



# **US Environmental Protection Agency Office of Pesticide Programs**

## **BIOPESTICIDES REGISTRATION ACTION DOCUMENT**

**Glutens, corn (Corn Gluten Meal) (PC Code 100137)**

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(PC Code 100137)**

**U.S. Environmental Protection Agency  
Office of Pesticide Programs  
Biopesticides and Pollution Prevention Division  
Corn Gluten Meal  
(PC Code 100137)**

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## **I. EXECUTIVE SUMMARY**

The technical grade active ingredient (TGAI) glutens (corn), also known as corn gluten meal, consists mainly of zein and gluten (mixture of water-insoluble proteins that occurs in most cereal grains); and to a lesser degree, fat, and fiber. The active ingredient is a by-product of the wet milling of corn for starch or as a by-product during the conversion of the starch in whole or various fractions of dry milled corn to corn syrups. Corn gluten meal is the active ingredient in the end-use product (EP) WOW Plus (containing 78% a.i. by weight). The EP is intended for non-food residential use as a pre-emergent herbicide controlling grassy and broad-leaved weeds on lawns.

The Agency is making the risk management decision regarding the registration of corn gluten meal, based on 1) nontoxic mode of action, 2) under 40 CFR §180.1164, is exempt from the requirement of a tolerance on food when used as a herbicide; 3) under 40 CFR §180.1001 (d) corn gluten meal is exempt from the requirement of a tolerance when used as an attractant on crops, and 4) the active ingredient is also considered GRAS (Generally Recognized As Safe) by FDA under 21 CFR §184.1321.

Guideline toxicity and nontarget organism studies were not submitted in support of the registrant's application. In lieu of studies, the registrant requested data waivers from the requirements for all guideline studies and submitted a compendium of information sources—regarding the use of corn gluten meal as an animal feed supplement—in support of the data waivers. Therefore, the Agency believes that products containing corn gluten meal, can be used without causing unreasonable adverse effects to humans or the environment.

Based on the negligible risk concerns and a prior history of safe use as a pesticide, corn gluten meal meets the criteria as specified in §3(c)(5) of FIFRA as amended, and is thus eligible for unconditional registration. No additional data are needed.

## II. OVERVIEW

### A. ACTIVE INGREDIENT OVERVIEW

<b>Common Name:</b>	Corn Gluten Meal
<b>Chemical Name:</b>	Glutens, corn
<b>Chemical Family:</b>	(protein, fat, fiber)
<b>Trade and Other Names:</b>	WOW Plus
<b>CAS Registry Number:</b>	66071-96-3
<b>OPP Chemical Code:</b>	100137
<b>Basic Manufacturer:</b>	Gardens Alive, Inc. 5100 Schenley Place Lawrenceburg, IN 47025

### B. USE PROFILE

The following is information on the proposed uses with an overview of use sites and application methods.

**Type of Pesticide:** Pre-emergent herbicide

**Use Sites:** The technical grade active ingredient (TGAI), corn gluten meal, will be used for incorporation into end-use products intended for residential use on lawns.

**Target Pests:** crabgrass, creeping bentgrass, smart weed, dandelions, redroot bigweed, purslane, lambs quarter, foxtail, barnyard grass, and Bermuda grass.

**Formulation Types:** Granular

**Method and Rates of Application:** The end use product will be applied by spreaders (drop spreader, broadcast spreader) at a rate of 10 to 20 pounds of formulated product per 1,000 square feet.

**Timing:** Applications are made to established lawns (not newly seeded areas) in the spring or fall. The fall application inhibits germination and establishment of weed species in advance of the next yearly growing season.

**Use Practice Limitations:** The TGAI is only approved for non-food uses. There are no reentry restrictions.

### C. DATA REQUIREMENTS

The Biopesticides and Pollution Prevention Division (BPPD) reviewed data requirements for granting this registration under Section 3(c)(5) of FIFRA. Product analysis data requirements are adequately satisfied. Mammalian toxicology and ecological effects data requirements for corn gluten meal were fulfilled via data waivers. As a result of the data waivers, exposure assessments for this active ingredient were not performed and thus significant human health or ecological effects issues did not arise in Tier I studies. Therefore, neither additional toxicological studies nor environmental fate and groundwater (Tier II) testing were triggered and neither is required. Since Tier II studies were not triggered, the Agency foresees no unreasonable adverse effects to human health and the environment from the use of this herbicide and no additional data are required.

### D. REGULATORY HISTORY

On April 5, 2001, the Agency received an application from Gardens Alive, Inc. to register corn gluten meal as the active ingredient in an end-use product (EP) containing 78 % corn gluten meal. A notice of receipt of the application for registration for corn gluten meal as new active ingredient was published in the Federal Register on March 1, 2002 (67 FR 41), with a 30 day comment period. No comments were received as a result of this publication.

Gardens Alive, Inc. previously submitted a registration application, on July 2, 1993, in support of registration for corn gluten meal as a pre-emergent weed control for lawns. At that time, Gardens Alive, Inc. submitted a request for biochemical classification. Subsequently, on August 20, 1993, the Agency classified the active ingredient as a biochemical. The classification was based on the natural occurrence of the active ingredient and its nontoxic mode of action. It was further recommended that corn gluten meal uses on turf and lawns (but not food crops) be exempted from FIFRA data requirements as a pesticide under 40 CFR §152.25 (now 180.1164), subsequently all guideline data requirements for toxicity, nontarget organisms, environmental fate, and groundwater were waived. On May 24, 1994, an end-use product, A-Maizing Lawn (EPA Reg. No. 56872-1, containing 100% corn gluten meal as its active ingredient), was approved for registration. Due to a request by the registrant, the registration of A-Maizing Lawn was cancelled on September 7, 1997. Therefore, the current registration is for an EP that contains a new active ingredient.



**E. CLASSIFICATION**

The Biochemical Classification Committee, in 1993, classified corn gluten meal as a biochemical. This determination is based on the natural occurrence of the active ingredient and its nontoxic mode of action.

**F. FOOD CLEARANCES/TOLERANCES**

The present registration application is for non-food use. On November 12, 1997, the Agency published a Federal Register Notice (62 FR 218) establishing an exemption from the requirement of a tolerance for residues of corn gluten when used as an herbicide in or on all food commodities when applied in accordance with good agricultural practice. The exemption from the requirement of a tolerance are listed in 40 CFR 180.1001 and 180.1164.

### **III. SCIENCE ASSESSMENT**

#### **A. PHYSICAL/CHEMICAL PROPERTIES ASSESSMENT**

All product chemistry data requirements for the technical grade active ingredient (TGAI) and the end-use product (EP) are satisfied.

##### **1. Product Identity and Mode of Action**

###### **a. Product Identity:**

The new active ingredient, corn gluten meal, will be formulated as an EP for use as a pre-emergent herbicide. The TGAI as a meal is golden yellow in color or formulated as a granular product is light brown with a slight cereal odor.

The product chemistry data submitted by the registrant including manufacturing process, discussion of formation of impurities, certified ingredients limits, analytical method, and physical chemical properties of the EP satisfies the requirement for product identity.

###### **b. Mode of Action:**

The mode of action of corn gluten meal is to prevent the normal development of roots from sprouting seeds. The TGAI does not kill directly but causes seedlings with less than normal root systems to succumb to dehydration when exposed to drought stress. The plant growth regulator activity is only found against seedlings. Field trials indicate corn gluten meal has no adverse effect on established plants such as Kentucky bluegrass and strawberry. The EP will be marketed under the trade name WOW Plus and is a selective herbicide used to control the following annual grasses and broad-leaved plants: crabgrass, creeping bentgrass, smart weed, dandelions, redroot bigweed, purslane, lambsquarter, foxtail, barnyard grass, Bermuda grass.

##### **2. Physical And Chemical Properties Assessment**

The physical and chemical characteristics of the TGAI (and EP) were submitted in support registration. These are summarized in Table I.

**Table I. Product Chemistry Data:**

<b>GUIDELINE NO.</b>	<b>STUDY</b>	<b>RESULTS</b>	<b>MRID NO.</b>
<b>Group A</b>	<b>Product Identity, Composition, and Analysis Test Guidelines</b>		
830.1550 to 830.1670	Product identity; Manufacturing process; Discussion of formulation and unintentional ingredients	Submitted data satisfies the data requirements for product identity, manufacturing process, and discussion of formation of impurities	428499-01
830.1700	Analysis of samples	Submitted data satisfy the data requirements for analysis of samples	428499-02
830.1750	Certified limits	Limits listed in the CSF are adequate / Acceptable	454070-02
830.1800	Analytical Method	Acceptable	428499-01
<b>Group B</b>	<b>Physical / Chemical Properties Test Guidelines</b>		
830.6302	Color	Gold (EP: Light brown at room temperature)Light	
830.6303	Physical State	Solid powder (EP: Granular solid at 20°C)	
830.6304	Odor	Cereal odor	
830.6313	Stability	Acceptable	
830.6315	Flammability	Not Applicable	
830.6317	Storage stability	To be submitted on Agency request	
830.6319	Miscibility	Not Applicable	
830.6320	Corrosion characteristics	Not required	456122-00
830.7000	pH	Not Applicable	
830.7100	Viscosity	Not Applicable	

<b>GUIDELINE NO.</b>	<b>STUDY</b>	<b>RESULTS</b>	<b>MRID NO.</b>
830.7200	Melting point	Not Applicable	
830.7220	Boiling point	Not Applicable	
830.7300	Bulk Density	33 - 36 lbs/cubic foot (EP: 0.655 g/mL at 22°C)	
830.7840	Solubility	<1% by weight	
830.7950	Vapor Pressure	Not Applicable	

## **B. HUMAN HEALTH ASSESSMENT**

### **1. Toxicology Assessment**

All required toxicology data for this biochemical pesticide are waived. No additional toxicological data are needed. The decision to waive these data are based on: 1) the product is naturally occurring, 2) possesses a non-toxic mode of action, 3) corn gluten meal is considered GRAS (Generally Recognized As Safe) by FDA under 21 CFR §184.1321, and can be used without limitations, other than current Good Manufacturing Practices, and 4) under 40 CFR §180.1164, corn gluten is exempted from the requirements of a tolerance on food when used as a herbicide; and under 40 CFR §180.1001 (d), corn gluten meal is exempted from the requirement of a tolerance when used as an attractant on crops. Further, the registrant's request for data waivers was appended with abstracts from scientific journals discussing the use of corn gluten meal as a food and/or feed for dairy and beef cattle, cats, minks, foxes, sheep, horses, swine, poultry, trout, salmon, catfish, guinea pigs, hamsters, monkeys, mice, rats, rabbits, and dogs.

The aforementioned information was accompanied by reduced risk rationale which collectively addressed acute toxicity; reproductive, developmental, mutagenic, and neurotoxic properties; and oncogenic and other chronic effects, followed by a rationale for each nontarget organism guideline as well as a discussion of ecological/environmental impacts.

**Table II. Acute Toxicity Data (Tier I):**

<b>GUIDELINE NO.</b>	<b>STUDY</b>	<b>RESULTS</b>	<b>MRID NO.</b>
870.1100	Acute oral toxicity	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable
870.1200	Acute dermal toxicity	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable
870.1300	Acute inhalation toxicity	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable
870.2400	Primary eye irritation	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable
870.2500	Primary dermal irritation	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable
870.2600	Skin sensitization	Waived, naturally occurring, non-toxic mode of action, Toxicity Category IV	Not Applicable

## **2. Dose Response Assessment**

Based on the available information and data regarding corn gluten meal and its nontoxic mode of action, no end points were identified.

## **3. Dietary Exposure and Risk Characterization**

In the absence of any toxicological endpoints, risk from the consumption of residues is not expected for the general population including infants and children.

#### **4. Occupational and Residential Exposure**

##### **a. Occupational Exposure and Risk Characterization**

Occupational exposures are not a concern because the product is naturally occurring and possesses a non-toxic mode of action. The application methods for the corn gluten meal end-use product (i.e., use of drop spreader with granular formulation), poses no significant concern for dermal, eye, and inhalation exposures. Based on the active ingredients non-toxicity, worker exposure data on corn gluten meal are not required. However, based on the nature, use pattern, non-toxic mode of action, and relative safety of this active ingredient, including the battery of information from the open scientific literature, the toxicity category has been categorized to IV and the product will use the signal word 'Caution.' However, at the registrant's option and according to the Agency's Final Rule entitled: Pesticide Labeling and Other Regulatory Revisions, published December 14, 2001 (FRN Vol 66, 241), the label is not required to display the signal word or precautionary statements for potential routes of exposure. No reentry interval is required in conjunction with the use of the EP.

##### **b. Residential, School and Daycare Exposure and Risk Characterization**

The end use product containing corn gluten meal is intended for use in a residential setting. Again, because the active ingredient is naturally occurring and possesses a non-toxic mode of action the Agency is not concerned about the potential exposure to children.

#### **5. Drinking Water Exposure and Risk Characterization**

No significant exposure is expected from use of corn gluten meal in the aquatic environment when used according to label instructions. Furthermore the label includes mitigating language to reduce any potential risk to aquatic organisms. The precautionary labeling of end-use products stipulates: "Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters."

#### **6. Acute and Chronic Dietary Risks for Sensitive Subpopulations, Particularly Infants and Children**

The Agency has concluded that corn gluten meal residues are not a dietary hazard to the general population, including infants and children.

#### **7. Aggregate Exposure from Multiple Routes Including Dermal, Oral and Inhalation**

The general population is exposed to corn glens, including its protein, fat and fiber, in food products. No studies and related data were submitted. The registrant supported the registration application with information documenting corn gluten meal as a well recognized animal food and feed supplement. The Agency concurs that no adverse effects are expected from the use of the active ingredient in a pesticide product.

#### **8. Cumulative Effects**

Corn gluten meal is not toxic and it is not anticipated there would be cumulative effects from common mechanisms of toxicity.

#### **9. Risk Characterization**

The Agency has considered corn gluten meal in light of the relevant safety factors in FQPA and FIFRA. A determination has been made that no unreasonable adverse effects to the U.S. population in general, and to infants and children in particular, will result from the use of WOW Plus when label instructions are followed.

### **C. ENVIRONMENTAL ASSESSMENT**

#### **1. Ecological Effects Hazard Assessment**

The common food grade nature of the active ingredient and the fact that corn gluten meal is not expected to cause adverse effects on non-target organisms provides the rationales for waiving the data. Corn gluten meal is also a food stuff used to supplement the diets of animals, birds, and fish. As such, corn gluten meal provides protein, fat, and fiber necessary for meeting nutritional needs and supporting normal metabolic processes.

The TGAI is intended for pre-emergent weed control on established grasses (lawns and turf). Nontarget plants are not expected to be present on residential lawns or similar turf grass areas. The EP is not labeled for use in forests, natural grasslands, or in forest site preparation. No phytotoxicity problems are anticipated and no hazard is posed to endangered and threatened plant species; therefore, no additional ecological effects information or data are needed.

In support of the above stated position, the Agency recognizes that corn gluten meal may be used safely as an active ingredient as a minimum risk pesticide (40 CFR 152.25(g) The 25b List).

Also, the Food and Drug Administration has promulgated a direct food additive regulation stating that corn gluten meal is generally recognized as safe (GRAS).

## **2. Environmental Fate and Ground Water Data**

Exposure assessments for this active ingredient were not performed because significant human health or ecological effects issues did not arise in the Tier I studies. The data for Ecological Effects (Tier I) are waived; therefore, Environmental Fate and Groundwater data (Tier II) testing was not triggered and is not required. Since Tier II studies were not triggered, there is no requirement for environmental fate data.

## **3. Ecological Exposure and Risk Characterization**

The end use product, WOW Plus, is intended for residential use. When applied according to the proposed label directions, no direct exposures are expected for nontarget organisms. Moreover, the active ingredient is naturally occurring, has a non-toxic mode of action, and as noted previously is a documented food or food supplement. Given these characteristics of corn gluten meal, nontarget exposure and ecological effects studies were waived for these particular uses of WOW Plus. Furthermore, standard precautionary label statements under “Environmental Hazards” are presented on the label.

**Avian Acute, Dietary, and Reproductive Toxicity:** Given that the active ingredient is used as an avian food and feed supplement, it is unlikely that the product will have any adverse effects on birds.

**Fish Acute, Chronic and Aquatic Invertebrate Toxicity:** Given that the active ingredient is used as a fish food and feed supplement, it is unlikely that the product will have any adverse effects on fish or other aquatic organisms.

### **Table IV. Non-Target Toxicity Data - Tier I Guideline Requirements for corn gluten meal:**



<b>Guideline No.</b>	<b>Study</b>	<b>Result</b>	<b>MRID</b>
850.2100	Avian Acute Oral	Waived, naturally occurring, non-toxic mode of action	NA
850.2200	Avian Dietary	Waived, naturally occurring, non-toxic mode of action	NA
850.1075	Fish Acute Toxicity	Waived, naturally occurring, non-toxic mode of action	NA
850.1010	Aquatic Invertebrate, Acute Toxicity, Freshwater Daphnids	Waived, naturally occurring, non-toxic mode of action	NA

Nontarget Insects: Honeybee Contact Toxicity: Given the nontoxic nature of the active ingredient, and the low likelihood that bees would be exposed to the product if applied according to label directions (soil applied to established lawns and turf), it is unlikely that the product will have any adverse effects on honey bees.

Nontarget Plants (Terrestrial): The active ingredient's mode of action is to prevent root development at the time of germination, but does not prevent germination nor affect the root systems of mature plants. The product is proposed for use only on established lawns and turf. Therefore, no phytotoxicity to established plants is expected. Germinating seedlings of nontarget plants are not likely to be exposed to the active ingredient.

Nontarget Plants (Aquatic): No aquatic uses are proposed for the product and, therefore, it is unlikely that aquatic plants will be exposed to the product when used according to label directions.

#### **D. EFFICACY DATA**

Efficacy data were previously submitted December 8, 1995 in support of a label amendment to change application rate for corn gluten meal as active ingredient in the EP A-Mazing Lawn. No further efficacy data are required to be submitted to the Agency, since no public health uses are involved.

#### **IV. RISK MANAGEMENT DECISION**

## **A. DETERMINATION OF ELIGIBILITY FOR REGISTRATION**

Section 3(c)(5) of FIFRA provides for the registration of new active ingredients if it is determined that corn gluten meal:

- A) composition is such as to warrant the proposed claims for this active ingredient.
- B) labeling and other materials required to be submitted comply with the requirements of FIFRA.
- C) will perform its intended function without unreasonable adverse effects on the environment.
- D) when used in accordance with widespread and commonly recognized practice, it will not generally cause unreasonable adverse effects on the environment.

The criteria listed A to D above are satisfied, as follows:

- A) corn gluten meal is not expected to cause unreasonable adverse effects when used according to label instructions.
- B) by the current label and by the data presented in this document.
- C) based on both efficacy data and information supporting data waivers which indicate this new pesticidal active ingredient will not cause any unreasonable adverse effects to human health or the environment.
- D) data submitted and the low exposure to the product when used according to the label's directions.

Therefore, corn gluten meal is eligible for registration. The technical compound will be formulated into an end-use product in conjunction with additional other ingredients for use on lawns at residential sites.

## **B. REGULATORY POSITION**

### **1. Conditional/Unconditional Registration**

Based on the data submitted, BPPD recommends that corn gluten meal is eligible for registration under Section 3(c)(5) of FIFRA. BPPD foresees no unreasonable adverse effects to human health or the environment from the use of corn gluten meal.

## **2. Tolerance Reassessment**

The active ingredient is exempt from the requirement of a tolerance under 40 CFR §180.1164, when used as an herbicide on food and under 40 CFR §180.1001 (d) when used as an attractant on crops.

## **3. CODEX Harmonization**

There are no CODEX values for corn gluten meal.

## **4. Nonfood Re/Registrations**

The active ingredient and end use product are intended only for nonfood use on lawns and turf grasses.

## **5. Risk Mitigation**

Since there are no risk issues, mitigation measures are not required at this time for dietary risk, residential risk, risks to nontarget organisms (plants and wildlife), or ground water contamination for this TGAI.

## **6. Endangered Species Statement**

Given the specificity of this biochemical pesticide and based on the intended use pattern, and the results of toxicity and exposure data from the public scientific literature and from the data submitted by the applicant, the Agency has determined that this action will have no effect on currently listed endangered and threatened species.

# **C. LABELING RATIONALE**

It is the Agency's position that the labeling for the end-use product containing 78% of corn gluten meal complies with the current pesticide labeling requirements.

## **1. Human Health Hazard**

**a. Worker Protection Standard**

The End-Use Product does not come under the provisions of the Worker Protection Standards (WPS).

**b. Non-Worker Protection Standard**

There are no non-WPS human health hazard issues.

**c. Precautionary Labeling**

The Agency has examined the information submitted in support of the registration for corn gluten meal and concluded that the proposed precautionary labeling (i.e. Signal Word, Statement of Practical Treatment and other label statements) adequately mitigates the risks associated with the proposed uses.

**End-Use Product Precautionary Labeling:**

For corn gluten meal Technical Grade and End-Use Products will use the Signal Word: "CAUTION." No further Precautionary Statements are required.

**d. Spray Drift Advisory**

A spray drift advisory statement is not necessary for granular products containing corn gluten meal as the active ingredient.

**2. Environmental Hazards Labeling**

**End-Use Product Environmental Hazards Labeling:**

"Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters."

**3. Application Rate**

The Agency's position is that the labeling for pesticide products containing corn gluten meal as the active ingredient complies with the current pesticide labeling requirements. The Agency has not required a maximum number of applications per season of this active ingredient.

Label specified rates are: "10 lbs. Per 1,000 sq. ft. provides adequate weed control and lawn fertilization with yearly Spring and Fall applications. 20 lbs. Per 1,000 sq. ft. provides even better control."

#### D. LABELING

Product name: **WOW Plus**

**Active Ingredient:**

corn gluten meal 78.0%

**Other Ingredients:** 12.00%

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**Total:** 100.00%

Signal word is "CAUTION."

The product shall contain the following information:

- Product Name
- Ingredient Statement
- Registration Number
- "Keep Out of Reach of Children"
- Signal Word (CAUTION)
- Environmental Hazards

**BIBLIOGRAPHY:** Citations Considered to be part of the Data Base Supporting the Registration of corn gluten meal:

42849900 Gardens Alive, Inc. (1993) Submission of product chemistry data in support of the registration for A-Maizing Lawn. Transmittal of three studies.

42849901 Kinerk, N. (1993) Product Chemistry: Product Identity and Composition: A-Maizing Lawn. Unpublished study prepared by Gardens Alive, Inc. 19 p.

42849902 Kinerk, N. (1993) Product Chemistry: Analysis and Certification of Product Ingredients: A-Maizing Lawn. Unpublished study prepared by Gardens Alive, Inc. 10 p.

42849903 Kinerk, N. (1993) Product Chemistry: Physical and Chemical Characteristics: A-Maizing Lawn. Unpublished study prepared by Gardens Alive, Inc. 4 p.

43880200 Gardens Alive, Inc. (1995) Submission of Product Use Data in Support of a Petition for Tolerance for Corn Gluten Meal and Amendment to the Registration of A-Maizing Lawn. Transmittal of one Study.

43880201 Nonnecke, G.; Christians, N.; McClure, M.; et al. (1995) Compilation of Efficacy Studies Evaluating Corn Gluten Meal as a Weed Control Product and Nitrogen Source for Strawberries. Unpublished study prepared by Iowa State University. 40 p.

45407000 Gardens Alive, Inc. (2001) Submission of Product Chemistry Data in Support of the Application for Registration of WOW Plus. Transmittal of four Studies.

45407001 Bontrager, P. (2001) Product Chemistry: Product Identity and Composition, Formulation Process, Discussion of Formation of Impurities: Wow! Plus. Unpublished study prepared by Gardens Alive!, Inc. 28 p. {OPPTS 830.1550, 830.1600, 830.1620, 830.1650, 830.1670, 830.1750}

45407002 Bontrager, P. (2001) Preliminary Analysis Certified Limits: Wow! Plus. Unpublished study prepared by Gardens Alive!, Inc. 14 p. {OPPTS 830.1550, 830.1700, 830.1750}

45407003 Lezotte, F.; Nixon, W. (2001) Determination of the Color, Physical State, Odor, pH and Density of Gardens Alive's WowPlus: Lab Project Number: 530C-101. Unpublished study prepared by Wildlife International, Ltd. 18 p. {OPPTS 830.6302, 830.6303, 830.6304, 830.7000, 830.7300}

45407004 Lezotte, F.; Nixon, W. (2001) Determination of the Corrosion Characteristics of Gardens Alive's Wow Plus: Lab Project Number: 530C-102. Unpublished study prepared by Wildlife International, Ltd. 12 p. {OPPTS 830.6302}

## **V. ACTIONS REQUIRED BY REGISTRANTS**

Reports of incidences of adverse effects to humans or domestic animals under FIFRA, Section 6(a)2 and incidents of hypersensitivity under 40 CFR Part 158.690(c), guideline reference number 870.2600 (Skin Sensitization). There are no data requirements, label changes and other responses necessary for the reregistration of the end-use product since the product is being registered after November 1984 and is, therefore, not subject to reregistration. There are also no existing stocks provisions at this time.

**VI. Appendix A**

Table 4 lists the use sites for the product. The label for the product is also attached.

Table 4. Registration/Reregistration

<p><b>Corn Gluten Meal Technical Grade</b></p> <p><u>Use Sites</u> For incorporation into end-use products intended for use as a pre-emergent herbicide on turf.</p>	<p>Official date registered:</p>
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