNSPECIFIED) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, In seed furrow, Ground	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	
Band, At cotyledon, Ground	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000039 lb ai/A	Not spec	Not spec	7	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
CUCUMBER Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000024 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000024 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000024 lb ai/A	Not spec	Not spec	7	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
LETTUCE Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, In furrow, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, In furrow, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Band, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
MELONS Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000029 lb ai/A	2	2	14	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000029 lb ai/A	2	2	14	None	None	
MUSTARD CABBAGE (PAKSHOI) Use Group(s): Terrestrial Food Crop									
Band, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
MUSTARD (LEAFY/STEM CROP) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, In furrow, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Band, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A: Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
OATS (CEREAL GRAIN) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
ONION Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	not specified	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	not specified	Not spec	Not spec	Not spec	Not Spec	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
ONION (GREEN) (MISCELLANEOUS VEGETABLE) Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	not specified	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	not specified	Not spec	Not spec	Not spec	Not Spec	None	
PEANUTS Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, At pegging, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, At pegging, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
PEAS Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Broadcast, Foliar, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	Not Spec	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
PEPPER Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
PEPPER Use Group(s): Terrestrial Food Crop									
Broadcast, Post transplant, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	
POTATO, WHITE/IRISH Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
RICE Use Group(s): Terrestrial Food Crop, Terrestrial Feed Crop and Aquatic Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	
RYE (CEREAL GRAIN) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Appe	Max. # Appe @ Max. Rate (Days)	Minimum Interval Between Appe. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
SORGHUM Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, In furrow, Ground	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Appn	Max. # Appn @ Max. Rate (Days)	Minimum Interval Between Appn. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
SOYBEANS (UNSPECIFIED) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Preplant incorporated, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
SPINACH Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, In furrow, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Band, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Cutting, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
SQUASH (SUMMER/WINTER/ ZUCCHINI) Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	7	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
SQUASH (SUMMER/WINTER/ ZUCCHINI) Use Group(s): Terrestrial Food Crop									
Broadcast, Foliar, Aircraft	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	7	None	None	
STRAWBERRY Use Group(s): Terrestrial Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000029 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
SUGAR BEET (SUGAR CROP) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.000002 lb ai/A	2	Not spec	30	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.000002 lb ai/A	2	Not spec	30	None	None	
SUGARCANE (SUGAR CROP) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Soil sidedress treatment, Foliar, Ground	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A: Case 2330 [Indole-3-buty[illegible] [illegible]cal 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
TOMATO Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Band, Post transplant, Ground	SC/L	na	0.0000013 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Post transplant, Aircraft	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Bloom, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	7	None	None	
Broadcast, Post transplant, Ground	SC/L	na	0.000002 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]

SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
TURNIP Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Band, Foliar, Ground	SC/L	na	0.0000013 lb ai/A	Not spec	Not spec	Not spec	None	None	
In furrow, At planting, Ground	SC/L	na	0.0000013 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000059 lb ai/A	Not spec	Not spec	Not spec	None	None	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
WHEAT (CEREAL GRAIN) Use Group(s): Terrestrial Food Crop and Terrestrial Feed Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Aircraft	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
Broadcast, Foliar, Ground	SC/L	na	0.0000053 lb ai/A	Not spec	Not spec	Not spec	Not Spec	None	
NON-FOOD/NON-FEED USES - ELIGIBLE FOR REREGISTRATION									
GOLF COURSE TURF Use Group(s): Terrestrial Non-Food Crop									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Foliar, Ground	SC/L	na	.000017 lb ai/A	Not spec	Not spec	30	none	none	

APPENDIX A:Case 2330 [Indole-3-butyric acid] Chemical 046701 [Indole-3-butyric acid]									
SITE Application Type, Application Timing, Application Equipment	Form	Minimum Application Rate	Maximum Application Rate	Max # Apps	Max. # Apps @ Max. Rate (Days)	Minimum Interval Between Apps. @ Max (Days)	Restricted Interval (Days)	Geographic Limitations	Use Limitation (code)
ORNAMENTAL LAWNS AND TURF Use Group(s): Terrestrial Non-Food Crop and Outdoor Residential									
Chemigation, Foliar, Irrigation	SC/L	na	not specified	Not spec	Not spec	Not spec	None	None	
Broadcast, Established lawns, Ground	SC/L	na	0.0000085 lb ai/A	Not spec	Not spec	Not spec	None	None	
Broadcast, Preharvest, Ground	SC/L	na	0.0000078 lb ai/A	Not spec	Not spec	Not spec	None	None	
Spray, Foliar, Ground	SC/L	na	0.000014 lb ai/A	Not spec	Not spec	30	None	None	
	SC/L	na	0.000017 lb ai/A	2	2	30	None	None	

Abbreviations used

Header: max=maximum; min=minimum; apps=applications; not spec=not specified; na=not applicable

Form: D=dust; SC/L=soluble concentrate/liquid; WP/D=wettable powder dust;

Rate: ai=active ingredient; A=acre; lb=pound

APPENDIX B

Generic Data Requirements for Reregistration of Indole 3-Butyric Acid and Data Citations Supporting Reregistration

GUIDE TO APPENDIX B

Appendix B contains listings of data requirements which support the reregistration for the pesticide covered by this Reregistration Eligibility Document.

Appendix B contains generic data requirements that apply to the pesticide in all products, including data requirements for which a "typical formulation" is the test substance.

The data tables generally are organized according to the following format:

1. Data Requirement (Column 1). The data requirements are listed in the order in which they appear in 40 CFR Part 158. The reference numbers accompanying each test refer to the test protocols set out in the Pesticide Assessment Guidelines, which are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.

3. Use Pattern (Column 2). This colun indicates the use patterns to which the data requirement applies. The following letter designations are used for the given use patterns: C (Terrestrial nonfood); I (Greenhouse nonfood); K (Residential); O (Indoor residential)

2. Bibliographic citation (Column 3). If the EPA has acceptable data in its files, this column lists the identifying number of each study. This normally is the Master Record Identification (MRID) number, but may be a GS number if no MRID number has been assigned. Refer to the Bibliography Appendices for a complete citation of the study.

APPENDIX B

Data Supporting Guideline Requirements for the Reregistration of Indole-3-Butyric Acid

Guideline Citation	Title of study	Use Pattern	Citation
§158.690 Product Chemistry			
151-10	Product Identity	CIKO	41584401
151-11	Manufacturing Process	CIKO	41584401
151-12	Discussion of Formation	CIKO	41584401
151-13	Analysis of samples	CIKO	41584402
151-15	Certification of limits	CIKO	41584402
151-16	Analytical Method	CIKO	41584402
151-17(a)	Color	CIKO	41584403
151-17(b)	Physical State	CIKO	41584403
151-17(c)	Odor	CIKO	41584403

151-17(d)	Melting Point	CIKO	41584403
151-17(e)	Boiling	CIKO	41584403
151-17(f)	Density	CIKO	41584403
151-17(g)	Solubility	CIKO	41584403
151-17(h)	Vapor Pressure	CIKO	41584403
151-17(i)	pH	CIKO	41584403
151-17(j)	Stability	CIKO	41584403
151-17(p)	Octanol/water partition	CIKO	41584403

APPENDIX B

Data Supporting Guideline Requirements for the Reregistration of Indole-3-Butyric Acid

Guideline Citation	Title of Study	Use Pattern	Citation
§158.690 Toxicology			
152-11	Acute Oral	CIKO	Waived
152-11	Acute dermal	CIKO	Waived
152-12	Acute inhalation	CIKO	Waived
152-21	90-day dermal	CIKO	Waived
152-23	Teratogenicity	CIKO	Waived
152-19	Mutagenicity	CIKO	Waived

APPENDIX C

Citations Considered to be Part of the Data Base Supporting the Reregistration of Indole-3-Butyric Acid

GUIDE TO APPENDIX C

1.
CONTENT OF BIBLIOGRAPHY. This bibliography contains citations of all studies considered relevant by EPA in arriving at the positions and conclusions stated elsewhere in the Reregistration Eligibility Document. Primary sources for studies in this bibliography have been the body of data submitted to EPA and its predecessor agencies in support of past regulatory decisions. Selections from other sources including the published literature, in those instances where they have been considered, will be included.

2.
UNITS OF ENTRY. The unit of entry in this bibliography is called a "study". In the case of published materials, this corresponds closely to an article. In the case of unpublished materials submitted to the Agency, the Agency has sought to identify documents at a level parallel to the published article from within the typically larger volumes in which they were submitted. The resulting "studies" generally have a distinct title (or at least a single subject), can stand alone for purposes of review, and can be described with a conventional bibliographic citation. The Agency has attempted also to unite basic documents and commentaries upon them, treating them as a single study.

3.
IDENTIFICATION OF ENTRIES. The entries in this bibliography are sorted numerically by Master Record Identifier number, or "MRID". This number is unique to the citation, and should be used at any time specific reference is required. It is not related to the six-digit "Accession Number" which has been used to identify volumes of submitted studies; see paragraph 4(d)(4) below for further explanation. In a few cases, entries added to the bibliography late in the review may be preceded by a nine-character temporary identifier. These entries are listed after all MRID entries. This temporary identifier number also is to be used whenever specific reference is needed.

4.
FORM OF ENTRY. In addition to the MRID, each entry consists of a citation containing standard elements followed, in the case of material submitted to EPA, by a description of the earliest known submission. Bibliographic conventions used reflect the standards of the American National Standards Institute (ANSI), expanded to provide for certain special needs.

a.
Author. Whenever the Agency could confidently identify one, the Agency has chosen to show a personal author. When no individual was identified, the Agency has shown an identifiable laboratory or testing facility as author. As a last resort, the Agency has shown the first submitter as author.

b.
Document date. When the date appears as four digits with no question marks, the Agency took it directly from the document. When a four-digit date is followed by a question mark, the bibliographer deduced the date from evidence in the document. When the date appears as (19??), the Agency was unable to determine or estimate the date of the document.

c.
Title. In some cases, it has been necessary for Agency bibliographers to create or enhance a document title. Any such editorial insertions are contained between square brackets.

d.
Trailing parentheses. For studies submitted to the Agency in the past, the trailing parentheses include (in addition to any self-explanatory text) the following elements describing the earliest known submission:

(1)
Submission date. The date of the earliest known submission appears immediately following the word "received."

(2)
Administrative number. The next element, immediately following the word "under," is the registration number, experimental use permit number, petition number, or other administrative number associated with the earliest known submission.

(3)
Submitter. The third element is the submitter, following the phrase "submitted by." When authorship is defaulted to the submitter, this element is omitted.

(4)
Volume Identification (Accession Numbers). The final element in the trailing parentheses identifies the EPA accession number of the volume in which the original submission of the study appears. The six-digit accession number follows the symbol "CDL," standing for "Company Data Library." This accession number is in turn followed by an alphabetic suffix which shows the relative position of the study within the volume. For example, within accession number 123456, the first study would be 123456-A; the second, 123456-B; the 26th, 123456-Z; and the 27th, 123456-AA.

APPENDIX C

INDOLE-3-BUTYRIC ACID BIBLIOGRAPHY

MRID Citation

41193801 Syntex Corp. (1989) Indole-3-butyric Acid: Product Identity and Composition. Unpublished study. 56 p.

41584401 Syntex Corp. (1990) Addendum to Guideline 61... per EPA request 1/29/90: Indole-3-Butyric Acid, Product Identity and Composition. 17p.

41193701 Syntex Corp. (1989) Indole-3-Butyric Acid: Analysis and Certification of Product Ingredients. Unpublished study. 20 p.

41584402 Syntex Corp. (1990) Addendum to Guideline 62... per EPA request of 1/29/90: Indole-3-Butyric Acid, Analysis and of Product Ingredients: 20 p.

41193702 Syntex Corp. (1989) Indole-3-butyric Acid: Physical and Chemical Characteristics. Unpublished study. 3 p.

41584403 Syntex Corp. (1990) Addendum to Guideline 63 ...per EPA request of 1/29/90: Indole-3-butyric Acid: Physical and Chemical Characteristics. 55 p.

APPENDIX D

PR Notice 91-2