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Re-evaluation Decision

RVD2010-12

# Imazethapyr

*(publié aussi en français)*

**18 October 2010**

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

Publications  
Pest Management Regulatory Agency  
Health Canada  
2720 Riverside Drive  
A.L. 6604-E2  
Ottawa, Ontario  
K1A 0K9

Internet: [pmra.publications@hc-sc.gc.ca](mailto:pmra.publications@hc-sc.gc.ca)  
[healthcanada.gc.ca/pmra](http://healthcanada.gc.ca/pmra)  
Facsimile: 613-736-3758  
Information Service:  
1-800-267-6315 or 613-736-3799  
[pmra.infoserv@hc-sc.gc.ca](mailto:pmra.infoserv@hc-sc.gc.ca)

Canada 

HC Pub: 100535

ISBN: 978-1-100-16948-4 (978-1-100-16949-1)

Catalogue number: H113-28/2010-12E (H113-28/2010-12E-PDF)

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## Table of Contents

Overview.....	1
Re-evaluation Decision for Imazethapyr.....	1
What Does Health Canada Consider When Making a Re-evaluation Decision?.....	2
What is Imazethapyr?.....	2
Health Considerations.....	2
Environmental Considerations.....	5
Value Considerations.....	5
Measures to Minimize Risk.....	6
Appendix I Comment and Response.....	9
References.....	11

# Overview

## Re-evaluation Decision for Imazethapyr

After a re-evaluation of the herbicide imazethapyr, Health Canada's Pest Management Regulatory Agency (PMRA), under the authority of the *Pest Control Products Act* and Regulations, is granting continued registration of products containing imazethapyr for sale and use in Canada.

An evaluation of available scientific information found that, under the revised conditions of use, products containing imazethapyr have value and do not present unacceptable risks to human health or the environment. As a condition of the continued registration of imazethapyr, new risk-reduction measures must be included on the labels of all products. No additional data are required at this time.

The regulatory approach for the re-evaluation of imazethapyr was first presented in Proposed Re-evaluation Decision PRVD2010-02, *Imazethapyr*<sup>1</sup>. This Re-evaluation Decision<sup>2</sup> describes this stage of PMRA's regulatory process for the re-evaluation of imazethapyr, summarizes the Agency's decision and the reasons for it.

Appendix I summarizes the comment received during the consultation process and the PMRA's response to this comment. This decision is consistent with the proposed re-evaluation decision stated in PRVD2010-02, *Imazethapyr*. To comply with this decision, registrants of products containing imazethapyr will be informed of the specific requirements affecting their product registration(s) and of regulatory options available to them.

For more details on the information presented in this Re-evaluation Decision, please refer to the Science Evaluation in the related Proposed Re-evaluation Decision PRVD2010-02, *Imazethapyr*.

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<sup>1</sup> "Consultation statement" as required by subsection 28(2) of the *Pest Control Products Act*.

<sup>2</sup> "Decision statement" as required by subsection 28(5) of the *Pest Control Products Act*.

## **What Does Health Canada Consider When Making a Re-evaluation Decision?**

The key objective of the *Pest Control Products Act* is to prevent unacceptable risks to people and the environment from the use of pest control products. Health or environmental risk is considered acceptable if there is reasonable certainty that no harm to human health, future generations or the environment will result from use or exposure to the product under its conditions or proposed conditions of registration<sup>3</sup>. The Act also requires that products have value<sup>4</sup> when used according to the label directions. Conditions of registration may include special precautionary measures on the product label to further reduce risk.

To reach its decisions, the PMRA applies rigorous, modern hazard and risk assessment methods and policies. These methods consider the unique characteristics of sensitive subpopulations in both humans (for example, children) and organisms in the environment (for example, those most sensitive to environmental contaminants). These methods and policies also consider the nature of the effects observed and the uncertainties present when predicting the impact of pesticides.

For more information on how the PMRA regulates pesticides, the assessment process and risk-reduction programs, please visit the PMRA section of Health Canada's website at [healthcanada.gc.ca/pmra](http://healthcanada.gc.ca/pmra).

### **What is Imazethapyr?**

Imazethapyr is a selective systemic herbicide. It is registered for preplant, pre-emergence or postemergence use on terrestrial food and/or feed crops. Imazethapyr may be used alone or in co-formulation with imazamox or pendimethalin to control a broad spectrum of broadleaf and grassy weeds. It is applied once per year at a rate of 10 to 100 g a.e./ha by ground equipment only.

### **Health Considerations**

#### **Can Approved Uses of Imazethapyr Affect Human Health?**

**Imazethapyr is unlikely to affect your health when used according to the revised label directions.**

Potential exposure to imazethapyr may occur through consuming food and water, working as a mixer/loader/applicator or by entering treated sites. The PMRA considers two key factors when assessing health risks: the dose levels where no health effects occur and the dose levels to which people may be exposed. The dose levels used to assess risks are established to protect the most

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<sup>3</sup> "Acceptable risks" as defined by subsection 2(2) of the *Pest Control Products Act*.

<sup>4</sup> "Value" as defined by subsection 2(1) of the *Pest Control Products Act*: "the product's actual or potential contribution to pest management, taking into account its conditions or proposed conditions of registration, and includes the product's (a) efficacy; (b) effect on host organisms in connection with which it is intended to be used; and (c) health, safety and environmental benefits and social and economic impact".

sensitive human population (for example, children and nursing mothers). Only those uses where exposure is well below levels that cause no effects in animal testing are considered acceptable for continued registration.

Toxicology studies in laboratory animals describe potential health effects from varying levels of exposure to a chemical and identify the dose where no effects are observed. The health effects noted in animals occur at doses more than 100-fold higher (and often much higher) than levels to which humans are normally exposed when using imazethapyr products according to label directions.

Imazethapyr belongs to the imidazolinone family of herbicides which demonstrate a very low toxicity profile in mammals due to a plant-specific mode of action. While acute overexposures to imazethapyr resulted in low toxicity by the oral, dermal and inhalation routes, results showed that contact with the eye may cause mild eye irritation. To prevent overexposure, label directions must be followed.

Additional findings in repeat-dose animal studies, including those in pregnant animals, consisted of decreases in some blood parameters, body weight, body-weight gain and food consumption. Overall, there was no concern with respect to carcinogenicity, genotoxicity, neurotoxicity or reproductive toxicity.

When imazethapyr was given to pregnant animals, effects on the developing fetus were only observed at doses that were toxic to the mother, indicating that the fetus is not more sensitive to imazethapyr than the adult animal.

The risk assessment protects against these effects by ensuring that the level of human exposure is well below the lowest dose at which these effects occurred in animal tests.

## **Residues in Water and Food**

### **Dietary risks from food and water are not of concern.**

Reference doses define levels to which an individual can be exposed over a single day (acute) or lifetime (chronic) and expect no adverse health effects. Generally, dietary exposure from food and water is acceptable if it is less than 100% of the acute reference dose or chronic reference dose (acceptable daily intake). An acceptable daily intake (ADI) is an estimate of the level of daily exposure to a pesticide residue that, over a lifetime, is believed to have no significant harmful effects.

Human exposure to imazethapyr from residues in treated crops and drinking water, including the most sensitive subpopulation (children 1–2 years old) was estimated. Only long-term (chronic) exposure estimates were determined for different subpopulations representing different ages, genders and reproductive status. Acute and cancer dietary assessments were not required.

Aggregate chronic exposure (that is, imazethapyr from food and drinking water) represents 8.9% and 43.4% of the chronic reference dose for the general population and children 1–2 years old, respectively, when using drinking water modelling. As a result, chronic risks were below the PMRA's level of concern.

The *Food and Drugs Act* prohibits the sale of adulterated food, that is, food containing a pesticide residue that exceeds the established maximum residue limit (MRL). Pesticide MRLs are established for *Food and Drugs Act* purposes through the evaluation of scientific data under the *Pest Control Products Act*. Each MRL value defines the maximum concentration in parts per million (ppm) of a pesticide allowed in or on certain foods. Food containing a pesticide residue that does not exceed the established MRL does not pose an unacceptable health risk.

Based on metabolism data, the current residue definition in all commodities is the parent compound, imazethapyr (CL 263499 or BAS 685 H) ( $\pm$ )-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic acid, expressed as ammonium salt.

For this residue definition, MRLs for imazethapyr are currently specified for kidney beans, lima beans, navy beans, pinto beans, runner beans, snap beans, soybeans, tepary beans, wax beans, which have a value of 0.1 ppm, and fenugreek and canola at a value of 0.05 ppm. PMRL2010-29 proposes specific MRLs for all label uses which currently rely on the residue provisions of B.15.002(1) of the Food and Drug Regulations.

### **Risks in Residential and Other Non-Occupational Environments**

#### **Residential and other non-occupational risks are not of concern.**

Imazethapyr is not registered for use in any residential areas. Therefore, a non-occupational risk assessment was not required. Basic statements to reduce drift to residential areas are required.

#### **Occupational Risks from Handling Imazethapyr**

#### **Occupational risks are not of concern when used according to the label directions.**

Based on the precautions and directions for use on the current label and considering the use of appropriate protective equipment, the risk estimates associated with mixing, loading and applying activities meet current standards for all use scenarios and are not of concern. Additional personal protective equipment is not required beyond what is currently specified on the label.

**Occupational postapplication risks are not of concern when used according to the revised label directions.**

Occupational postapplication risk assessments consider exposures to workers entering treated agricultural sites. Based on the precautions and directions for use on the original product labels reviewed for this re-evaluation, postapplication risk to workers meets current standards and is not of concern. To meet current standards, a minimum 12-hour restricted-entry interval is required for all uses.

## **Environmental Considerations**

### **What Happens When Imazethapyr Is Introduced Into the Environment?**

**Imazethapyr is mobile and persistent and poses a potential risk to terrestrial and aquatic vascular plants; therefore, additional risk reduction measures need to be observed.**

When imazethapyr is applied for control of weeds in crops, some of it finds its way into soil and water. The chemical is persistent in soil, sediment and water and could carry over. Imazethapyr is mobile and has the potential to leach to groundwater. However, field evidence indicates that imazethapyr remains within the top 15 cm of the soil after application. Water monitoring of ponds and rivers have revealed residues from runoff, but at concentrations below levels of concern for aquatic life. Two major transformation products are formed from the breakdown of imazethapyr in soil and aquatic systems, but their fate in the environment, especially of CL 290395 (Appendix VIII, Diagram 1), has not been fully characterized.

When imazethapyr is used for weed control in crops, there is a potential that sensitive plant species on land and in water may be exposed to the chemical as a result of the spray drift and runoff. Some of these species are sensitive to the chemical and would be adversely affected. In order to mitigate effects in non-target areas, spray buffer zones between the agricultural field and the non-target terrestrial or aquatic areas are required. The width of these buffer zones will be specified on the product label. Imazethapyr presents negligible risk to wild birds, mammals, bees, earthworms, fish, amphibians, aquatic invertebrates and algae because concentrations in the environments are expected to be at levels that are not harmful.

## **Value Considerations**

### **What is the Value of Imazethapyr?**

**Imazethapyr continues to contribute to weed management in a variety of crops when used in accordance with the label directions.**

Several major crops including canola, corn and lentils have been modified through mutagenesis followed by conventional breeding and selection to acquire imazethapyr tolerant traits (CLEARFIELD® traits). Imazethapyr has also been widely used in soybeans, field peas and



processing peas. It is the only herbicide registered for the control of broadleaf weeds in chickling vetch and fenugreek. Moreover, imazethapyr is the only alternative for the control of grassy weeds in chickling vetch and fenugreek. Imazethapyr controls both grassy and broadleaf weeds in adzuki beans, lima beans, snap common beans and dry common beans while alternatives only control either grassy or broadleaf weeds. Although imazethapyr plays a role in mitigating resistance development in weeds to other herbicide groups, consideration has to be given to resistance management as more weed species are reported to be resistant to herbicides that inhibit acetolactate synthase (such as imazethapyr) than to herbicides having other modes of action.

## **Measures to Minimize Risk**

The labels of registered pesticide products include specific instructions for use. Directions include risk-reduction measures to protect human and environmental health. These directions must be followed by law. As a result of the re-evaluation of imazethapyr, the PMRA is requiring further risk-reduction measures for product labels.

### **Additional Key Risk-Reduction Measures**

#### **Human Health**

- To protect workers entering treated fields, a 12-hour restricted-entry interval is required for all formulations.
- Precautionary statements are required to avoid drift to areas of human habitation or areas of human activity.

#### **Environment**

- Updated precautionary statements and terrestrial and minimal aquatic buffer zones (1 m) are required for the protection of terrestrial and aquatic habitats that may contain sensitive plant species.

#### **Other Information**

The risk assessments found in the PRVD2010-02, *Imazethapyr*, serves as an evaluation report. The relevant test data on which the re-evaluation decision is based on are available for public inspection, upon application, in the PMRA's Reading Room (located in Ottawa, ON, Canada). For more information, please contact the PMRA's Pest Management Information Service.

Any person may file a notice of objection<sup>5</sup> regarding this decision on imazethapyr within 60 days from the date of publication of this Re-evaluation Decision. For more information regarding the basis for objecting (which must be based on scientific grounds), please refer to the Pesticides and Pest Management portion of Health Canada's website, Request a Reconsideration of Decision, or contact the PMRA's Pest Management Information Service.

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<sup>5</sup> As per subsection 35(1) of the *Pest Control Products Act*.



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## Appendix I Comment and Response

### 1.0 Comment on the Use of Milk Residues in the Dietary Exposure Assessment

The registrant requested clarification of the anticipated residue estimate for milk used in the dietary exposure assessment, as the livestock feeding studies for imazethapyr demonstrated that there was no detectable transfer of residue from feed to edible tissues.

#### Response

When performing an aggregate (food and water) risk assessment, PMRA routinely considers potential dietary exposure from residues in milk and other animal commodities that may result from the use of treated feeds and forage. Refinement of the residue data is applied following established scientific methods until the risk assessment falls below the level of concern or until no more refinement steps are available. When the risk estimate falls below the level of concern, PMRA can conclude that the use of the pesticide according to the label instructions does not result in any aggregate risk concerns. Further refinement of the aggregate exposure assessment beyond this point is generally not considered.

In the aggregate (food and water) risk assessment for imazethapyr, presented in PRVD2010-02, no risk concerns were identified from the usage of imazethapyr and therefore, no further refinements were warranted. However, it is acknowledged that the residue estimate in milk was the major contributor to aggregate exposure. In order to address the comment made, the exposure estimate has been revised based on refined animal residues from the livestock metabolism and feeding studies, and is now determined to be between 0.2 and 0.6 % of the ADI for the general population and the most exposed subpopulation – infants <1 year of age, respectively. It should be noted that the revised exposure estimate does not change the conclusion of the initial risk assessment.



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## References

### A. Information Considered for the Chemistry Assessment

#### Studies/Information Submitted By Applicant/Registrant (Unpublished)

PMRA Document Number: 1468387

Reference: 1987, Pesticide Assessment Guidelines and Subdivision Product Chemistry Description of Beginning Materials and Manufacturing Process for the Manufacturing-Use Product AC 263499 Section 61-2, US-MRID40429401, MRID: 40429401, Data Numbering Code: 2.11.2, 2.11.3 Confidential Business Information.

PMRA Document Number: 1468396

Reference: 2000, Chemical Composition Data for AC 263499 Imazethapyr Technical Grade Active Substance (2-(4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl)-5-ethyl nicotinic acid) to Support Registration in Canada, APBR 1121, MRID: N/A, Data Numbering Code: 2.13.1, 2.13.2, 2.13.3 Confidential Business Information.

PMRA Document Number: 1468401

Reference: 1998, Composition and Identification of AC 263499 Imazethapyr Technical Grade Active Substance 2-4-isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl-5-ethyl nicotinic acid for Reregistration in Argentina, APBR 951, MRID: N/A, Data Numbering Code: 2.13.3 Confidential Business Information.

PMRA Document Number: 1468402

Reference: 1987, Physical and Chemical Characteristics for the Manufacturing-Use Product, AC 263,499, US-CHDV Volume 27 Report No. 10, MRID: N/A, Data Numbering Code: 2.14.1, 2.14.10, 2.14.11, 2.14.13, 2.14.14, 2.14.2, 2.14.3, 2.14.4, 2.14.5, 2.14.6, 2.14.7, 2.14.8, 2.14.9 Confidential Business Information.

PMRA Document Number: 1469166

Reference: 1990, Comparison of the Chemical Composition of Typical Current Large Scale Production of Technical Grade Active Ingredient CL 263,499 in Pursuit Herbicide Produced at the Hannibal Manufacturing Facility with the Chemical Composition Established from Pilot Plant. Data Numbering Code: 2.13.3 Confidential Business Information.

PMRA Document Number: 1469174

Reference: 1991, Imazethapyr (PURSUIT) Technical Active Ingredient Product Chemistry Data for Agriculture Canada, Data Numbering Code: 2.11.3, 2.13.1, 2.13.3, 2.13.4 Confidential Business Information.

PMRA Document Number: 1706013

Reference: 1988, Technical Chemistry file IMP-QUA-2. Analytical Data and Methodology, Chemical and Physical Properties - UV Visible Absorption Spectrum, Data Numbering Code: 2.13.1, 2.13.2, 2.13.3, 2.13.4, 2.14.2 Confidential Business Information.

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**B. Information Considered for the Toxicological Risk Assessment****Studies/Information Provided by Applicant/Registrant (Unpublished)**

PMRA Document Number: 1226693

Reference: 1985, AC 263, 499: Acute Dermal Toxicity Study in Albino Rabbits, Data Numbering Code: 4.2.2

PMRA Document Number: 1226695

Reference: 1985, AC 263, 499: Eye Irritation Study in Albino Rabbits, Data Numbering Code: 4.2.4

PMRA Document Number: 1226684

Reference: 1985, AC 263,499: Acute Oral LD50 Study in Albino Rabbits, Data Numbering Code: 4.2.1

PMRA Document Number: 1226639

Reference: 1985, AC 263,499: Guinea Pig Dermal Sensitization Study, Data Numbering Code: 4.2.6

PMRA Document Number: 1226696

Reference: 1985, AC 263,499: Skin Irritation Study in Albino Rabbits, Data Numbering Code: 4.2.5

PMRA Document Number: 1226694

Reference: 1985, Acute Inhalation Toxicity, Single Level, 4-hour Exposure - Rats, Data Numbering Code: 4.2.3

PMRA Document Number: 1226035

Reference: 1985, Appendix to Final Report - A Teratology Study with AC 263,499 In Rabbits, Data Numbering Code: 4.5.3

PMRA Document Number: 1226643

Reference: 1985, Bacterial/Microsome Reverse Mutation (Ames) Test on AC 263,499, Data Numbering Code: 4.5.4

PMRA Document Number: 1236459

Reference: 1985, Clastogenic Evaluation of AC 263,499 Lot # AC 4570-141 in an In Vitro Cytogenetic Assay Measuring Chromosomal Aberration Frequencies in Chinese Hamster Ovary (CHO) Cells, Data Numbering Code: 4.5.4

PMRA Document Number: 1236463

Reference: 1987, Chronic Dietary Toxicity and Oncogenicity Study with AC 263,499 in Rats, Final Report. Data Numbering Code: 4.4.1, 4.4.2

PMRA Document Number: 1236464

Reference: 1987, Chronic Dietary Toxicity and Oncogenicity Study with AC 263,499 in Rats, Final Report. Data Numbering Code: 4.4.1, 4.4.2

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PMRA Document Number: 1226646

Reference: 1985, Dominant Lethal Study with AC 263,499 in Rats, Data Numbering Code: 4.5.4

PMRA Document Number: 1226650

Reference: 1985, Herbicide AC 263,499: The Absorption, Excretion, Tissue Residues, and Metabolism of Carbon-14 Labelled AC 263,499 In the Rat, Data Numbering Code: 4.5.9,6.4

PMRA Document Number: 1226644

Reference: 1985, Rat Hepatocyte Primary Culture/DNA Repair Test, Data Numbering Code: 4.5.4

PMRA Document Number: 1226697

Reference: 1985, Appendix to Final Report – A Teratology Study with AC 263,499 in Rabbits, Data numbering Code: 4.5.3

PMRA Document Number: 1226033

Reference: 1985, Teratology Study with AC 263,499 in Rats, Data Numbering Code: 4.5.2

PMRA Document Number: 1226027

Reference: 1985, Twenty-one Day Dermal Toxicity Study - Rabbits, Data Numbering Code: 4.3.4

PMRA Document Number: 1236457

Reference: 1986, (AC 263,499) Acute in Vivo Cytogenetics Assay in Rats. Final Report, Data Numbering Code: 4.5.4

PMRA Document Number: 1236458

Reference: 1986, (AC 263,499) Test For Chemical Induction of Gene Mutation at the Hgprt Locus in Cultured Chinese Hamster Ovary (CHO) Cells with and without Metabolic Activation, Data Numbering Code: 4.5.4

PMRA Document Number: 1226034

Reference: 1986, A Teratology Study with AC 263,499 In Rabbits, Data Numbering Code: 4.5.3

PMRA Document Number: 1226692

Reference: 1986, AC 263, 499: Toxicology Report Ax85-1 A 13-week Rat Feeding Study. Experiment L-2139., Data Numbering Code: 4.3.1

PMRA Document Number: 1236454

Reference: 1986, Summary - AC 263,499 Rat Oral LD50, Data Numbering Code: 4.2.1

PMRA Document Number: 1619943

Reference: 1986, Summary Of Experimental Results - Rat Oral LD50 CL 288,511, Data Numbering Code: 4.2.1

PMRA Document Number: 1226029

Reference: 1986, Two-generation (two-litter) Reproduction Study with AC 263, 499 in Rats (Vol. I of V), Data Numbering Code: 4.5.1



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PMRA Document Number: 1226030

Reference: 1986, Two-generation (two-litter) Reproduction Study with AC 263, 499 in Rats (Vol. III of V), Data Numbering Code: 4.5.1

PMRA Document Number: 1226031

Reference: 1986, Two-generation (two-litter) Reproduction Study with AC 263, 499 in Rats (Vol. IV of V), Data Numbering Code: 4.5.1

PMRA Document Number: 1226032

Reference: 1986, Two-generation (two-litter) Reproduction Study with AC 263, 499 in Rats (Vol. V of V), Data Numbering Code: 4.5.1

PMRA Document Number: 1236455

Reference: 1987, (AC 263,499) Dietary Toxicity Study in Beagle Dogs, Data Numbering Code: 4.3.2

PMRA Document Number: 1236449

Reference: 1987, Chronic Dietary Toxicity and Oncogenicity Study with AC 263,499 in Mice. Final Report, Data Numbering Code: 4.4.1, 4.4.2

PMRA Document Number: 1236451

Reference: 1987, Chronic Dietary Toxicity and Oncogenicity Study with AC 263,499 in Rats. Final Report, Data Numbering Code: 4.4.1, 4.4.2

PMRA Document Number: 1130307

Reference: 1987, Pursuit Herbicide (AC 263,499): Study of the Absorption, Excretion, and Metabolism in Rats Receiving an Oral Dose of About 1000 Mg/kg Carbon-14 Labelled AC 263,499, Data Numbering Code: 4.5.9,6.4

PMRA Document Number: 1468439

Reference: 1989, Imazethapyr Herbicide (AC 263,499): The Absorption, Distribution, Elimination and Metabolism of Carbon-14 Labelled AC 263,499 in the Laboratory Rat, Data Numbering Code: 4.5.9

PMRA Document Number: 1619942

Reference: 1991, Rat Oral LD50 Study with AC 288,511, Data Numbering Code: 4.2.1

PMRA Document Number: 1226641

Reference: 91-day Dietary Toxicity Study in Purebred Beagle Dogs with AC 263,499. Homogeneity and Stability of AC 263,499 in Canine Meal for A Ninety-one-day Dog Toxicity Study. Analysis of Weekly Feed Samples from A Ninety-One-day Dog Toxicity Study. Validation of HPLC Method M-1585 for the Determination of AC 263,499 in Purina Certified 5002 Rodent And 5007 Canine Diet Meal, Data Numbering Code: 4.3.2

PMRA Document Number: 1226661

Reference: Summaries - Acute Oral LD50 Study In Albino Rabbits and Albino Mice, Acute Dermal Toxicity Study in Albino Rabbits, Acute Inhalation Rats, Eye and Skin Irritation Albino Rabbits, Dermal Sensitization Study in Guinea Pigs, 91-day Dietary Study in Purebred Beagle Dogs, Bacterial/Microsome Reverse Mutation (Ames) Test, Rat Hepatocyte Primary Culture/DNA Repair Test, Dominant Lethal Study in Rats, Data Numbering Code 4.1

### **Additional Information Considered**

#### **Published Information**

##### **PMRA**

##### **Document**

<b>Number</b>	<b>Reference</b>
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PMRA Document Number: 1728447

Reference: 2009, Koutros et al., Heterocyclic Aromatic Amine Pesticide Use and Human Cancer Risk: Results from the U.S. Agricultural Health Study - Int. J. Cancer: 124, 1206-1212. Data Numbering Code: 4.8.

### **C. Information Considered for the Occupational Risk Assessment**

#### **Additional Information Considered**

#### **Published Information**

Data Numbering Code: 926601

Reference: US EPA, 2002. ID#s - 6F04746 (Nongrass Animal Feed Crop Group), IE06286 (Import Tolerance; Imidazolinone-tolerant Canola) and 0F0 Health Effects Division (HED) Risk Assessment for Imazethapyr. US EPA Office of Prevention, Pesticides and Toxic Substances, Washington, DC. April 23, 2002. Data Numbering Code: 12.5.

### **D. Information Considered for the Dietary Risk Assessment**

#### **Studies/Info Provided by the Applicant/Registrant (Unpublished)**

PMRA Document Number: 1146689

Reference: (Imazethapyr/2AS): Residues of CL263,499 in Green Peas (Succulent and Dry) (c-3149;09414;0185;pu-88-wa-02(6950);1808)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1146682

Reference: (Imazethapyr/2AS): Residues of CL263,499 in Green Peas (Succulent and Dry)(c-3174;09414;0185;pu-88-mn-05(7054);1831)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1146683

Reference: (Imazethapyr/2AS): Residues Of CL263,499 in Green Peas (Succulent And Dry)(c-3177;09414;0185;pu-88-md-01(7149);1851)(Pursuit), Data Numbering Code: 7.4.2

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PMRA Document Number: 1146687

Reference: (Imazethapyr/2AS): Residues of CL263,499 in Green Peas (Succulent and Dry)(c-3181;09414;0185;pu-88-mn-01(7056);1841)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1146681

Reference: (Imazethapyr/2AS): Residues of CL263,499, CL288,511 and Cl182,704 in Field Pea Vine, Hay, Straw, Pod and Dry Pod (c3849;0952;7816;0185)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1156312

Reference: (Imazethapyr/2AS): Validation of GC Method M1981 for the Determination of CL263,499 and CL288,511 Residues in Field Corn (c3355;09412;pu90pt01;0462)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 1156314

Reference: (Imazethapyr/2AS): Validation of GC Method Sop M1984 for the Determination of Cl182,704 Residues in Field Corn (c3556;09412;pu90pt16;0462)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 1146691

Reference: (Imazethapyr/zas): Residues of CL263,499 in Green Peas (Succulent and Dry) (c-3158;09414;0185;pu-88-md-03(7150);1816)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1146684

Reference: (Imazethapyr/zas): Residues of CL263,499 in Green Peas (Succulent and Dry)(c-3178;09414;0185;pu-88-wi-04(7038);1843)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1146685

Reference: (Imazethapyr/zas): Residues of CL263,499 in Green Peas (Succulent and Dry)(c-3179;09414;0185;pu-88-wa-01(6944);1842)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1226653

Reference: 1985, AC 263,499: Determination of Carbon-14 Labelled AC 263,499 (+)-2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic Acid, Derived Residues in Blood, Eggs and Tissues of Laying Hens. Ac5022;ac5024, Data Numbering Code: 6.2

PMRA Document Number: 1226656

Reference: 1985, CL 263,499: Validation of GC Method M-1586 for the Determination of CL 263,499 Residues in Soybean Plant, Seed and Straw, Data Numbering Code: 7.2.1, 7.2.2

PMRA Document Number: 1469295

Reference: 1985, Herbicide AC 263,499: Carbon-14 Labelled AC 263,499 (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic Acid) Derived Residues in Lactating Goats, Data Numbering Code: 6.2

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PMRA Document Number: 1226651

Reference: 1985, Herbicide AC 263,499: Carbon-14 Labelled AC 263,499 (2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic Acid) Derived Residues In Lactating Goat. Ac5022, Data Numbering Code: 6.2

PMRA Document Number: 1226659

Reference: 1986, CL 263,499 (IPA-AC): Residues of CL 263,499 in Soybean Seed and Straw (Post, PPI, PE; MN, 1984) (c-2630), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1226657

Reference: 1986, CL 263,499 (IPA-AC): Residues of CL263,499 In Soybean Plants, Seed and Straw (Post, PPI, PE; Il, 1984) (c-2630), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1226658

Reference: 1986, CL 263,499 (IPA-AC): Residues Of CL263,499 in Soybean Seed and Straw (Post, PPI, PE; MN, 1984) (c-2630), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1226652

Reference: 1986, Herbicide AC 263, 499: Metabolism of Cabon-14 Labelled AC 263, 499 in Soybeans, Data Numbering Code: 6.3

PMRA Document Number: 1784705

Reference: 1987, Pursuit Herbicide (AC 263,499): Pyridine-6 Carbon-14 AC 263,499-derived Residues in Soybeans after Postemergence Treatment At 0.5 Lb ae/a, Data Numbering Code: 6.3  
Confidential Business Information

PMRA Document Number: 1784719

Reference: 1987, Pursuit Herbicide (AC 263,499): Residual Radioactivity in Corn Grown as a Follow Crop in Soil Containing AC 263,499-derived Residues at Clayton, North Carolina (1986 To 1987), Data Numbering Code: 7.4.3 Confidential Business Information

PMRA Document Number: 1784718

Reference: 1987, Pursuit Herbicide (AC 263,499): Residues of AC 263,499 in Hybrid Pioneer Corn Grown in Soil Treated with Pyridine-6 Carbon-14 Labelled Compound [4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic acid, Data Numbering Code: 7.4.3, Confidential Business Information.

PMRA Document Number: 1469520

Reference: 1987, Confidential Business Information Reference Sheet - Pursuit(r) Herbicide (AC 263499): Residual Radioactivity in Corn Grown as a Follow Crop in Soil Containing AC 263499-derived Residues at Clayton NC (1986-1987), Data Numbering Code: 7.4.3  
Confidential Business Information

PMRA Document Number: 1469515

Reference: 1987, Pursuit - Herbicide (AC 263,499): Residues of AC 263,499 in Hybrid Pioneer Corn Grown in Soil Treated with Pyridine-6 Carbon-14 Labelled Compound (+)-(2-(4,5-dihydro-4-methylethyl) -5-oxo-1H-imidazol-2-yl)-5-ethyl-3-pyridinecarboxylic Acid, Data Numbering Code: 7.4.3.

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PMRA Document Number: 1469518

Reference: 1987, Pursuit (r) Herbicide (AC 263499): Residual Radioactivity in Follow Crops (Wheat and Corn) Grown In Soil Containing AC 263499-derived Residues at Lexington Kentucky (1986-1987), Data Numbering Code: 7.4.3

PMRA Document Number: 796060

Reference: 1987, Pursuit Herbicide (AC 263,499): Metabolism of Carbon-14 AC 263,499 Herbicide in Green Beans Under Field Conditions, Data Numbering Code: 6.3

PMRA Document Number: 796070

Reference: 1987, Pursuit Herbicide (AC 263,499): Pyridine-6 Carbon-14 AC 263,499-derived Residues in Soybeans after Postemergence Treatment At 0.5 Lb ae/a, Data Numbering Code: 6.3

PMRA Document Number: 796055

Reference: 1987, Pursuit Herbicide (AC 263,499): Residual Radioactivity in Corn Grown as a Follow Crop in Soil Containing AC 263,499-derived Residues at Clayton, North Carolina (1986 To 1987), Data Numbering Code: 7.4.3

PMRA Document Number: 796054

Reference: 1987, Pursuit Herbicide (AC 263,499): Residual Radioactivity in Follow Crops (Wheat and Corn) Grown in Soil Containing AC 263,499-derived Residues at Lexington, Kentucky (1986 To 1987), Data Numbering Code: 7.4.3

PMRA Document Number: 796053

Reference: 1987, Pursuit Herbicide (AC 263,499): Residual Radioactivity in Follow Crops (Wheat and Corn) Grown in Soil Containing AC 263,499-derived Residues at Princeton, New Jersey (1986 To 1987), Data Numbering Code: 7.4.3

PMRA Document Number: 796052

Reference: 1987, Pursuit Herbicide (AC 263,499): Residues of AC 263,499 in Hybrid Pioneer Corn Grown in Soil Treated with Pyridine-6 Carbon-14 Labelled Compound [4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-5-ethyl-3-pyridinecarboxylic Acid, Data Numbering Code: 7

PMRA Document Number: 1226367

Reference: 1987, Pursuit Herbicide (CL 263, 499): Freezer Storage Stability of CL 263, 499 Residues in Green Soybean Plant, Seed & Straw (C-2913), Data Numbering Code: 7.3

PMRA Document Number: 1469352

Reference: 1987, Pursuit Herbicide (CL 263,499): Freezer Storage Stability of CL 263,499 Residues in Green Soybean Plant, Seed and Straw (C-2630), Data Numbering Code: 7.3

PMRA Document Number: 1469377

Reference: 1987, Pursuit Herbicide (CL 263,499/as): Residues of CL 263,499 in Soybeans (Post; GA, 1986) (C-2630), Data Numbering Code: 7.4.1

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PMRA Document Number: 1469376

Reference: 1987, Pursuit Herbicide (CL 263,499/as): Residues of CL 263,499 in Soybeans (Post; KY, 1986) (c-2630), Data Numbering Code: 7.4.1

PMRA Document Number: 1469519

Reference: 1987, Pursuit(r) Herbicide (AC 263499): Residual Radioactivity in Corn Grown as a Follow Crop in Soil Containing AC 263499-derived Residues at Clayton NC (1986-1987), Data Numbering Code: 7.4.3

PMRA Document Number: 1146688

Reference: 1988, (Imazethapyr): Validation of GC Method M-1855 for the Determination of CL263,499 Residues in Succulent and Dry Beans and Peas (legume Vegetables), Data Numbering Code: 7.4.2

PMRA Document Number: 1146690

Reference: 1988, (Imazethapyr/zas): Residues of CL263,499 in Green Peas (Succulent and Dry) (c-3150;09414;0185;pu-88-wi-05(7058);1807)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1230960

Reference: 1988, CL 263,499 (Imazethapyr): Validation of GC Method M-1879 for the Determination of CL263,499 Residues In Corn Tissues (Grain, Plant and Fodder), Data Numbering Code: 7.2.1,7.4.2

PMRA Document Number: 1469525

Reference: 1988, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Corn Silage (PPI, Post; II, 1987), Data Numbering Code: 7.4.4

PMRA Document Number: 1469523

Reference: 1988, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Corn Silage, Fodder and Grain (PPI, Post; IA, 1987), Data Numbering Code: 7.4.4

PMRA Document Number: 1469521

Reference: 1988, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Corn Silage, Fodder and Grain (PPI, Post; IN, 1987), Data Numbering Code: 7.4.4

PMRA Document Number: 1469522

Reference: 1988, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Corn Silage, Fodder and Grain (PPI, Post; MN, 1987), Data Numbering Code: 7.4.4

PMRA Document Number: 1469524

Reference: 1988, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Corn Silage, Fodder, and Grain (PPI, Post; MO, 1987), Data Numbering Code: 7.4.4

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PMRA Document Number: 1142236

Reference: 1988, CL 263,499 Imazethapyr: Validation of GC Method M-1855 for the Determination of CL 263,499 Residues in Succulent and Dry Beans and Peas (legume Vegetables), Data Numbering Code: 7.2.1

PMRA Document Number: 1232956

Reference: 1988, GC/MS Confirmatory Method for CL 263,499 Residues in Soybean Seed, Data Numbering Code: 7.2.1

PMRA Document Number: 1784703

Reference: 1989, CL 263,499: Metabolism of Carbon-14 Labelled CL 263,499 in Peanuts, Data Numbering Code: 6.3 Confidential Business Information

PMRA Document Number: 1469343

Reference: 1989, CL 263,499 (Imazethapyr): Validation of GC Method M-1586 for the Determination of CL 263,499 Residues in Soybean Seed, Data Numbering Code: 7.2.3

PMRA Document Number: 796069

Reference: 1989, CL 263,499: Metabolism of Carbon-14 Labelled CL 263,499 in Peanuts, Data Numbering Code: 6.3

PMRA Document Number: 1784704

Reference: 1990, CL 263,499: Carbon-14 CL 263,499-derived Residues in Corn Following Postemergence Treatment At 0.25 Lb ae/a, Data Numbering Code: 6.3 Confidential Business Information

PMRA Document Number: 1784717

Reference: 1990, Imazethapyr Herbicide (CL 263,499): Residues and Metabolism of Carbon-14 Labelled CL 263,499 in Corn, Data Numbering Code: 7.4.2 Confidential Business Information

PMRA Document Number: 1469441

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; PA, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469416

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Field Corn (Post; II, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469414

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288, 511 in Field Corn (PPI; WI, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469417

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PE; II, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469439

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PE; IN, 1989), Data Numbering Code: 7.4.1

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PMRA Document Number: 1469436

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PE; NE, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469499

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (Post; MI, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469492

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (Post; MN, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469507

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (Post; NE, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469494

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (Post; OH, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469498

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (Post; WI, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469434

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; IA, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469428

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; IL, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469415

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; MI, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469437

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; MN, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469429

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; NE, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469440

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Field Corn (PPI; OH, 1989), Data Numbering Code: 7.4.1



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PMRA Document Number: 1469374

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Soybeans (Post; AR, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469371

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Soybeans (Post; GA, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469375

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Soybeans (Post; IL, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469372

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 in Soybeans (Post; OH, 1989), Data Numbering Code: 7.4.1

PMRA Document Number: 1469496

Reference: 1990, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Field Corn (Post; IL, 1989), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 796072

Reference: 1990, CL 263,499: Carbon-14 CL 263,499-derived Residues in Corn Following Postemergence Treatment At 0.25 Lb ae/a, Data Numbering Code: 6.3

PMRA Document Number: 1231266

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PMRA Document Number: 1231243

Reference: 1990, Crop Residue Study - Summary - Imazethapyr Herbicide (CL 263,499): Residues and Metabolism Of Carbon-14 Labelled CL 263,499 in Corn. CL 288,511: Residues in Blood, Eggs and Tissues of Laying Hens Fed with Carbon-14 CL 288,511, Data Numbering Code: 7.1

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Reference: 1990, Imazethapyr (CL 263,499): Characteristics of Imazethapyr and its Hydroxy/hydroxy-glucose Metabolites Through FDA Multiresidue Methods, Data Numbering Code: 7.2.4

PMRA Document Number: 1236825

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PMRA Document Number: 1231254

Reference: 1990, Imazethapyr Herbicide (CL 263,499): Residues and Metabolism of Carbon-14 Labelled CL 263,499 in Corn, Data Numbering Code: 7.4.2

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PMRA Document Number: 1469506

Reference: 1991, CL 263,499 (Imazethapyr): Residues of CL 263,499 and its Metabolites CL 288,511 and CL 182,704 in Field Corn Following A Postemergence Broadcast Application of Pursuit 2AS Herbicide (Post; MO; 1990), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1146333

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Corn Forage, Silage, Grain and Fodder (Post NE 1990), Data Numbering Code: 7.1

PMRA Document Number: 1469526

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 and CL 288,511 in Corn Grain and Processed Grain (Post; NE, 1990), Data Numbering Code: 7.4.5

PMRA Document Number: 1078392

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; NY, 1991), Data Numbering Code: 7.4.1

PMRA Document Number: 1142240

Reference: 1991, Imazethapyr (CL 263,499): Residues of CL 263,499 and CL 228,511 in Soybean Seed, Data Numbering Code: 7.4.2

PMRA Document Number: 1469328

Reference: 1991, Imazethapyr (CL 263,499): Validation of GC Method M2143 for the Determination of CL 263,499 and CL 288,511 (Hydroxy Metabolite) Residues in Corn Meal and Corn Oil, Data Numbering Code: 7.2.1

PMRA Document Number: 1469345

Reference: 1992, CL 263,499 (Imazethapyr Herbicide): Independent Laboratory Validation of GC Method M1981 for the Determination of CL 263,499 and CL 288,511 Residues in Corn Forage, Corn Grain and Corn Fodder by ABC Laboratories, Inc, Data Numbering Code: 7.2.3

PMRA Document Number: 1469420

Reference: 1992, CL 263,499 (Imazethapyr): Residues of CL 263,499 and its Metabolite CL 288,511 in Field Corn Following a Preplant Incorporated Application of Pursuit 2AS (PPI; SD; 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469424

Reference: 1992, CL 263,499 (Imazethapyr): Residues of CL 263,499 and its Metabolite CL 288,511 in Field Corn Following a Preplant Incorporated Application of Pursuit 2AS Herbicide (PPI; IA; 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469418

Reference: 1992, CL 263,499 (Imazethapyr): Residues of CL 263,499 and its Metabolite CL 288,511 in Field Corn Following a Preplant Incorporated Application of Pursuit 2AS Herbicide (PPI; NE; 1990), Data Numbering Code: 7.4.1

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PMRA Document Number: 1469422

Reference: 1992, CL 263,499 (Imazethapyr): Residues of CL 263,499 and its Metabolite CL 288,511 in Field Corn Following a Preplant Incorporated Application of Pursuit 2AS Herbicide, Data Numbering Code: 7.4.1

PMRA Document Number: 1469426

Reference: 1992, CL 263,499 (Imazethapyr): Total Residues of CL 263,499 and CL 288,511 in Corn Forage, Silage, Grain and Fodder (PPI; MO, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1064079

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa (Post; CN, 1990) (Report Amendment #1), Data Numbering Code: 7.4.1

PMRA Document Number: 1469509

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post, NY, 1991), Data Numbering Code: 7.4.1, 7.4.5

PMRA Document Number: 1469513

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; MI, 1991), Data Numbering Code: 7.4.1, 7.4.5

PMRA Document Number: 1469512

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; ND, 1991), Data Numbering Code: 7.4.1, 7.4.5

PMRA Document Number: 1469510

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; WI, 1991), Data Numbering Code: 7.4.1, 7.4.5

PMRA Document Number: 1078393

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; WI, 1991), Data Numbering Code: 7.4.1

PMRA Document Number: 1469364

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Seed (Post; CA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469366

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Seed (Post; WA, 1990), Data Numbering Code: 7.4.1

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PMRA Document Number: 1078396

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511, CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; MI, 1991), Data Numbering Code: 7.4.1

PMRA Document Number: 1078395

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511, CL 182,704 in Alfalfa Green Forage, Hay and Process Meal (Post; ND, 1991), Data Numbering Code: 7.4.1

PMRA Document Number: 1064071

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 In Alfalfa (Post; NY, 1990) (Report Amendment #1), Data Numbering Code: 7.4.1

PMRA Document Number: 1064075

Reference: 1992, CL 288,511: Metabolic Fate of Carbon-14 CL 288,511 in the Milk and Edible Tissues of Lactating Goats, Data Numbering Code: 6.2

PMRA Document Number: 796061

Reference: 1992, CL 288,511: Residues in Blood, Eggs and Tissues of Laying Hens Dosed with Carbon-14 Labelled CL 288,511, Data Numbering Code: 6.2

PMRA Document Number: 1064076

Reference: 1992, CL 288,511: Residues in Blood, Eggs and Tissues of Laying Hens Dosed with Carbon-14 Labeled CL 288,511, Data Numbering Code: 6.2

PMRA Document Number: 1469463

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa (Post; CA, 1990), Data Numbering Code: 7.4.1,7.4.2

PMRA Document Number: 1469483

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa (Post; IA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469475

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa (Post; SD, 1990), Data Numbering Code: 7.4.1, 7.4.2

PMRA Document Number: 1469363

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa Seed (Post; CA, 1990), Data Numbering Code: 7.4.1

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PMRA Document Number: 1469455

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Alfalfa (Post; NY, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469479

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 In Alfalfa (Post; WI, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1146680

Reference: 1992, Summaries: CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,784 in Field Pea Vine, Hay, Straw, Pod and Dry Pod (Post; CN; 1991) American Cyanamid, Data Numbering Code: 7.1

PMRA Document Number: 796071

Reference: 1995, CL 263,499: Carbon-14 CL 263,499-derived Residues in Corn Following Postemergence Treatment at 0.25 lbs ae/a (report Amendment No. 2), Data Numbering Code: 6.3

PMRA Document Number: 1469338

Reference: 1995, CL 263,499: Laboratory Validation of GC Method M2422 For the Determination of CL 263,499 and CL 288,511 Residues in Canola Oil and Meal by Huntingdon Analytical Services, Inc, Data Numbering Code: 7.2.1, 7.2.2, 7.2.3

PMRA Document Number: 1469391

Reference: 1995, Crop Rate of Dissipation Study for CL 263,499 in Canola in Saskatchewan, Canada (CN, 1993), Data Numbering Code: 7.4.1

PMRA Document Number: 921928

Reference: 1996, Imazethapyr (CL 263,499): Freezer Stability of Residues of CL 263,499 and Its Metabolites, CL 288,511 and CL 182,704, in Corn Forage, Grain and Fodder, Data Numbering Code: 7.3

PMRA Document Number: 1469445

Reference: 2001, CL 263,499 (Imazethapyr): Residues of CL 263499 in Canola after a Single Post-Emergence Application of Pursuit 70 DG Herbicide 1999 Trials Conducted in Manitoba and Saskatchewan, Canada, Data Numbering Code: 7.4.1

PMRA Document Number: 1469446

Reference: 2001, CL 263499 (Imazethapyr): Residues of CL 263499 in Imazethapyr-tolerant Canola after a Single Post-emergence Application of Pursuit 2 as Herbicide from a 1999 Trial Conducted in Manitoba Canada, Data Numbering Code: 7.4.1

PMRA Document Number: 1469342

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PMRA Document Number: 921925

Reference: 2002, Waiver Request for the Exemption from a Freezer Storage Stability Study for Odyssey Herbicide in Lentils, Data Numbering Code: 7.3

PMRA Document Number: 796047

Reference: 2003, Independent Method Validation of Basf Analytical Method M 3519 (draft Dated 25 July 2002) Entitled "Bas 720 H (CL 299263) and Bas 685 H (CL 263499): LC/MS Determinative and LC/MC/MS Confirmatory Method for the Determination and Confirmation of Bas 7

PMRA Document Number: 921920

Reference: 2003, Independent Method Validation of Basf Analytical Method M 3519 (Draft Dated 25-July-2002) Entitled "Bas 720 H (CL 299263) and Bas 685 H (CL 263499): LC/MS/determinative and LC/MS/MS Confirmatory Method for the Determination and Confirmation of Bas 7

PMRA Document Number: 796068

Reference: 2003, Magnitude of Imazethaphyr and its Metabolite Residues (CL 288511 and CL 182704) in Imidazolinone-tolerant Rice Grain and Straw, Data Numbering Code: 7.4.1

PMRA Document Number: 921915

Reference: 2003, Metabolism/Toxicokinetics Summaries, Data Numbering Code: 6.1

PMRA Document Number: 796050

Reference: 2003, Method Validation of Basf Analytical Method D0303 Entitled "Method for the Determination of Bas 720 H (CL 299263) and its Metabolite CL 263284 in Bovine Matrices Using LC/MS/MS", Data Numbering Code: 7.2.2

PMRA Document Number: 921917

Reference: 2003, Waiver Request for the Exemption from a Metabolism Study for Imidazolinone Herbicides in Clearfield Lentils, Data Numbering Code: 6.3

PMRA Document Number: 796056

Reference: 2004, a Meat and Milk Magnitude of the Residue Study with CL 288511 (Reg. No. 4110971); a Metabolite of Bas 685 H, Imazethapyr) in Lactating Dairy Cows, Data Numbering Code: 7.3, 7.5.1

PMRA Document Number: 796051

Reference: 2004, Independent Laboratory Validation (ILV) of Basf Analytical Method M3512 Used for the Determination of Bas 685 H (Imazethapyr) and CL 288511 (Metabolite of Bas 685 H) in Animal Matrices, Data Numbering Code: 7.2.3

PMRA Document Number: 796067

Reference: 2004, Magnitude of Bas 720 H and Bas 685 H and their Related Metabolite Residues in Lentils after Treatment with Bas 724 H, Data Numbering Code: 7.4.1

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PMRA Document Number: 796066

Reference: 2004, Method Validation of Basf Analytical Method M 3519 (Draft Dated 25-July-2002) Entitled "Bas 720 H (CL 299263): LC/MS Determinative and LC/MS/MS Confirmatory Method for the Determination and Confirmation of Bas 720 H, CL 263284, CL 189215, CL 312622,

PMRA Document Number: 1373071

Reference: 2004, Minor Use Project Imazethapyr on Peas, Ammended Report March 2004, Data Numbering Code: 7.1

PMRA Document Number: 796048

Reference: 2004, Validation of Basf Analytical Method M3512 Entitled "Bas 685 H (Imazethapyr): LC/MS Determination and LC/MS/MS Confirmatory Method for Bas 685 H and CL 288511 (Metabolite of Bas 685 H) in Crawfish" In Matrices of Animal Origin, Data Numbering Code: 7.2.1, 7.2.2

PMRA Document Number: 1233298

Reference: 5.3 Crop Residue Data, Analysis of Canadian Soybean Samples, Data Numbering Code: 7.4.2

PMRA Document Number: 1146692

Reference: AC 263,499 (Proposed Common Name Imazethapyr) Residues in Peas (2131;9533/86090/83)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1784706

Reference: Imazethapyr Herbicide (CL 263,499): Residues and Metabolism of Carbon-14 Labelled CL 263,499 in Corn (PD-M Volume 27-9;09415;0462)(Pursuit), Data Numbering Code: 6.3 Confidential Business Information

PMRA Document Number: 1784707

Reference: Metabolism Of Carbon-14 Labelled CL263,499 in Peas Under Field Conditions (Met-93-004;m88p499pt1;0951;0187)(Pursuit), Data Numbering Code: 6.3 Confidential Business Information

PMRA Document Number: 1146337

Reference: CL 263,499 (Imazethapyr): Dissipation of CL 263,499, CL 288,511 and CL 182,704 in Pioneer Corn Treated with a Post Application of Pursuit 240as Herbicide (75 and 150g ae/hectare Per Application) (Ontario 1992) (res 93-160;0952;8012)(Pursuit), Data Numbering Code: 7.4.

PMRA Document Number: 1146335

Reference: CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499 CL 288,511 and CL 182,704 in Corn Forage, Silage, Grain and Fodder (c3681;09418;7585;0462)(Pursuit), Data Numbering Code: 7.4.6

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PMRA Document Number: 1146334

Reference: CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Corn Forage, Silage Grain and Fodder (c3680;09418;7516;0462)(Pursuit), Data Numbering Code: 7.4.6

PMRA Document Number: 1146336

Reference: CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in Corn Forage, Silage, Grain and Fodder (c3682;09418;7591;0462)(Pursuit), Data Numbering Code: 7.4.6

PMRA Document Number: 1169761

Reference: CL 299,263 and CL 263,499: Residues of CL 299,263, CL 263,284, CL 263,499 and CL 288,511 in Field Pea Forage (Res 96-110;0952)(Odyssey) Final Report, Data Numbering Code: 7.4.2

PMRA Document Number: 1159927

Reference: CL263,499 (Imazethapyr): Dissipation of CL263,499 in Field Peas Treated with a Post Application of Pursuit 240as Herbicide (50 and 100 g/Hectare Per Application)(Manitoba-1992)(Res93-138;0952;pu92cn03;8014;0185), Data Numbering Code: 7.4.2

PMRA Document Number: 1159902

Reference: CL263,499(Imazethapyr/240as): Residues of CL263,499;cl288,511 and Cl182,704 in Alfalfa Forage and Hay (Post;cn;1992)(res93-166;0952;pu92cn04;8011;0533)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1159903

Reference: CL263,499(Imazethapyr/2AS): Residues of CL263,499; CL288,511 and Cl182,704 in Alfalfa Forage and Hay (Post; CN; 1992)(res93-167;0952;pu92cn05;8013;0533)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1159904

Reference: CL263,499(Imazethapyr/2AS): Validation of GC Method M2020 for the Determination of CL263,499 and CL288,511 Residues in Alfalfa Forage, Hay and Seed (c3539;0948;pu90pt14;0184;has309/9-26)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1159905

Reference: CL263,499(Imazethapyr/2AS): Validation of GC Method M2021 for the Determination of Cl182,704 Residues in Alfalfa Forage, Hay and Seed (c3540;0948;pu90pt15;0184;has309/9-27)(Pursuit), Data Numbering Code: 7.4.2

PMRA Document Number: 1159063

Reference: CL288,511: Carbon14 CL288,511-derived Residues in Blood, Milk and Edible Tissues of Lactating Goats (Pd-m Volume 27-20;m88a511pt2;89jun26;09415;l-2361;0184)(Pursuit), Data Numbering Code: 7.5



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PMRA Document Number: 1159907

Reference: CL288,511: Determination of [14C]cl288,511-Derived Residues in Tissues and Milk of the Lactating Dairy Cow (met93-028;m93a511pt1;0951)(Pursuit), Data Numbering Code: 7.5

PMRA Document Number: 1146332

Reference: Imazethapyr Herbicide (CL 263,499): Residues and Metabolism of Carbon-14 Labelled CL 263,499 in Corn (Pd-m Volume 27-9;09415;0462)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 1156317

Reference: Imazethapyr: Validation of GC Method M-2186 for the Determination of CL182,704 Residues in Pea Vine, Hay, Succulent Pod, Straw and Dry Pea (c3787;0952;pu91pt06;0185)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 1156316

Reference: Imazethapyr: Validation of GC Method M-2187 for the Determination of CL263,499 and CL288,511 (Hydroxy Metabolite) Residues in Pea Vine, Hay, Succulent Pod, Straw and Dry Pea (c3786;0952;pu91pt04;0185)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 1146679

Reference: Metabolism of Carbon-14 Labelled CL263,499 in Peas Under Field Conditions (Met-93-004;m88p499pt1;0951;0187)(Pursuit), Data Numbering Code: 6.3

PMRA Document Number: 796064

Reference: Metabolism of Imidazolinone Herbicides in Tebonnet and Mutant Rice Lines, Data Numbering Code: 6.4

PMRA Document Number: 1226365

Reference: Pursuit (CL 263, 499/ipa-as): Residues of CL 263, 499 in Soybean Green Plant, Soybean Dry Plant & Soybean Seed (PE; Ont, 1984) (c-2851), Data Numbering Code: 7.4.2

PMRA Document Number: 1226366

Reference: Pursuit (CL 263, 499/ipa-as): Residues of CL 263, 499 in Soybean Green Plant, Soybean Dry Plant & Soybean Seed (Post; Ont, 1984) (c-2846), Data Numbering Code: 7.4.2

PMRA Document Number: 1226364

Reference: Pursuit (CL 263, 499/ipa-as): Residues of CL 263, 499 in Soybean Seed (PE; Ont, 1984) (c-2822.1), Data Numbering Code: 7.4.2

PMRA Document Number: 1226362

Reference: Pursuit (CL 263, 499/ipa-as): Residues of CL 263, 499 in Soybean Seed (PE; Ont, 1985) (c-2823.1), Data Numbering Code: 7.4.2

PMRA Document Number: 1226363

Reference: Pursuit (CL 263, 499/ipa-as): Residues of CL 263, 499 in Soybean Seed (Post; Ont, 1984) (c-2826.1), Data Numbering Code: 7.4.2

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PMRA Document Number: 1161080

Reference: Pursuit (CL 263,499): Residues of CL 263,499 and CL 288,511 in Canola Seed (Res 95-112;0952) Final Report (Pursuit for Western Canada)(Residue Work to Adjust PHI To 70 Days for Canola), Data Numbering Code: 7.4.2

PMRA Document Number: 1130296

Reference: Summaries Pursuit Herbicide (AC 263,499): Study of the Absorption, Excretion and Metabolism in Rats Receiving an Oral Dose of About 1,000 mg/kg Carbon-14 Labelled AC 263,499, Pyridine-6 Carbon-14 AC 263,499-Driven Residues in Soybeans after Postemergence,

PMRA Document Number: 1230959

Reference: Summary - CL 263,499 (Imazethapyr): Validation of GC Method M-1879 for the Determination of CL 263,499 Residues in Corn Tissues (Grain, Plant and Fodder), Data Numbering Code: 7.1

PMRA Document Number: 1182981

Reference: Table I: Summary of CL 263,499 Residues in Dry Beans (Pinto Beans) and Navy Beans, Data Numbering Code: 7.1

PMRA Document Number: 1056105

Reference: Tables - Summary of Residue Data for Legume Vegetable Group Except Soybean, Summary of Residues in Peas, Summary of Residues in Soybeans, Data Numbering Code: 7.2.1

PMRA Document Number: 921926

Reference: 1991, Freezer Stability of Residues of CL 263,499 and its Metabolites, CL 288,511 and CL 182,704, in Peanuts (Hulls and Nutmeat), Data Numbering Code: 7.3

PMRA Document Number: 921918

Reference: 2003. Food, Feed and Tobacco Summaries, Data Numbering Code: 7.1

PMRA Document Number: 1064078

Reference: 1995, Imazethapyr (CL 263,499): Freezer Stability of Residues of CL 243,499 and its Metabolites, CL 288,511 and CL 182,704 in Alfalfa Forage and Hay, Data Numbering Code: 7.3

PMRA Document Number: 921929

Reference: 2000, CL 263499 (Imazethapyr): Freezer Storage Stability of Residues of CL 263499 and Metabolites CL 288511 and CL 182704 in Rice Straw and Grain, Data Numbering Code: 7.3

PMRA Document Number: 1146484

Reference: CL 263,499 (Imazethapyr/2AS): Residues of CL263,499 and CL 288,511 in Allelix Canola Seed (RES93-186;0952;PU92CN06;8015;0685) (Pursuit for Western Canada), Data Numbering Code: 7.4.2

PMRA Document Number: 1146486

Reference: CL 263499 (Imazethapyr/2AS) Residues of CL 263,499 and CL 288,511 in Allelix Canola Seed (RES93-187;0952;PU92cn07;8045;0533)(Pursuit For Western Canada), Data Numbering Code: 7.4.2

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PMRA Document Number: 1469369

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa seed (POST; WA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1146483

Reference: Imazethapyr (CL263,499): Metabolism of Carbon-14 Labelled CL 263,499 in Field Grown Canola (MET93-023;SC920084;M92P499NDL) Final Report (Pursuit for Western Canada), Data Numbering Code: 6.3

PMRA Document Number: 1469478

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa (POST; WI, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469361

Reference: 1992, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa seed (POST; CA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469365

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa seed (POST; CA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469368

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa seed (POST; WA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469370

Reference: 1992, Report Amendment #1; CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa seed (POST; WA, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469454

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa (POST; NY, 1990), Data Numbering Code: 7.4.1

PMRA Document Number: 1469462

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa (POST; CA, 1990), Data Numbering Code: 7.4.1, 7.4.2

PMRA Document Number: 1469474

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa (POST; SD, 1990), Data Numbering Code: 7.4.1, 7.4.2

PMRA Document Number: 1469482

Reference: 1991, CL 263,499 (Imazethapyr/2AS): Residues of CL 263,499, CL 288,511 and CL 182,704 in alfalfa (POST; IA, 1990), Data Numbering Code: 7.4.1

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PMRA Document Number: 796073

Reference: 1990, CL 263,499: Carbon-14 CL 263,499-Derived Residues in Corn Following Postemergence Treatment at 0.25 lbs ae/A, Data Numbering Code: 6.3

### **Additional Information Considered**

#### **Published Information**

PMRA Document Number: 1685251

Reference: Moyer J.R., and Esau R., (1996), Imidazolinone Herbicide Effects on Following Rotational Crops in Southern Alberta, *Weed Technology*, Vol. 10, pp 100-106. Data Numbering Code: 7.4.4.

PMRA Document Number: 1685252

Reference: Roberts T.R., Hutson D. H., Jewess P. J., (1998), *Metabolic Pathways of Agrochemicals: Herbicides and Plant Growth Regulators*, Royal Society of Chemistry (Great Britain), Information Services, pp 372-376. Data Numbering Code: 6.1.

### **E. Information Considered for the Environmental Risk Assessment**

#### **Studies/Info Provided by the Applicant/Registrant (Unpublished)**

PMRA Document Number: 1130334

Reference: Summaries - Determination of Ambient Vapor Pressure of CL 263,499, Soil Photolysis, Photolysis of Pyridine Ring-6 Carbon-14 Labelled AC 263, 499 in Aqueous Media, A Laboratory Anaerobic Soil Metabolism Study in Sandy Loam Soil, Validation of Method M-1719.

PMRA Document Number: 1146694

Reference: Summaries: CL263,499 (Imazethapyr)(Pursuit), Data Numbering Code: 8.1.

PMRA Document Number: 1168682

Reference: Supplemental Information Provided by Cyc in Response to P.Delorme (EAD) Request for Additional Information of July 23 1996 [Imazamox (AC 299,263)/Odyssey (Imazamox + Imazethapyr)](Attachments + Correspondence Together), Data Numbering Code: 8.1.

PMRA Document Number: 1226748

Reference: Imazethapyr (CL 263,499) Summaries: Residues of CL 263, 499 in Soils. 2 Field Studies in Ontario Evaluated Soil Dissipation and Leaching Potential, Data Numbering Code: 8.1.

PMRA Document Number: 1232423

Reference: 1990, Summaries - Aerobic and Anaerobic Aquatic Metabolism of 14C-AC 263,499, the Active Ingredient in Pursuit Herbicide, Data Numbering Code: 8.1.

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PMRA Document Number: 1130264

Reference: 1986, Determination of Ambient Vapor Pressure of CL 263,499. Data Numbering Code: 8.2.1.

PMRA Document Number: 1130265

Reference: 1987, Pursuit Herbicide (AC 263,499): Soil Photolysis, Data Numbering Code: 8.2.1.

PMRA Document Number: 1130266

Reference: 1987, Pursuit Herbicide (AC 263,499): Photolysis of Pyridine Ring-6 Carbon-14 Labeled AC 263,499 in Aqueous Media, Data Numbering Code: 8.2.1.

PMRA Document Number: 1226664

Reference: 1984, AC 263,499: Determination of the Partition Coefficient in N-Octanol/Water Systems, Data Numbering Code: 8.2.1.

PMRA Document Number: 1226731

Reference: 1986, Herbicide AC 263,499: The Determination of Ambient Vapor Pressure of CL 263,499, Data Numbering Code: 8.2.1.

PMRA Document Number: 1130268

Reference: 1987, Pursuit Herbicide (CL 263,499): Validation of Method M-1719 for the Determination of CL 263,499 Residues in Soil, Data Numbering Code: 8.2.2.1.

PMRA Document Number: 1130279

Reference: 1987, Pursuit Herbicide (CL 263,499): Freezer Storage Stability of CL 263,499 Residues in Fortified Samples of Soils (C-2561), Data Numbering Code: 8.2.2.1, 8.5.1.

PMRA Document Number: 1130267

Reference: 1987, Pursuit Herbicide (AC 263,499): A Laboratory Anaerobic Soil Metabolism Study of Pyridine Ring-6 Carbon-14 Labelled AC 263,499 in Sandy Loam Soil., Data Numbering Code: 8.2.3.1.

PMRA Document Number: 1226666

Reference: 1985, Herbicide (CL 263,499): Validation of GC Method M-1501 for the Determination of CL 263,499 Residues in Soil, Data Numbering Code: 8.2.3.1.

PMRA Document Number: 1226746

Reference: 1987, Pursuit Herbicide (AC 263,499): A Laboratory Aerobic Soil Metabolism Study of Pyridine Ring-6 Carbon-14 Labelled AC263,499 in Sandy Loam Soil, Data Numbering Code: 8.2.3.1.

PMRA Document Number: 1231904

Reference: AC 263,499 (Pursuit) Anaerobic Aquatic Metabolism (N-162-3) Revised November 22, 1988, Data Numbering Code: 8.2.3.1.

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PMRA Document Number: 1226662

Reference: 1984, AC 263,499: The Hydrolysis of Carbon-14 Labelled AC 263,499 in Pond Water. The Hydrolysis of Carbon-14 Labelled AC 263,499 in Buffered Aqueous Solution. Determination of the Partition Coefficient in N-Octanol/Water Systems. Soil Adsorption and Desorption.

PMRA Document Number: 1231903

Reference: AC-263,499 (Pursuit) Aerobic Aquatic Metabolism (N-162-4) Revised November 22, 1988, Data Numbering Code: 8.2.3.5.2.

PMRA Document Number: 1232424

Reference: 1989, Aerobic Aquatic Metabolism of 14C-AC 263,499, the Active Ingredient in Pursuit Herbicide, ABC37642, Data Numbering Code: 8.2.3.5.2.

PMRA Document Number: 1232425

Reference: 1989, Anaerobic Aquatic Metabolism of 14C-AC 263,499, The Active Ingredient in Purusuit Herbicide, ABC 37641, Data Numbering Code: 8.2.3.5.6.

PMRA Document Number: 1130292

Reference: 1989, Imazethapyr (AC 263,499): Soil Thin-Layer Chromatography, E-89-11, Data Numbering Code: 8.2.4.1.

PMRA Document Number: 1226665

Reference: 1985, AC 263, 499: Soil Adsorption and Desorption of AC 263,499 and a Laboratory Aerobic Soil Metabolism Study of Pyridine Ring-6 Carbon-14 Labelled AC 263,499 in Sandy Loam Soil, Data Numbering Code: 8.2.4.1.

PMRA Document Number: 1130291

Reference: 1989, Imazethapyr (AC 263,499): Soil Thin-Layer Chromatography. Imazethapyr (CL 263,499/240as): Residues of CL 263,499 in Soil (Sandy Loam; Georgetown, Ontario 1987), Data Numbering Code: 8.2.4.4.

PMRA Document Number: 1168338

Reference: CL 299,263: Soil Dissipation Study with CL 299,263 in Michigan. (MI;1994).(Res96-019;0952;Xp94mi01;8272). (Odyssey). American Cyanamid Company, Princeton, New Jersey. Study Finalized: August 15.

PMRA Document Number: 1168349

Reference: CL 299,263: Soil Dissipation Study with CL 299,263 in Iowa.(IA;1993).(Res95-176;0952;Xp93ia01;8100).(Odyssey). Dated: November 27, 1995. American Cyanamid Company, Princeton, New Jersey. Data Numbering Code: 8.3.2.2.

PMRA Document Number: 1168360

Reference: CL 299,263: Soil Dissipation Study with CL 299,263 in North Dakota. (ND;1992).(Res94-155;0952;Xp92nd01;7992;Cy-102).(Odyssey). Report Issued: August 17, 1995.

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PMRA Document Number: 1146695

Reference: (Imazethapyr): Residues of CL 263,499 in Soil Located in Southern Saskatchewan (C3790;09418;Pu90cn03;7569;0532)(Pursuit), Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1146696

Reference: (Imazethapyr): Residues of CL 263,499 in soil Located in Central Saskatchewan (C3791;09418;Pu90cn04;7619;0532)(Pursuit), Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1146698

Reference: (Imazethapyr): Residues of CL 263,499 in Soil (Alberta) (C3728;0952; Pu90cn02;7561;0532)(Pursuit), Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1166286

Reference: Outdoor Lysimeter Study of Pendimethalin - Fate and Mobility Study of Herbicide Over 4 Years. Final Report (Cya-O4/7-11; 32401-922-003;Pn-620-027) (October 1989 - September 1994). Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1234046

Reference: mazethapyr (CL 263,499/240as): Residues of CL 263,499 in Soil (PPI; Sandy Loam; Georgetown, Ontario 1988) (C3315), Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1237493

Reference: Residues of CL 263,499 (Imazethapyr) in Soil (PPI: Clay Loam; Georgetown, Ontario 1988) (C3316), Data Numbering Code: 8.3.2.3.

PMRA Document Number: 1190729

Reference: Material Safety Data Sheet, Prepared March 30, 1996 (PCP 22644;16255b) [Odyssey Water Dispersable Herbicide;Subn.#99-0772; Regn.#25111;Submitted April 13, 1999;Volume 1 of 1 Summary], Data Numbering Code: 8.4.1.

PMRA Document Number: 1226206

Reference: Acute Toxicity of AC 263, 499 To *Selenastrum Capricornutum* Printz, 36802, Data Numbering Code: 9.2.1.

PMRA Document Number: 1226685

Reference: Summaries: Acute Toxicity of AC 263, 499 To Bluegill Sunfish, Channel Catfish, Rainbow Trout, *Daphnia magna*, Data Numbering Code: 9.2.1, 9.5.1.

PMRA Document Number: 1226674

Reference: Summaries: Acute Toxicity of AC 263, 499 to Bluegill Sunfish, Channel Catfish, Rainbow Trout, *Daphnia magna*, Data Numbering Code: 9.2.1, 9.5.1.

PMRA Document Number: 1226752

Reference: 1987, Uptake, Depuration and Bioconcentration of 14C-AC 263,499 By Bluegill Sunfish (*Lepomis macrochirus*). Subacute Toxicity to Fish and Other Aquatic Organisms, 34643, Data Numbering Code: 9.2.1, 9.5.1.

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PMRA Document Number: 1130294

Reference: 1988, The Acute Toxicity (LC50) of AC 263,499 to the Earthworm, CYD 470/881275, Data Numbering Code: 9.2.3.1.

PMRA Document Number: 1226686

Reference: 1985, Summary of Bee Adult Toxicity Dusting Test, AC 263,499, Summary Sheet No. 770, Data Numbering Code: 9.2.4.1.

PMRA Document Number: 1226687

Reference: 1985, Assessment of the Effects of the Herbicide AC 263, 499 on Soil Microorganisms, Data Numbering Code: 9.2.7.

PMRA Document Number: 1226207

Reference: 1988, Acute Toxicity of AC 263, 499 to *Selenastrum Capricornutum* Printz, 36802, Data Numbering Code: 9.3.1, 9.5.2.1.

PMRA Document Number: 1226682

Reference: 1985, Acute Toxicity of AC 263, 499 to *Daphnia magna*, 33059, Data Numbering Code: 9.3.1, 9.5.2.1.

PMRA Document Number: 1226698

Reference: 1987, Chronic Toxicity of 14C-AC 263, 499 to *Daphnia magna* Under Flow-Through Test Conditions, 35076, Data Numbering Code: 9.3.1, 9.5.5.

PMRA Document Number: 1226678

Reference: 1985, Acute Toxicity of AC 263, 499 to Channel Catfish (*Ictalurus punctatus*), 33058, Data Numbering Code: 9.5.2.1.

PMRA Document Number: 1226680

Reference: 1985, Acute Toxicity of AC 263, 499 to Rainbow Trout (*Salmo Gairdneri*), 33057, Data Numbering Code: 9.5.2.1.

PMRA Document Number: 1226753

Reference: 1987, Early Life Stage Toxicity of 14C-AC 263, 499 to Fathead Minnow in a Flow-Through System, 35075, Data Numbering Code: 9.5.2.1.

PMRA Document Number: 1226676

Reference: Static Bioassay Procedure for Determining the Acute Toxicity of Chemical Substances to Freshwater Fish (Bluegill Sunfish), 33056, Data Numbering Code: 9.5.2.1, 9.5.5.

PMRA Document Number: 1226679

Reference: 1985, Static Bioassay Procedure for Determining the Acute Toxicity of Chemical Substances to Freshwater Fish (Channel Catfish), 33058, Data Numbering Code: 9.5.2.1, 9.5.5.

PMRA Document Number: 1226681

Reference: 1985, Static Bioassay Procedure for Determining the Acute Toxicity of Chemical Substances to Freshwater Fish (Rainbow Trout), 33057, Data Numbering Code: 9.5.2.1, 9.5.5.



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PMRA Document Number: 1226675

Reference: 1985, Acute Toxicity of AC 263,499 to Bluegill Sunfish, Data Numbering Code: 9.5.2.2.

PMRA Document Number: 1226754

Reference: Uptake, Depuration & Bioconcentration FF 14C-AC 263, 499 by Bluegill Sunfish, 34643, Data Numbering Code: 9.5.5.

PMRA Document Number: 1130281

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