

70506-147

6/3/2010

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

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

JUN 3 2010

Mr. Ross Gilbert  
Agent  
United Phosphorus, Inc.  
c/o Pyxis Regulatory Consulting, Inc.  
4110 136yh Street NW  
Gig Harbor, WA 98332

RE: Notification of Primary Brand Name: **"Londax Herbicide"**  
EPA Registration Number: 70506-147  
Date of Submission: April 22, 2010

Dear Mr. Gilbert:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated April 22, 2010, for the above mention product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the actions requested fall 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 any questions, please call me directly at 703-305-6249 or Joyce Edwards of my staff at 703-308-5479.

Sincerely,

A handwritten signature in black ink, appearing to read "Linda Arrington".

Linda Arrington  
Notifications & Minor Formulations Team Leader  
Registration Division (7505P)  
Office of Pesticide Programs



United States  
Environmental Protection Agency  
Washington, DC 20460

<input type="checkbox"/>	Registration
<input type="checkbox"/>	Amendment
<input checked="" type="checkbox"/>	Other

OPP Identifier Number

Application for Pesticide - Section I

1. Company/Product Number 70506-147	2. EPA Product Manager J. Tompkins	3. Proposed Classification <input checked="" type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) United Phosphorus, Inc. / DuPont Londax Herbicide	PM# 25	
5. Name and Address of Applicant (Include ZIP Code) United Phosphorus, Inc. c/o Pyxis Regulatory Consulting, Inc. 4110 136th St. NW Gig Harbor, WA 98332 <input type="checkbox"/> Check if this is a new address	6. Expedited Review. 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"/> Final printed labels in response to Agency letter dated _____	<b>NOTIFICATION</b> JUN - 3 2010
<input type="checkbox"/> Resubmission in response to Agency letter dated _____	<input type="checkbox"/> "Me Too" Application.	
<input checked="" type="checkbox"/> Notification - Explain below.	<input type="checkbox"/> Other - Explain below.	

**Explanation:** Use additional page(s) if necessary. (For section I and Section II.)

Notification of a change in primary brand name allowed per PRN 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 U.S.C. 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	If "Yes" Unit Packaging wgt. No. per container		<input type="checkbox"/> Metal <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Glass <input type="checkbox"/> Paper <input type="checkbox"/> Other (Specify) _____
* Certification must be submitted		If "Yes" Package wgt.	No. per container		
3. Location of Net Contents Information <input checked="" type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container 20 oz.		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 checked="" type="checkbox"/> Lithograph 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 Ross Gilbert	Title Agent	Telephone No. (Include Area Code) (253) 853-7369	
<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 Agent	
4. Typed Name Ross Gilbert		5. Date 4/22/10	



40926



**United Phosphorus, Inc.**

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David L. Olson  
630 Freedom Business Center, Suite 402  
King of Prussia, PA 19406  
(610) 491-2814  
dave.olson@uniphos.com

April 2, 2010

To Whom It May Concern:

RE: Letter of Authorization

Dear Sir or Madam:

Please let this letter serve to confirm that Pyxis Regulatory Consulting, Inc. is authorized to act as an agent for United Phosphorus, Inc. (EPA Company Number 70506), before the U.S. Environmental Protection Agency and state governmental agencies in all matters regarding our pesticide registrations pursuant to the Federal Insecticide, Fungicide and Rodenticide Act ("FIFRA"), 7 U.S.C. § 136 et seq. and state law.

If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in cursive script that reads "David L. Olson".

David L. Olson  
Director, Regulatory Affairs

cc: Pyxis Regulatory Consulting, Inc.





## IMPORTANT

Injury to or loss of desirable trees or vegetation may result from failure to observe the following:

Do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.

Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.

Keep from contact with fertilizers, insecticides, fungicides, and seeds during storage.

Injury to or loss of subsequently sprayed crops may result from failure to observe the following procedures:

LONDAX must be cleaned from application equipment prior to spraying crops other than rice, according to cleanup procedures described in the **Sprayer Clean up** section of this label.

**Injury to or loss of adjacent sensitive crops and vegetation may result from failure to observe the following:**

**Avoid all direct or indirect (such as spray drift) contact with crops other than rice or land scheduled to be planted with crops other than rice because most crops other than rice are highly sensitive to LONDAX.**

## DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This labeling must be in possession of the user at the time of pesticide application.

Do not apply this product in a way that will contact workers or other persons, either directly 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.

### AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 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 (REI) of 24 hours.

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 made of any Water Proof material.
- Shoes plus socks.
- Protective eyewear.

LONDAX should only be used in accordance with recommendations on this label. United Phosphorus, Inc. will not be responsible for losses or damages resulting from the use of this product in any manner not specifically recommended by United Phosphorus, Inc.. User assumes all risks associated with such non-recommended use.

## GENERAL INFORMATION

LONDAX herbicide is a dry flowable formulation that is used for selective pre-emergent and post-emergent weed control in rice. When applied according to label directions, it effectively controls many annual and perennial broadleaf weeds and sedges. The best control is achieved when LONDAX is applied to very young emerging and actively growing weeds (fewer than three leaves). The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- growing conditions at and following treatment
- soil pH, texture, and organic matter content
- water management

## ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

LONDAX rapidly inhibits the growth of susceptible broadleaf weeds and sedges. Three to 5 days after application to weeds, leaves of susceptible plants appear chlorotic, and the growing point subsequently dies. Susceptible plants are controlled in 7 to 21 days depending on the species. In some cases, affected plants remain green but are stunted and are not competitive with the crop.

The herbicidal action of LONDAX may be influenced by temperature. At warmer temperatures, expression of herbicide symptoms is accelerated; at cooler temperatures (when air or water temperatures are below 70°F), expression of herbicide symptoms may be delayed beyond 5 days.

Occasionally, treated rice may suffer temporary chlorosis and/or growth retardation after treatment with LONDAX. These symptoms, which intensify in cold water and at high

ambient temperatures, are normally temporary and disappear within two to three weeks after application.

**RESISTANCE**

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed bio-types cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

**INTEGRATED PEST MANAGEMENT**

This product may be used as part of an Integrated Pest Management (IPM) program that can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

**USE INFORMATION: CALIFORNIA ONLY**

**WEEDS CONTROLLED**

LONDAX effectively controls the following weeds when used according to label directions:

<u>Common Name</u>	<u>Scientific Name</u>
Blunt Spikerush	<i>Eleocharis obtusa</i>
California Arrowhead*	<i>Sagittaria monte vidensis calycina</i>
Ducksalad	<i>Heteranthera limosa</i>

Eisen waterhyssop	<i>Bacopa eisenii</i>
Roundleaf waterhyssop	<i>Bacopa rotundifolia</i>
Purple ammannia*	<i>Ammannia coccinea</i>
Redstem*	<i>Ammannia auriculata</i>
Ricefield bulrush*	<i>Scirpus mucronatus</i>
Southern naiad	<i>Najas guadalupensis</i>
Smallflower umbrellaplant*	<i>Cyperus difformis</i>
Water plantain (seedling)	<i>Alisma</i> spp.
Waterwort	<i>Elatine</i> spp.

\* Naturally occurring resistant biotypes of this weed are known to exist in California. LONDAX will not control these biotypes.

In addition to controlling the weeds listed above, LONDAX controls barnyardgrass and watergrass if applied sequentially with molinate or thiobencarb. LONDAX should be applied on the same day as, or as soon as possible prior to or after, application of these pesticides.

## APPLICATION INFORMATION

### USE RATE

1 2/3 oz LONDAX per acre per year (wet spray or direct dry applications).

### GALLONAGE (WET SPRAYS)

Use a minimum of 5 gal of water per acre for aerial application and a minimum of 10 gal of water per acre for ground application.

### LONDAX DRY (DIRECT) APPLICATIONS

LONDAX may be applied as a dry application (without dilution in a liquid carrier) by air in rice. When applied according to the instructions on this label, dry aerial applications of LONDAX will effectively control the broadleaf and sedge weeds listed in the **Weeds Controlled** section of this label. However, special equipment is required for this method of application. See the **Application Timing** section on this page for more information.

Note the following precautions when applying LONDAX dry by air:

- Follow the loading, application, and equipment calibration instructions provided by the equipment manufacturer.
- Apply using only equipment approved by both United Phosphorus, Inc. and the Federal Aviation Administration (FAA).
- Only certified applicators should apply LONDAX dry by air.
- Do not apply LONDAX dry (direct) by air to dry rice fields.

- Do not mix LONDAX with any liquid carrier (such as water or oil).
- Do not mix with any surfactant or crop oil.
- Most crops other than rice are highly sensitive to LONDAX. Avoid all direct or indirect (such as spray drift) contact with non-target crops (or land scheduled to be planted with crops), as injury may result.
- Do not use equipment designed to apply LONDAX dry by air to rice to apply any product to any crop other than rice, as injury may result.

**DIRECTED STREAM APPLICATION (DSA)**

LONDAX may be applied as a low volume slurry application (diluted in water) using the Directed Stream Application method by air (helicopter) or ground application equipment in rice. Using the DSA method requires attaching drop-tubes to the spray boom to allow placement of the slurry directly into or just above the surface of the water of the rice paddy.

Use sufficient spray volume to allow proper dispersion and/or suspension in the spray tank. Also, the boom pressure should be sufficient to provide a solid (unbroken) stream of the slurry mixture into the rice paddy.

For best results, LONDAX should be applied to submerged weeds from pre-emergence to early post-emergence and to rice at the 1 to 3 leaf stage of growth.

**TANK MIXTURES**

Londax may be applied in tank mixtures with other herbicides and/or adjuvants registered for use in rice.

Refer to the above companion herbicide label(s) for all applicable use directions, restrictions (including any water-holding requirements), and precautions.

**APPLICATION TIMING**

For best results, LONDAX should be applied to submerged weeds from pre-emergence to early post-emergence and to rice at the 1- to 3-leaf stage. The best control is achieved when LONDAX is applied to very young emerging and actively growing weeds (fewer than three leaves).

LONDAX can be applied to rice beyond the 3-leaf stage, but late applications should target the pre-emergent to early post-emergent stage of weeds.

**WATER MANAGEMENT DURING AND FOLLOWING APPLICATION**

At application, and for 7 days following application, the soil should be completely covered with at least 3" of water that is held static (water that remains in individual paddies). For the best weed control, foliage of target weeds must also remain covered with static water at application and during the water-holding period. LONDAX efficacy will be reduced in areas where soil and weed foliage are not sufficiently covered.

Runoff caused by rainfall occurring within 7 days of application may reduce product performance.

The field may be irrigated to maintain the flood level, but this may also reduce control.

**USE INFORMATION:****AR, FL, LA, MO, MS, TX & PR****WEEDS CONTROLLED****Pre-flood Weeds**

LONDAX may be applied as a tank mix with propanil-containing rice herbicides. See **Pre-flood/Pre-flood sequential Applications - Londax Plus Propanil Containing Herbicides** for more information. The combination of LONDAX and propanil-containing rice herbicides used in pre-flood and pre-flood post-emergence sequential applications effectively controls the following weeds when used according to label directions:

<b>Common Name</b>	<b>Scientific Name</b>	<b>Weed Height (inches)</b>
Cocklebur	<i>Xanthium spinosum</i>	2-6
Eclipta	<i>Eclipta alba</i>	2-8
Gooseweed	<i>Sphenoclea zeylanica</i>	2-10
Hemp sesbania (coffee bean)	<i>Sesbania exaltata</i>	2-8
Mexicanweed	<i>Caperonia castanaefolia</i>	2-6
Morningglory (annual)		
Entireleaf	<i>Ipomea hederacea</i> †	2-7
Ivyleaf	<i>Ipomea hederacea</i>	2-7
Palmleaf	<i>Ipomea wrightii</i>	2-7
Pitted	<i>Ipomea lacunosa</i>	2-7
Northern jointvetch (curly indigo)	<i>Aeschynomene virginica</i>	2-4
Pennsylvania smartweed	<i>Polygonum pennsylvanicum</i>	2-5
Redstem*	<i>Ammannia auriculata</i>	2-8
Rice flatsedge	<i>Cyperus iria</i>	3-10
Texasweed	<i>Caperonia palustris</i>	2-6
Yellow nutsedge	<i>Cyperus esculentus</i>	3-10

†intergriuscula variety

\*Naturally occurring resistant biotypes of this weed are known to exist. LONDAX will not control these resistant biotypes.

## SUBMERGED WEEDS

LONDAX may be applied to control certain weeds that are submerged below the water surface. See **Post-Flood Applications - Submerged Weeds** for more information.

LONDAX effectively controls the following submerged weeds when used according to label directions:

<u>Common Name</u>	<u>Scientific Name</u>
Annual arrowhead spp.*	<i>Sagittaria</i> spp.
Blunt Spikerush	<i>Eleocharis obtusa</i>
Dayflower	<i>Commelina communis</i>
Ducksalad	<i>Heteranthera limosa</i>
Eclipta	<i>Eclipta alba</i>
Eisen waterhyssop	<i>Bacopa eisenii</i>
False pimpernel	<i>Lindernia</i> spp.
Gooseweed	<i>Sphenoclea zeylanica</i>
Mexicanweed	<i>Caperonia castanaefolia</i>
Pickerelweed	<i>Pontederia cordata</i>
Purple ammannia*	<i>Ammannia coccinea</i>
Redstem*	<i>Ammannia auriculata</i>
Rice flatsedge	<i>Cyperus iria</i>
Roughseed bulrush*	<i>Scirpus mucronatus</i>
Smallflower umbrellaplant*	<i>Cyperus difformis</i>
Southern naiad	<i>Najas guadalupensis</i>
Texasweed	<i>Caperonia palustris</i>
Water plantain (seedling)	<i>Alisma</i> spp.
Waterwort	<i>Elatine</i> spp.
Yellow nutsedge	<i>Cyperus esculentus</i>

\*Naturally occurring resistant biotypes of this weed are known to exist. LONDAX will not control these resistant biotypes.

**NOTE:** LONDAX will result in marked reduction in growth and vigor (stunting) of Alligatorweed (*Alternanthera philoxeroides*).

## WEEDS EMERGED ABOVE THE WATER SURFACE

LONDAX may be applied to control certain weeds that are emerged above the water surface. See **Post-Flood Applications - Emerged Weeds** for more information. LONDAX effectively controls the following emerged weeds when used according to label directions:

<b>Common Name</b>	<b>Scientific Name</b>	<b>Weed Height (inches)</b>
Annual arrowhead spp.*	<i>Sagittaria</i> spp.	4-10
Eclipta	<i>Eclipta alba</i>	4-7
Gooseweed	<i>Sphenoclea zeylanica</i>	4-8
Mexicanweed	<i>Caperonia castanaefolia</i>	4-6
Pickerelweed	<i>Pontederia cordata</i>	4-8
Redstem*	<i>Ammannia auriculata</i>	4-8
Rice flatsedge	<i>Cyperus iria</i>	5-8
Texasweed	<i>Caperonia palustris</i>	4-6
Yellow nutsedge	<i>Cyperus esculentus</i>	5-8

\*Naturally occurring resistant biotypes of this weed are known to exist. LONDAX will not control these resistant biotypes.

## Weeds Suppressed\* (above the water surface)

<b>Common Name</b>	<b>Scientific Name</b>	<b>Weed Height (inches)</b>
Hemp sesbania	<i>Sesbania exaltata</i>	4-10
Northern jointvetch	<i>Aeschynomene virginica</i>	4-10

For best results, use a minimum of 1.25 ounces per acre.

\*Weed suppression is a visual reduction in weed competition (reduced population and/or vigor) as compared to an untreated check. The degree of control will vary with the rate used, size of weeds treated, crop competition, and environmental conditions following treatment.

## APPLICATION INFORMATION

### USE RATE

Do not apply more than 1 2/3 oz LONDAX per acre per year.

### PREPLANT APPLICATIONS

A tank mixture of LONDAX (0.5 oz product/acre) plus glyphosate may be applied as a pre-plant treatment for improved control of emerged yellow nutsedge, Pennsylvania smartweed, hemp sesbania and morningglory species.

For best control of yellow nutsedge, an in-season application of LONDAX plus propanil will be required. See the "Pre-flood / Pre-flood Sequential Applications" section of this label for further information.

Refer to the glyphosate label for information on weed sizes, application conditions, use rates and use restrictions. Follow the label guidelines that are the most restrictive.

### PREFLOOD / PREFLOOD SEQUENTIAL APPLICATIONS

#### Spray Gallonage (Aerial or Ground Applied)

For both pre-flood and pre-flood sequential applications of LONDAX/propanil combinations, use at least 10 gal of water per acre.

#### LONDAX Plus Propanil-containing Herbicides

LONDAX may be applied as a tank mix with labeled propanil-containing rice herbicides to provide improved control of certain broadleaf weeds and sedges when used as pre-flood or pre-flood sequential post-emergence applications. For information on preparing the spray tank for application, see **Spray Equipment Preparation**.

Observe all applicable directions, restrictions (including water-holding requirements and the use of spray adjuvants), and precautions on the propanil-containing herbicide labels. Follow the most restrictive directions from either the LONDAX label or the tank mix partner. Weed control may be reduced if rainfall occurs within 4 hours of application of a LONDAX/propanil tank mix.

**Note:** When tank mixing LONDAX with dry flowable formulations of propanil, the use of a nonionic surfactant (minimum 80% active ingredient) at 0.25% v/v (1 qt per 100 gal), or a crop oil concentrate at 1% v/v (1 gal per 100 gal) is recommended, unless otherwise specified on the propanil label.

### APPLICATION TIMING

#### Pre-flood Application

Apply LONDAX (0.75 to 1.0 oz per acre) in combination with propanil (3 to 4 qt per acre) 1-7 days prior to establishment of the permanent flood. Use a minimum spray

volume of 10 gal of water per acre to ensure thorough coverage of the weeds. Weeds should be actively growing at the time of application.

**Pre-flood Sequential Applications**

In the event of severe weed infestations or less than optimal conditions (such as cool, dry weather, poor crop establishment, or slow crop growth), make sequential applications of LONDAX (0.50 to 0.75 oz per acre) in combination with propanil (3 to 4 qt per acre). Make the first application when broadleaf weeds are in the cotyledon to 4-leaf stage and the sedges are 3" to 6" tall. Make the second application, if needed, 1 to 7 days prior to establishment of the permanent flood.

**NOTE:** To avoid crop injury, refer to the propanil label for further restrictions and the proper timing of the first application.

**Water Management**

For the best weed control, establish the permanent flood as soon as possible (within 7 days of application) after the last application of LONDAX/propanil combinations. If flushing is necessary prior to establishment of the permanent flood, apply LONDAX/propanil combinations after the flush but prior to the establishment of the permanent flood.

Loss of the permanent flood following applications of LONDAX/propanil combinations may result in poor performance due to re-growth of treated plants or re-infestation by newly germinated weeds.

Runoff caused by rainfall, overflow, levee breach, seepage, or introduction of new water soon after treatment may reduce product performance.

**POST FLOOD APPLICATIONS**

**Spray Gallonage (Aerial or Ground Applied)**

For submerged weeds, use at least 5 gal of water per acre.

For emerged weeds, use at least 10 gal of water per acre to assist penetration of the spray mixture through the rice canopy. Control of emerged weeds may not be successful unless sufficient spray contacts the emerged surface of the weeds.

**Water Management**

At application, and for at least 7 days following application, the soil should be completely covered with at least 3" of water that is held static (water that remains in individual paddies). For the best weed control, LONDAX should be applied when the flood is to be held for a minimum of 2 to 3 weeks or after the establishment of the permanent flood. For submerged weeds, foliage of target weeds must remain covered with static water at application and during the water-holding period. LONDAX efficacy will be reduced in areas where soil and weed foliage are not sufficiently covered.

Runoff caused by rainfall, overflow, levee breach, or seepage occurring within 7 days of application may reduce product performance.

The field may be irrigated after application to maintain the flood level, but this may also reduce weed control.

**LONDAX APPLIED ALONE**

To control both submerged and emerged weeds, apply LONDAX at 1 to 1-2/3 oz per acre.

For applications to emerged weeds, combine LONDAX with a nonionic surfactant (minimum 80% active ingredient) at 0.25% v/v (1 qt per 100 gal), or a crop oil concentrate at 1% v/v (1 gal per 100 gal).

For both submerged and emerged weeds, use the higher rate where weed density is high.

**NOTE:** Alligatorweed (runners under 12") shows a marked reduction in growth and vigor when LONDAX is applied at a rate of 1-2/3 oz per acre.

**Submerged Weeds**

For best results, LONDAX should be applied to submerged weeds from pre-emergence to early post-emergence and to rice at the 1- to 3-leaf stage. The best control is achieved when LONDAX is applied to very young emerging and actively growing weeds (fewer than 3 leaves).

**NOTE:** For optimum control of Ducksalad (*Heteranthera limosa*) in dry-seeded rice, apply LONDAX to weeds no larger than 1 true leaf.

**Emerged Weeds**

LONDAX may be applied to emerged weeds after the establishment of the permanent flood. For best results, application timing should be based on the size of the weeds present. Weeds should have 3 to 4 leaves or extend 3" to 4" above the water surface at application. Refer to the **Weeds Controlled-Weeds Emerged above the Water Surface** table for species and maximum weed size controlled.

**NOTE:** Do not apply LONDAX to control emerged weeds if rainfall is expected within 4 hours after application.

**TANK MIXTURES**

LONDAX may be applied in tank mixtures with other herbicides and/or adjuvants registered for use in rice.

Refer to the above companion herbicide label(s) for all applicable use directions, restrictions (including any water-holding requirements), and precautions.

**LONDAX + "Permit"**

A tank mix of 0.75 to 1.0 ounce per acre of LONDAX plus 0.125 to 0.25 ounce per acre "Permit" may be applied for improved control of broadleaf weeds and sedges in rice using pre-flood application methods. Apply in a minimum of 10 gallons of spray volume per acre.

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When tank mixing LONDAX and "Permit" the use of a nonionic surfactant (minimum 80% active ingredient) at 0.25% v/v (1 quart per 100 gallons), or a crop oil concentrate at 1% v/v (1 gallon per 100 gallons) is recommended.

The tank mix of LONDAX plus "Permit" may also be applied in combination with labeled propanil-containing rice herbicides. Refer to the LONDAX, "Permit", and propanil-containing herbicide labels for any additional use directions (e.g. water management), restrictions or precautions.

**Weeds Controlled**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Weed Height (inches)</b>
Dayflower	<i>Commelina communis</i>	1 - 3
Flatsedge	<i>Cyperus iria</i>	3 - 10
Jointvetch, northern (Curly Indigo)	<i>Aeschynomene virginica</i>	2 - 4
Morningglory, entireleaf	<i>Ipomoea hederacea</i>	2 - 4
Morningglory, ivyleaf	<i>Ipomoea hederacea</i>	2 - 4
Morningglory, palmleaf	<i>Ipomoea wrightii</i>	2 - 4
Morningglory, pitted	<i>Ipomoea lacunose</i>	2 - 4
Nutsedge, yellow	<i>Cyperus esculentus</i>	3 - 10
Redstem	<i>Ammannia auriculata</i>	2 - 6
Sesbania, hemp (Coffeebean)	<i>Sesbania exaltata</i>	2 - 6

**DRY (DIRECT) APPLICATION**

LONDAX may be applied as a dry application (without dilution in a liquid carrier) by air in rice. When applied according to the instructions on this label, dry aerial applications of LONDAX will effectively control the broadleaf and sedge weeds listed in the **Weeds Controlled** section of this label. However, special equipment is required for this method of application. See the **Post Flood Applications - Submerged Weeds** for more information.

Note the following precautions when applying LONDAX dry by air:

- Follow the loading, application, and equipment calibration instructions provided by the equipment manufacturer.
- Apply using only equipment approved by both United Phosphorus, Inc. and the Federal Aviation Administration (FAA).
- Only certified applicators should apply LONDAX dry by air.

- Do not apply LONDAX dry (direct) by air to dry rice fields.
- Do not mix LONDAX with any liquid carrier (such as water or oil).
- Do not mix with any surfactant or crop oil.
- Most crops other than rice are highly sensitive to LONDAX. Avoid all direct or indirect (such as spray drift) contact with non-target crops (or land scheduled to be planted with crops), as injury may result.
- Do not use equipment designed to apply LONDAX dry by air to rice to apply any product to any crop other than rice, as injury may result.

## **DRY FERTILIZER IMPREGNATION**

In addition to its application as a water-mixed spray, LONDAX may also be applied as LONDAX impregnated on fertilizer granules.

### **Preparation**

Fertilizer should be impregnated with LONDAX only by properly equipped commercial fertilizer or chemical dealerships whose primary crop business is rice.

**NOTE:** Failure to thoroughly clean all traces of LONDAX from equipment used to mix or apply dry fertilizer for use on crops other than rice may result in crop injury.

Impregnate no more than 1-2/3 oz LONDAX on a minimum of 150 lb of dry fertilizer per acre.

To impregnate dry fertilizer with LONDAX, follow these steps:

1. Prepare a slurry using 1-2/3 oz LONDAX per pt of water. Do not exceed a slurry volume of 1 pt per 150 lb of fertilizer. Continuously agitate the mixture to keep LONDAX in suspension.
2. Mix the dry fertilizer and the LONDAX/water slurry in a closed rotary drum-type mixer, allowing sufficient time to ensure uniform coverage.
3. Place the delivery nozzle(s) inside the mixer, positioning them to provide uniform spray coverage of the tumbling fertilizer. Use LONDAX-impregnated dry fertilizer as soon as possible after blending.

Thoroughly clean blending and/or application equipment to remove all traces of LONDAX and LONDAX-impregnated fertilizer before using the equipment to mix or apply fertilizer to crops other than rice. See **Sprayer Cleanup** for more information.

**NOTE:** It is the responsibility of the individual and/or company selling the fertilizer/herbicide mixture to follow all state regulations relating to dry bulk fertilizer blending, registration, labeling, and application.

### **Application**

For best results, apply LONDAX-impregnated dry fertilizer at the same timing as water-mixed sprays: at pre-emergence to early post-emergence of submerged weeds. Rice should be at the 1-full-leaf stage of growth or larger. See **Application Information-Application Timing** for more information.

Spread the LONDAX-impregnated dry fertilizer uniformly by air with properly calibrated equipment.

**NOTE:** Correct water management during and after application is as important for LONDAX-impregnated dry fertilizer as for the water-mixed spray. See **Post Flood Applications - Water Management** for more information.

## **GENERAL INFORMATION - ALL STATES & PR**

### **Spray Equipment Preparation**

Spray equipment must be clean and free of deposits before using LONDAX. Deposits in spray equipment can trap LONDAX and inhibit cleanup of the spray equipment after use.

Therefore, before spraying LONDAX, clean the equipment according to the cleanup procedures specified on the label of the product previously sprayed. After completing this cleanup procedure, clean the spray equipment, loading hoses, batch tanks, and any other equipment that will be exposed to LONDAX according to the following procedures.

1. Steam-clean the tanks using a non-chlorine-based detergent, taking care to remove all physical residues.
2. Thoroughly rinse the sprayer, tanks, boom, and hoses with clean water. Be sure that the rinse water is free of sediment and agricultural chemicals.
3. Fill the tank one-half full with clean water and add "Nutra-sol" at 32 oz per 100 gal of water. Fill the tank to capacity with clean water. Flush the boom and hoses and agitate (and recirculate, if possible) the sprayer for 15 minutes. Drain the equipment, taking care to flush the nozzles and hoses thoroughly.
4. Remove the nozzles, screens, and strainers and clean them separately.
5. Thoroughly rinse the sprayer, tanks, boom, nozzles, and hoses with clean water to remove "Nutra-sol".
6. Follow the label directions of the product previously sprayed for proper rinsate disposal.

### **Spray Mixture Preparation**

#### **Wet Spray Application**

Thoroughly mix LONDAX with clean water (water that is free of sediment and agricultural chemicals) in the spray tank. Do not use water from paddies. Only approved drift control agents, e.g. "Chemtrol", may be used with LONDAX. Do not use any other additives except as directed by this label.

To ensure uniform mixing and application, agitate the mixture before application. If the mixture is not sprayed immediately after agitation, reagitate it before application. Always apply LONDAX spray preparations within 24 hours of product mixing, or the product may degrade.

Do not store LONDAX in nurse tanks or any other tanks used to store or transport clean water. Install one-way valves (anti-siphoning devices) on lines and hoses of

mixing/loading equipment to prevent contamination of nurse tanks or other clean water sources.

Mixing and application equipment exposed to LONDAX cannot be used for anything other than rice applications until it has been cleaned according to the procedures in the **Sprayer Cleanup** section of this label.

**Additional Mixing Instructions (wet spray)**

1. Fill the tank 1/4 to 1/3 full of clean water.
2. While agitating, add the required amount of LONDAX.
3. Continue agitation until the LONDAX is fully dispersed, at least 5 minutes.
4. Once the LONDAX is fully dispersed, maintain agitation and continue filling tank with water. The LONDAX should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add the required tank mix partner (other labeled rice herbicides, adjuvants, drift control agents, etc.).
6. If the mixture is not continuously agitated, settling may occur. If settling occurs, thoroughly re-agitate before using.
7. Apply LONDAX spray preparations within 24 hours of product mixing, or the product may degrade.
8. If LONDAX and a tank mix partner are to be applied in multiple loads, pre-slurry the LONDAX in clean water prior to adding to the tank. This will prevent the tank mix partner from interfering with the dissolution of the LONDAX.

**SPRAYER CLEANUP**

Before using equipment exposed to LONDAX to treat another crop, clean the sprayer and any other equipment (loading hoses, batch tanks, etc.) using the following procedure:

1. Steam-clean tank using a nonchlorine-based detergent, taking care to remove all physical residues.
2. Thoroughly rinse sprayer, tanks, boom, and hoses with clean water (free of sediment and agricultural chemicals).
3. Fill the tank one-half full with clean water and add "Nutra-sol" at 32 oz per 100 gal of water. Fill the tank to capacity with clean water. Flush the nozzles, boom, and hoses, and agitate (and recirculate, if possible) the sprayer for 15 minutes. Drain the equipment, taking care to flush the boom and hoses thoroughly.
4. Rinse tanks, hoses, and nozzles with clean water to remove "Nutra-sol".
5. Fill the tank one-half full with clean water and add 1 gal of 21% ammonia or 7 gal of 3% ammonia per 100 gal of water. Fill the tank to capacity with clean water. Flush the nozzles, boom, and hoses, and agitate (and recirculate, if possible) the sprayer for 15 minutes. Drain the equipment, taking care to flush the boom and hoses thoroughly.
6. Remove nozzles, screens, and strainers, and clean them separately.

7. Rinse tanks, booms, and hoses with clean water.
8. Repeat steps 5 and 7 an additional 3 times.
9. Rinse tanks, booms, and hoses to remove all traces of ammonia.
10. Dispose of the rinsate on site or at an approved waste disposal facility.

**NOTE:** When applying multiple loads of LONDAX several days in a row, the following procedure must be performed at the end of each day: partially fill the tank with fresh water, flush the boom and hoses, and allow to sit overnight.

**Attention:** Do not use chlorine bleach with ammonia. All traces of liquid fertilizer containing ammonia, ammonium nitrate or ammonium sulphate must be rinsed from the mixing and application equipment using water before adding chlorine bleach solution. Failure to do so will release a gas with a musty chlorine odor that can cause eye, nose, throat, and lung irritation. Do not clean equipment in an enclosed area.

Perform cleanup procedures on batch tanks and any other mixing equipment separately from aircraft hoppers. Take care to clean loading hoses and any other equipment or surfaces exposed to LONDAX.

## **SPRAY DRIFT MANAGEMENT**

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

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

## **IMPORTANCE OF DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets (>150 - 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **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 Surface Temperature Inversions** sections of this label.

## **Controlling Droplet Size - General Techniques**

- **Volume** - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** - Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**

- **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.

### **Controlling Droplet Size - Aircraft**

- **Number of Nozzles** - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

### **BOOM LENGTH AND HEIGHT**

- **Boom Length (aircraft)** - The boom length should not exceed 3/4 of the wing length, using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** - Application more than 10 ft above the canopy increases the potential for spray drift.
- **Boom Height (ground)** - Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

### **WIND**

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

**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**

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

### **SURFACE TEMPERATURE INVERSIONS**

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature 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 a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

### SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

### USE PRECAUTIONS

- Do not apply this product through any type of irrigation system.
- Do not apply more than 1-2/3 oz LONDAX per acre per year.
- In all the states of Arkansas, Florida, Louisiana, Mississippi, Missouri, Texas & Puerto Rico:
  - Do not graze treated fields or feed treated forage within 60 days of the last application.
  - Do not apply LONDAX within 60 days of harvest.
- In the state of California:
  - Do not graze treated fields or feed treated forage within 80 days of the last application.
  - Do not apply LONDAX within 80 days of harvest.
- Do not apply LONDAX to rice under stress from abnormal weather or growing conditions, drought, disease, or insect or prior herbicide injury, as crop injury may occur. Severe stress, drought, disease, or insect damage following application may also result in crop injury.
- Water drained directly from treated fields must not be used to irrigate other crops.
- Do not mix LONDAX with any additives except as directed by this label.
- Do not use LONDAX on wild rice (*Zizania spp.*)
- Do not rotate to crops other than rice for 120 days following application
- Do not harvest crayfish (crawfish) prior to harvesting the rice.
- Do not apply LONDAX dry (direct) by air with any other application. • Do not use a swath width greater than 60 feet when applying LONDAX dry (direct) by air.
- Apply LONDAX dry (direct) by air at a maximum of no greater than 1/2 the wing span of the aircraft.
- Do not apply LONDAX dry (direct) by air to dry rice fields.
- Do not apply LONDAX within 60 feet of sensitive crops.

**STORAGE AND DISPOSAL**

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

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

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

**CONTAINER DISPOSAL:** Triple-rinse (or equivalent) the container. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or, if allowed by state and local authorities, by burning. If the containers are burned, stay out of smoke.

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