

70506-260

9/9/2013

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Ms Sherry B. Hutcheson  
United Phosphorus, Inc  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406

SEP 09 2013

Subject: Notification for Label Change per PRN 98-10: Correct minor errors and typos  
Application Date: 8/14/13  
Product name: Raven  
EPA Reg. No. 70506-260  
Decision Number 482151

Dear Ms Hutcheson:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated 8/14/13 for the above product. The Registration Division has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10. The label submitted with the application has been stamped "Notification" and will be placed in our records.

If you have questions concerning this letter, please call Banza Djapao at 703-305-7269, or via email at [djapao.banza@epa.gov](mailto:djapao.banza@epa.gov) or you may call me at 703-305-5410.

Sincerely,

A handwritten signature in black ink, appearing to read "Hope Johnson".

Hope Johnson  
Product Manager 21  
Fungicide Branch  
Registration Division (7504P)



**EPA**

United States  
**Environmental Protection Agency**  
 Washington, DC 20460

☐ Registration  
☐ Amendment  
☒ Other: Notification

OPP Identifier Number

**Application for Pesticide - Section I**

1. Company/Product Number 70506-260	2. EPA Product Manager Cynthia Giles-Parker	3. Proposed Classification  <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) Raven	PM# (Acting) 21	
5. Name and Address of Applicant (Include ZIP Code) <b>United Phosphorus, Inc.</b> <b>630 Freedom Business Center, Suite 402</b> <b>King of Prussia, PA 19406</b>  <input type="checkbox"/> Check if this is a new address		6. <b>Expedited Review.</b> In accordance with FIFRA Section 3(c)(3) (b)(I), my product is similar or identical in composition and labeling to:  EPA Reg. No.  Product Name

**Section - II**

<input type="checkbox"/> Amendment - Explain below. <input type="checkbox"/> Resubmission in response to Agency letter dated _____ <input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Final printed labels in response to Agency letter dated _____ <input type="checkbox"/> "Me Too" Application <input type="checkbox"/> Other - Explain below
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**Explanation:** Use additional page(s) if necessary. (For Section I and Section II.)  
 Notification of correction of minor errors and typos which have been corrected per PR Notice 98-10.  
 This notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 USC Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

**Section - III**

1. Material This Product Will Be Packaged In:				2. Type of Container	
Child-Resistant Packaging <input type="checkbox"/> Yes* <input checked="" type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Metal	<input checked="" type="checkbox"/> Plastic
*Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
		If "Yes" Package wgt.	No. per container	<input type="checkbox"/> Other (Specify)	
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container <b>2.5 gallon</b>		5. Location of Label Directions <input checked="" type="checkbox"/> On Label <input type="checkbox"/> On labeling accompanying product	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input checked="" type="checkbox"/> Paper glued <input type="checkbox"/> Stenciled		<input type="checkbox"/> Other _____			

**Section - IV**

1. Contact Point (Complete items directly below for identification of individual to be contacted, if necessary, to process this application)		
Name Sherry Hutcheson	Title Regulatory Affairs Manager	Telephone No. (Include Area Code) 229-247-9041
<b>Certification</b> I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		6. Date Application Received (Stamped)
2. Signature 	3. Title Regulatory Affairs Manager	
4. Typed Name Sherry Hutcheson	5. Date 08/14/2013	



8/163/18

**United Phosphorus, Inc.**

Sherry B. Hutcheson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
Phone: (229) 247-9041  
Fax: (229) 241-9699

August 13, 2013

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504P)  
US Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Attn: Cynthia Giles-Parker (Acting PM 21)

**Subject: Notification for Raven (EPA. Reg. No. 70506-260)**

Dear Ms. Giles-Parker,

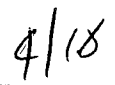
United Phosphorus, Inc. is submitting a label for our product Raven (EPA Reg. No. 70506-260). We believe this action qualifies under the guidance of PR Notice 98-10 as a non-notification. Through this action, we are making some minor corrections which on the label which was approved and stamped by the Agency on May 31, 2013. These include:

1. On page 2 in the PPE section, we corrected the symbol  $>$  to be  $\geq$ . The symbol,  $\geq$ , is what is required per Chapter 10 of the Label Review Manual.
2. On page 2 in the PPE section, we have listed the PPE as bullets rather than in paragraph form as on the stamped label.
3. On page 3 under the Directions for Use, we have bolded the statement for emphasis.
4. On page 4 in the Ag Use Requirements box, we have added the acronym WPS after the words, Worker Protection Statement.
5. On page 4 in the Ag Use Requirements box, we have bulleted the PPE rather than listing in paragraph form for clarity.
6. On page 10 under tank mixtures, we have added fl. before oz. since this is a liquid product.
7. In this same section, we have added a circle R and TM after other brand names.
8. On page 14 in the Warranty Statement, we have added the word 'consistent' as this is the appropriate language as adopted by our company and the Agency.

We believe this notification is consistent with the provisions of PR Notice 98-10 and EPA regulations at 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula of this product. I understand that it is a violation of 18 USC Sec. 1001 to willfully make any false statement to EPA. I further understand that if this notification is not consistent with the terms of PR Notice 98-10 and 40 CFR 152.46, this product may be in violation of FIFRA and I may be subject to enforcement action and penalties under sections 12 and 14 of FIFRA.

In addition to this transmittal letter, this submission comprises:

- One completed EPA form 8570-1, Application for Pesticide Registration,



Sherry B. Hutcheson

King of Prussia, PA 19406

Fax: (229) 241-9699

- Sherry B. Hutcheson  
Regulatory Affairs Manager

A collection of 15 small, stylized line drawings of various birds, including sparrows, finches, and songbirds, arranged in a grid-like fashion. The drawings are simple, using only outlines and minimal shading to represent the birds' forms and features like beaks and wings.

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GROUP	2	FUNGICIDE
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# Raven

## (Alternate Brand Name: Phoenix Raven)

**Broad-Spectrum Fungicide for the Prevention and Control of Certain Diseases on Non-Residential Turf and Ornamentals**

**ACTIVE INGREDIENT:**

Iprodione: 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide\* .....23.3%

**OTHER INGREDIENTS:** .....76.7%

**TOTAL:** .....100.0%

This product contains petroleum distillate.

\*Contains 2 lbs. Iprodione per gallon.

### KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Do not give any liquid to the person.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<p>For medical emergency, call the Rocky Mountain Poison Control Center at 1-866-673-6671.</p> <p><b>Note to Physician:</b> This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.</p> <p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment.</p>	

**FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300.**

Net Contents: \_\_\_\_\_ gallons

EPA Reg. No. 70506-260  
 United Phosphorus, Inc.  
 630 Freedom Business Center, Suite 402  
 King of Prussia, PA 19406  
 1-800-438-6071

EPA Est. No. \_\_\_\_\_

**NOTIFICATION**  
 SEP 09 2013

**PRECAUTIONARY STATEMENTS  
HAZARDS TO HUMANS AND DOMESTIC ANIMALS  
CAUTION**

Harmful if swallowed, absorbed through skin or inhaled. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Mixers, loaders, others exposed to the concentrate, cleaners/repairers of equipment must wear:

- long-sleeved shirt and long pants,
- chemical-resistant gloves such as barrier laminate, nitrile rubber ( $\geq 14$  mils), neoprene rubber ( $\geq 14$  mils), or viton ( $\geq 14$  mils),
- chemical-resistant apron, and
- chemical-resistant footwear plus socks.

Applicators using hand held equipment must wear:

- coveralls over long-sleeve shirt and long pants,
- chemical-resistant gloves such as barrier laminate, nitrile rubber ( $\geq 14$  mils), neoprene rubber ( $\geq 14$  mils), or viton ( $\geq 14$  mils),
- chemical-resistant footwear plus socks,
- chemical-resistant headgear for overhead exposures, and a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC21C), or a NIOSH approved respirator with any R, P or HE filter.

Applicators using mechanical ground equipment (groundboom, etc.) must wear:

- long-sleeve shirt and long pants, and
- shoes plus socks.

Applicators using truck-mounted equipment with a handgun at the end of a hose (i.e., for commercial turfgrass) and all other handlers not specified above must wear:

- long-sleeve shirt and long pants,
- chemical-resistant gloves such as barrier laminate, nitrile rubber ( $\geq 14$  mils), neoprene rubber  $\geq 14$  mils), or viton ( $\geq 14$  mils), and
- shoes plus socks.

Follow manufacturer's instructions for cleaning/maintaining personal protective equipment (PPE). If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Discard clothing or other materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

**ENGINEERING CONTROL STATEMENT**

When handlers use closed systems, enclosed cabs in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

### USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

### ENVIRONMENTAL HAZARDS

This chemical can contaminate surface water through aerial and ground spray applications. Under some conditions, it may also have a high potential for runoff into surface water after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water.

This pesticide is toxic to invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift or runoff from treated areas is hazardous to aquatic invertebrates in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

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### DIRECTIONS FOR USE

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**It is a violation of Federal law to use this product in a manner inconsistent with its labeling.** Read the entire label before using this product.

Do not apply this product in a way that will contact workers or other persons, either directly or indirectly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard (WPS) 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval. Do not enter or allow worker entry into treated areas during the restricted -entry interval (REI) of 12 hours for ornamental uses. The restricted entry interval for all other WPS uses (sod farm) is 24 hours. Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI). Specific REIs are listed in crop use directions.

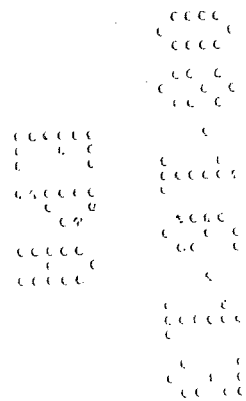
PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls,
- Chemical-resistant gloves such as barrier laminate, nitrile rubber  $\geq 14$  mils, neoprene rubber  $\geq 14$  mils, or viton  $\geq 14$  mils,
- Shoes and socks.

### NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to ornamental and turf uses (golf courses, landscape and institutional areas) of this product that are NOT within the scope of the Worker Protection Standard (WPS) for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Do not enter or allow others to enter the treated area until sprays have dried.





### STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

**PESTICIDE STORAGE:** Store in original container only in a cool, dry secured place.

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

**CONTAINER HANDLING:** Nonrefillable container. Do not reuse or refill this container. Triple rinse (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container  $\frac{1}{4}$  full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available or puncture and dispose of in a sanitary landfill or by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### PRODUCT USE INFORMATION

In order to assure maximum plant tolerance and disease control, follow all the directions, precautions and limitations on this label.

#### **DIRECTIONS FOR USE THROUGH SPRINKLER IRRIGATION SYSTEMS**

Apply this product only through sprinkler irrigation systems including microjet, solid set, wheel lines and center pivot. Do not apply this product through any other type of irrigation system.

**SPRAY PREPARATION:** Remove scale, pesticide residues, and other foreign matter from the chemical tank and entire injector system. Flush with clean water.

**APPLICATION INSTRUCTIONS:** First prepare a suspension of Raven in a mix tank. Fill tank with  $\frac{1}{2}$  to  $\frac{3}{4}$  the desired amount of water. Start mechanical or hydraulic agitation. Add the required amount of Raven, and then the remaining volume of water. (Suspension concentrations using the appropriate dosage per acre specified on this label of Raven per 1 to 4 gallons of water are recommended). The spray solution should be buffered to a pH of 5.0-7.0. Then set sprinkler to deliver 0.1 to 0.4 inch of water per acre. Start sprinkler and uniformly inject the suspension of Raven into the irrigation water line so as to deliver the desired rate per acre. The suspension of Raven should be injected with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing. If you should have any other questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.

**NOTE:** When treatment with Raven has been completed, avoid further field irrigation over the treated area for 24 hours to prevent washing the chemical off the crop.

#### **INSTRUCTIONS FOR APPLICATIONS THROUGH SPRINKLER IRRIGATION SYSTEMS**

Maintain continuous agitation in mix tank during mixing and application to assure a uniform suspension. Greater accuracy in calibration and distribution will be achieved by injecting a larger volume of a more dilute solution per unit time. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shutdown. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the

water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e. g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment. If you are unsure of wind conditions, contact your local extension agent.

Do not apply when wind speed favors drift, when system connection or fittings leak, when nozzles do not provide uniform distribution or when lines containing the product must be dismantled and drained. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from nonuniform distribution of treated water.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation shall shut the system down and make necessary adjustments should the need arise.

#### **Chemigation Systems Connected to Public Water Systems**

Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regular serves an average of at least 25 individuals daily at least 60 days out of the year.

Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, back flow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the flow outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection. The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.

Do not apply when wind speed favors drift beyond the area intended for treatment.

#### **SPRAY DRIFT**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulation.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.

Where states have more stringent regulations, they must be observed.

**AERIAL DRIFT REDUCTION ADVISORY INFORMATION** (This section is advisory in nature and does not supersede the mandatory label requirements)

**Information on Droplet Size:**

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential, but will not prevent drift if applications are made improperly, or under unfavorable environmental conditions (see Wind, Temperature and Humidity, and Temperature Inversions below).

**Controlling Droplet Size**

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure – Do not exceed the nozzle manufacturer's recommended pressures. For many nozzle types lower pressure produces larger droplets. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles – Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released parallel to the airstream produces larger droplets than other orientations and is the recommended practice. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Solid stream nozzles oriented straight back produce the largest droplets and the lowest drift.

**Boom Length:** For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or rotor length may further reduce drift without reducing swath width.

**Application Height:** Applications should not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

**Swath Adjustment:** When applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

**Wind:** Drift potential is lowest between wind speeds of 2 – 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. **NOTE:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

**Temperature and Humidity:** (This section is advisory in nature and does not supersede the mandatory label requirements)

When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

**Temperature Inversions:** (This section is advisory in nature and does not supersede the mandatory label requirements)

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are

common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**SENSITIVE AREAS:** The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitats for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

### RAVEN MIXING INSTRUCTIONS

Shake well before using. First, partially fill the spray tank with clean water. Then measure the required amount of Raven and pre-mix with a small volume of water, and add this to the tank. Continue to agitate to ensure thorough mixing while filling tank with remaining water. Maintain agitation during application and apply with properly calibrated application equipment. Do not allow spray mixture to stand overnight or for prolonged periods, as some chemical breakdown may occur, particularly in water with a high pH. Buffer the spray solution to a pH of 5.0 – 7.0. A high quality, nonionic spreader can be used as a **spray tank additive**. Add Raven to the tank before adding any adjuvant. Read and review the adjuvant label or consult its manufacturer for crop tolerance and safety information when used with Raven. Mixing with very acidic products may result in precipitation of Raven.

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#### TURF (golf courses, sod farms, and institutional areas where fine turf is grown)

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##### INSTRUCTIONS FOR TURF:

Raven is a foliar applied fungicide which is used for disease control on golf courses, sod farms, and institutional areas where fine turf is grown. For golf courses: do not apply to turf cut higher than 1" on golf holes where water bodies are present. When used in conjunction with good turf management practices, Raven is effective in controlling the following diseases:

Spring, Summer and Fall Diseases: Dollar Spot, Brown Patch, Large Patch, Fusarium Blight, Necrotic Ring Spot, Leaf Spots (including Helminthosporium Leaf Spot caused by Drechslera spp.), and Corticium Red Thread.

Winter Diseases: Fusarium Patch (Pink Snow Mold) and Gray Snow Mold.

Apply the rates specified in the table below in ½ to 10 gallons of water per 1,000 sq. ft. Do not drench. To avoid product breakdown, do not allow the mixture to stand for longer than 12 hours. Maintain agitation during spray operation. Apply with properly calibrated spray equipment. Unless otherwise noted, begin applications when conditions favor disease development or when the disease first appears.

DISEASE	RATE	APPLICATION INTERVAL
<b>Dollar Spot</b> <i>(Lanzia spp. and Moellerodiscus spp.)</i> <b>Brown Patch</b> <i>(Rhizoctonia solanii)</i> <b>Leaf Spot</b> <i>(Drechslera spp.)</i> <b>Leaf Spot</b> such as <i>Helminthosporium</i>	3 – 4 fl oz/1000 ft <sup>2</sup>	<b>Greens and Tees:</b> Repeat at 14 to 21 day intervals as needed. <b>Fairways and Other Specified Turf Areas:</b> Repeat at 14 to 28 day intervals as needed. <b>NOTE:</b> On Fairways, for Dollar Spot control use 2-4 fl. oz./1,000 ft <sup>2</sup> .
<b>Large Patch</b> <sup>†</sup> <i>(Rhizoctonia solanii)</i>	4 fl oz/1000 ft <sup>2</sup>	Make first application in fall when conditions are favorable for disease development but not before symptoms are visible. Repeat applications in spring as needed at 14-21 day intervals.
<b>Fusarium Blight</b> <i>(Fusarium spp.)</i> <b>Necrotic Ring Spot</b> <sup>†</sup> <i>(Leptosphaeria korrae or Ophiosphaerella korrae)</i>	8 fl oz/1000 ft <sup>2</sup>	Use only preventative foliar applications when conditions first become favorable for disease development. Make additional applications as needed at 28 day intervals.
<b>Fusarium Patch</b> <i>(Microdochium nivalis)</i> [Pacific Northwest Only – West of the Cascade Mountains]	4 – 8 fl oz/1000 ft <sup>2</sup>	Repeat at 14-21 day intervals as needed.
<b>Gray Snow Mold</b> <i>(Typhula spp.)</i> <b>Pink Snow Mold</b> <i>(Fusarium nivale)</i>	4 – 8 fl oz/1000 ft <sup>2</sup>	Make one application before first permanent snow cover. If possible, make another application during mid-winter thaw.
<b>Corticium Red Thread</b> <i>(Laetisaria fuciformis)</i>	4 fl oz/1000 ft <sup>2</sup>	Use as a preventative spray every 14 days as needed.
<b>Curvularia</b> <i>(Curvularia spp.)</i>	4-8 fl oz/1000 ft <sup>2</sup>	Use as a preventative spray every 14 days as needed. Will control Curvularia in bermudagrass only.
<b>Anthracnose</b> <i>(Colletotrichum)</i> suppression only	4 – 8 fl oz/1000 ft <sup>2</sup>	Will provide suppression of anthracnose during periods favorable for disease development. May be tank mixed with a fungicide labeled for anthracnose control to improve effectiveness. Observe all applicable restrictions, directions and precautions on products used in tank mixes.

### USE RESTRICTIONS

Use at residential sites is prohibited.

Do not apply more than a total of 35 fluid oz. product/1000 ft<sup>2</sup> per year.

Do not apply more than 6 times per year.

Use the higher rate and/or shorter interval under severe disease conditions. When disease pressure is light to moderate, use the lower rates and longer intervals.

Do not mow or irrigate treated areas until the foliage is completely dry, usually a 24-hour waiting period following treatment is preferred.

Do not mix with any sticker, extender, or wetting agent. Do not graze animals on treated turf. Do not feed clippings from treated turf to livestock or poultry.

For sod farm uses, do not enter or allow worker-entry into treated areas during the restricted-entry interval (REI) of 24 hours.

† Not registered for this use in California

### TANK MIXTURES

#### ADDITIONAL DISEASE CONTROL

To expand the spectrum of diseases controlled, tank mix Raven with labeled fungicides containing flutolanil, trifloxystrobin, or azoxystrobin. When tank mixing products, always read and follow all label directions and follow the directions for the most restrictive product. Do not tank mix with any product containing a prohibition on tank mixing.

#### Broad Spectrum Disease Control and Resistance Management:

Tank mixing Raven with an appropriately labeled and registered thiophanate-methyl product, such as T-Bird 4.5L or T-Bird 85 WDG, provides effective, broad spectrum turf disease control and also serves as a useful tank mixture in the resistance management program required for other resistance sensitive fungicides.

Disease Pressure	Raven®	T-Bird® 4.5L	T-Bird® 85 WDG
Low to Medium	3 fl. oz./1000 ft. <sup>2</sup>	1.0 fl. oz./1000 ft. <sup>2</sup>	0.66 oz./1000 ft. <sup>2</sup>
High	3 fl. oz./1000 ft. <sup>2</sup>	2.0 fl. oz./1000 ft. <sup>2</sup>	1.32 oz./1000 ft. <sup>2</sup>

#### Summer Stress Complex/Summer Decline:

Combine 2 – 4 fl. oz. Raven with 4 – 8 oz. of a labeled fosetyl-al product such as Viceroy® 70DF, per 1,000 ft<sup>2</sup>.

#### Pythium Blight:

Combine Raven with a labeled product containing fosetyl-al (Viceroy 70DF) or propamocarb hydrochloride at labeled rate.

#### Gray Snow Mold (*Typhula* spp.):

In areas where continuous snow cover occurs, apply 4-8 fl. oz. Raven per 1000 sq. ft. tank mixed with an appropriately labeled chlorothalonil product (such as Pegasus™ chlorothalonil products ) at the labeled rate.

Make applications in the fall before snow cover occurs and use the higher rates if the turf remains frozen before snow cover. Apply with 1 – 5 gallons of spray solution per 1000 square feet. For best results, reapply if loss of snow cover occurs during a winter thaw. ORNAMENTALS

Use at residential sites is prohibited.

### FIELD, LANDSCAPE AND GREENHOUSE ORNAMENTALS AND CONIFER NURSERIES

Raven is a broad spectrum fungicide that may be applied safely to a wide range of ornamental flowering and foliage plants, either as a foliar spray, drench or dip. Read and follow the specific instructions below. Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 12 hours for ornamental uses.

#### DISEASES

1	Aerial Web Blight	<i>Rhizoctonia</i> sp.
2	Alternaria Leaf Blight	<i>Alternaria euphorbiae</i>
3	Alternaria Leaf Spot	<i>Alternaria panax. Alternaria tenuissima</i>
4	Botrytis Blight	<i>Botrytis</i> sp.
5	Fusarium Leaf Spot	<i>Fusarium moniliforme</i>
6	Helminthosporium Leaf Spot	<i>Helminthosporium</i> sp.
7	Rhizoctonia Stem and Root Rot	<i>Rhizoctonia</i> sp.
8	Ink Spot	<i>Drechslera iridis</i>
9	Tulip Fire	<i>Botrytis tulipae</i>
10	Alternaria Leaf Blight	<i>Alternaria zinniae</i>
11	Ray Blight	<i>Ascochyta chrysanthami</i>
12	Fusarium Corm Rot	<i>Fusarium oxysporum</i>
13	Daffodil Leaf Scorch	<i>Stagnospora curtissi</i>
14	Blossom Blight	<i>Monilinia fructicola</i>
15	Botrytis Storage Rot	<i>Botrytis</i> sp.
16	Cylindrocladium Blight and Wilt	<i>Cylindrocladium scoparium</i>

**PLANT TOLERANCE:** Plant tolerances to this product have been found to be acceptable in the specific genera and species listed on this label. It is not possible to evaluate every species or variety of ornamental plant for its tolerance to Raven. The user should test for possible phytotoxic responses on a few plants on a small scale using specified rates before commercial use.

**ORNAMENTALS** (numbers in parentheses refer to list of diseases above)  
Do not apply to Peace Lily or White Anthurium (*Spathiphyllum*).

#### FOLIAR USE INSTRUCTIONS

For control of the following diseases, apply when conditions become favorable for disease development. Ensure thorough coverage of foliage.  
Apply 1.0 to 2.5 quarts Raven per 100 gallons. Apply at intervals of 7 to 14 days.  
Do not apply more than 2.5 quarts product per application per acre, and do not apply more than 4 times per crop per year.  
Use higher specified rates and shorter intervals when conditions favor disease development.

Ageratum (1-7)	Dieffenbachia (1-7)	Pansy (1-7)
Ajuga (1-7)	Dizygotheca (1-7)	Peach (ornamental)(1-7)
Almond (ornamental)(1-7)	Dogwood (1-7)	Peperomia (1-7)
Alyssum (1-7)	Dracena (1-7)	Periwinckle (1-7)
Andromeda (1-7)	English Ivy (1-7)	Philodendron (1-7)
Aphelandra (1-7)	Episcia (1-7)	Phlox (1-7)
Artemisia (1-7)	Euonymous (1-7)	Pilea (1-7)
Aster (1-7)	Ficus (1-7)	Pine (1-7)
Azalea (1-7, 16)	Forsythia (1-7)	Pitosporum (1-7)
Boxwood (1-7)	Gazania (1-7)	Plum (ornamental)(1-7, 14)
Cactus (1-7)	Geranium (1-7)	Poinsettia (1-7)
Calendula (1-7)	Gladiolus (1-7, 12)	Poppy (1-7)
Carnation (1-7)	Gloxinia (1-7)	Pothos* (1-6)
Cherry (ornamental)(1-7)	Gypsophila (1-7)	Primrose (1-7)
Chrysanthemum (1-7, 11)	Hawthorn (1-7)	Privet (1-7)
Cineraria (1-7)	Holly (1-7)	Protea (1-7)
Cistena Plum (1-7, 14)	Hoya (1-7)	Pyracantha (1-7)
Coleus (1-7)	Hydrangea (1-7)	Rhododendron (1-7, 16)
Columbine (1-7)	Impatiens* (1-7)	Rose Tree of China (1-7)
Coral Bells (Heuchera)(1-7)	Iris (1-8)	Rose (1-7, 15)
Crape Myrtle (1-7)	Juniper (1-7)	Salvia (1-7)
Crassula (1-7)	Kalanchoe (1-7)	Schefflera (1-7)
Croton (1-7)	Lilies (1-7)	Snapdragon (1-7)
Cyclamen (1-7)	Lipstick Vine	Statice (1-7)
Daffodils (1-7, 13)	(Aeschynanthus)(1-7)	Tree Ivy (1-7)
Dahlia (1-7)	Marigold (1-7)	Tulip (1-7, 9)
Delphinium (1-7)	Monarda (Bee Balm)(1-7)	Viburnum (1-7)
Deutzia (1-7)	Pachysandra (1-7)	Violet (1-7)
Dianthus (1-7)	Palm (1-7)	Zinnia (1-7, 10)

\* Do not apply Raven as a soil drench on Impatiens or Pothos.

#### DRENCH USE INSTRUCTIONS

For control of Rhizoctonia Stem and Root Rot (*Rhizoctonia* spp.), apply as a drench at seeding and/or after transplanting. Drench 13 fl. oz. Raven /100 gallons, applying 1-2 pints of solution per square foot at 14 day intervals.

Do not apply more than 35 fl. oz product /1000 sq. ft. per year.

Use higher specified rates when conditions favor disease development.

Do not use this product as a drench on impatiens or pothos.

Do not apply Raven to Spathiphyllum.



### FOR DISEASES SPECIFIC TO CERTAIN ORNAMENTALS

Foliar Applications: Make applications of Raven when disease develops or if conditions are favorable for disease development.

ORNAMENTAL	DISEASE	RATE
Zinnia	Alternaria Leaf Blight ( <i>Alternaria zinniae</i> )	1.0 to 2.5 qt/A
Iris	Ink Spot ( <i>Drechslera iridis</i> )	
Chrysanthemum	Ray Blight ( <i>Ascochyta chrysanthami</i> )	
Tulips	Tulip Fire ( <i>Botrytis tulipae</i> )	
Daffodils	Daffodil Leaf Scorch ( <i>Stagnospora curtissi</i> )	
Cistena Plum	Blossom Blight ( <i>Monilinia fructicola</i> )	
<b>RESTRICTIONS:</b> Do not apply more than 2.5 qts. product/acre per application. Do not make more than 4 applications per crop per year.		

### DIP USE INSTRUCTIONS

ORNAMENTAL	DISEASE	RATE	DIRECTIONS
Rose	Botrytis Storage Rot ( <i>Botrytis</i> sp.)	1.0 qt/100 gallons	Dip bare root roses prior to cold storage. Dip duration: 5 minutes.
Azalea and Rhododendron	Cylindrocladium Blight and Wilt ( <i>Cylindrocladium scoparium</i> )	1.0 qt/100 gallons	Dip cuttings prior to planting. Dip duration: 5 minutes.
Gladiolus	Fusarium Corm Rot ( <i>Fusarium oxysporum</i> )	2.0 qts/100 gallons	Dip corms prior to storage. Dip duration: 5 minutes.

### TANK MIXTURES

Raven is compatible with many commonly used fungicides to broaden disease control. Raven may be tank mixed with metalaxyl, mefenoxam, or fosetyl-al products for control of Pythium and Phytophthora. Read and follow all label directions and follow the directions for the most restrictive product.

IMPORTANT INFORMATION

**READ BEFORE USING PRODUCT**  
**CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY**

**NOTICE:** Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of this product reflect the opinion of experts based on field use and tests, and must be followed carefully. It is impossible to eliminate all risks associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as manner of use or application, weather or crop conditions, presence of other materials or other influencing factors in the use of the product, which are beyond the control of United Phosphorus, Inc. or Seller. Handling, storage, and use of the product by Buyer or User are beyond the control of United Phosphorus, Inc. and Seller. To the extent consistent with applicable law, all such risks shall be assumed by Buyer and User, and Buyer and User agree to hold United Phosphorus, Inc. and Seller harmless for any claims relating to such factors.

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**NOTIFICATION**  
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