

66222-251

6/25/2013

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

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

Kristen B. Knox  
Makhteshim Agan of North America, Inc.  
3120 Highwoods Blvd. #100  
Raleigh, NC 27604

JUN 25 2013

Subject: Notification; Per PR-Notice 98-10  
MANA 25311  
EPA Reg. No. 66222-251  
Date Submitted: June 19, 2013

Dear Ms. Knox:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 dated June 19, 2013 for the product referenced above. The Registration Division (RD) 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 any questions regarding this letter, please contact Kable Bo Davis at (703) 306-0415 or [davis.kable@epa.gov](mailto:davis.kable@epa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "KM" or similar initials, with a flourish underneath.

Kathryn Montague  
Product Manager 23  
Herbicide Branch  
Registration Division (7505P)

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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 66222-251	2. EPA Product Manager Kathryn Montague	3. Proposed Classification <input type="checkbox"/> None <input type="checkbox"/> Restricted
4. Company/Product (Name) MANA 25311	PM# 23	
5. Name and Address of Applicant (Include ZIP Code) Makhteshim Agan of North America, Inc. 3120 Highwoods Blvd #100 Raleigh, NC 27604 <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>  <b>JUN 25 2013</b>
<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 to correct a typo. This notification is consistent with the provisions of PR Notice 98-10 and EPA regulation 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula for this product. I understand that it is a violation of 18 U.S. C. Section 1001 to willfully make any false statement to the 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 type="checkbox"/> No	Unit Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No	Water Soluble Packaging <input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Metal	<input type="checkbox"/> Plastic
				<input type="checkbox"/> Glass	<input type="checkbox"/> Paper
* Certification must be submitted		If "Yes" Unit Packaging wgt.	No. per container	If "Yes" Package wgt	No. per container
3. Location of Net Contents Information <input type="checkbox"/> Label <input type="checkbox"/> Container		4. Size(s) Retail Container		5. Location of Label Directions <input type="checkbox"/>	
6. Manner in Which Label is Affixed to Product <input type="checkbox"/> Lithograph <input 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 Kristen B. Knox	Title Federal Regulatory Manager	Telephone No. (Include Area Code) 919-256-9337
<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 Federal Regulatory Manager	
4. Typed Name Kristen B. Knox	5. Date June 19, 2013	

June 19, 2013

Document Processing Desk (NOTIF)  
Office of Pesticide Programs (7504P)  
U.S. EPA, One Potomac Yard  
2777 S. Crystal Drive, Room S-4900  
Arlington, VA 22202

www.manainc.com

RE: MANA 25311 (EPA Reg. No. 66222-251)  
Notification to correct a typo

Dear Ms. Montague:

Makhteshim Agan of North America (MANA) Inc. is notifying the Agency that we are correcting a typo. On page 16 of the approved Master Label it states:

**“Parallel Alone:** If crops treated with MANA 25311 is lost, any crop on this label may be planted immediately...”

**“Parallel Tank Mixtures:** For rotational crop restrictions for MANA 25311 used in tank mixtures...”

This language was taken from our Parallel label (metolachlor) #66222-87, and it is very evident that the name “Parallel” should have been replaced with “MANA 25311” in these two instances.

This notification is consistent with the provisions of PR Notice 98-10 and EPA regulation 40 CFR 152.46, and no other changes have been made to the labeling or the confidential statement of formula for this product. I understand that it is a violation of 18 U.S. C. Section 1001 to willfully make any false statement to the 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 support of this submission, the following documents are attached:

- Application for Pesticide Registration (EPA Form 8570-1)
- One annotated copy of the label
- One clean copy of the label
- Copy of correspondence with Grant Rowland that we can correct this via notification

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If you have any questions or concerns with this submission, please contact me directly at phone: (919)256-9337 or e-mail: [kknox@manainc.com](mailto:kknox@manainc.com).

Best regards,

Kristen B. Knox  
Federal Regulatory Manager

P: (919) 256-9300  
F: (919) 256-9308

3120 Highwoods Blvd.  
Suite 100  
Raleigh, NC 27604



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GROUP 2 & 15 HERBICIDES

# MANA 25311

(Alternate Brand Name: Pummel)

NOTIFICATION  
JUN 25 2013

- Herbicide
- For control of certain grasses and broadleaf weeds in soybeans

<b>ACTIVE INGREDIENT:</b>	<b>% BY WT.</b>
Metolachlor*	55.49%
Imazethapyr ammonium**	2.94%
<b>OTHER INGREDIENTS</b>	<b>41.47%</b>
<b>TOTAL:</b> .....	<b>100.00%</b>

Contains 5.0 lbs. of metolachlor and 2.77% or 0.25 lbs. of imazethapyr acid per gallon.  
 \*CAS No. 51218-45-2  
 \*\*CAS No. 101917-66-2

## KEEP OUT OF REACH OF CHILDREN CAUTION

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta le haya sido explicada ampliamente. (If you do not understand this label, find someone to explain it to you in detail.)

**Manufactured by:**  
 Makhteshim Agan of North America, Inc. (MANA)  
 3120 Highwoods Blvd., Suite 100  
 Raleigh, NC 27604

How can we help? 1-866-406-MANA (6262)

EPA Reg. No. 66222-xxx

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

### NET CONTENTS: 2.5, 270 GALLONS (9.45 LITERS)

#### 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>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to by a poison control center or doctor.</li> <li>• Do not give anything to an unconscious person.</li> </ul>
<b>IF ON SKIN</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty o water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye 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.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>

Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact Prosar at 1-877-250-9291 for emergency medical treatment information.

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

**CAUTION:**

Harmful if swallowed. Avoid contact with skin, eyes or clothing. Causes moderate eye irritation. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Wear long-sleeved shirt and long pants, socks, shoes, and gloves. [Wear protective eyewear.]\*

\*[Protective eyewear may be specified, if appropriate.] This product may cause skin sensitization reaction in some people.

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**Applicators and other handlers must wear:**

- Coveralls over short-sleeved shirt and short pants
- Chemical-resistant gloves such as barrier laminate or Viton
- Chemical-resistant footwear plus socks
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing or loading

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/ maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Mixers and loaders supporting aerial applications are required to use closed systems. The closed system must be used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40CFR 170.240(d)(4)]. When using the closed system, the mixers' and loaders' PPE requirements may be reduced or modified as specified in the WPS.

When handlers use closed systems, enclosed cabs, or aircraft 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 thoroughly with soap and water 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**

For Terrestrial Uses: Do not apply directly to water or areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash water or rinsate. DO NOT clean equipment or dispose of equipment washwaters in a manner that will contaminate water resources.

Do not apply under conditions which favor runoff or wind erosion of soil containing this product to non-target areas.

To prevent off-site movement due to run-off or wind erosion:

- Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
- Do not apply to impervious substrates, such as paved or highly compacted surfaces.
- Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at least 1/2 inch of rainfall has occurred between application and the first irrigation.

**GROUND WATER ADVISORY**

This product contains chemicals which have the potential to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

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Imazethapyr has properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

**SURFACE WATER ADVISORY**

Metolachlor has the potential to contaminate surface water through ground spray drift. Under some conditions, metolachlor may also have a high potential for runoff into surface water (primarily via dissolution in runoff water) for several months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, and 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.

**MIXING/LOADING INSTRUCTIONS:**

Care must be taken when using this product to prevent back siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check-valves or antisiphoning devices must be used on all mixing and/or irrigation equipment.

This product may not be mixed or loaded within 50 ft of perennial or intermittent streams and rivers, natural or impounded lakes, and reservoirs. This product may not be mixed/loaded or used within 50 ft of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of this product into or from pesticide handling or application equipment or containers within 50 ft of any well are prohibited unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash-water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

**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 the possession of the user at the time of pesticide application. Observe all precautions and limitations in this label. DO NOT use MANA 25311 other than in accordance with the instructions set forth on this label. The use of MANA 25311 not consistent with this label can result in injury to crops, animals, or persons. Keep container closed to avoid spills and contamination. 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. DO NOT apply this product through any type of irrigation system. For any requirements specific to your State or Tribe, consult the State or Tribal 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 intervals. 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.**  
Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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, wear:

- Coverall.

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- Chemical-resistant gloves such as barrier laminate or Viton
- Shoes plus socks

**IMPORTANT:** FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

**Steps to be taken in case material is released or spilled:**

- Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal.
- Remove contaminated clothing and wash affected skin area with soap and water.
- Wash clothing before re-use.
- Keep the spill out of all sewers and open bodies of water.

**USE RESTRICTIONS**

Not for sale, use or distribution in Nassau or Suffolk Counties, NY, or in the state of California.

Only for use in certain states. Refer to the map in the "MANA 25311 HERBICIDE USE AREAS" section to determine if this product is allowed for use in your state.

Apply only one application per year.

Do not apply earlier than 45 days prior to planting soybeans.

Do not apply through any type of irrigation equipment.

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.

DO NOT graze or feed treated soybean forage, hay or straw to livestock.

DO NOT apply products containing chlorimuron ethyl (Classic®, Canopy®, Lorox Plus®, etc.); or imazaquin (Scepter®, Squadron®, Scepter®-O.T., or Scepter® 70DG) or products containing imazethapyr (Pursuit®, Pursuit® Plus, Thunder™, Thunder Master®) the same year as MANA 25311 or injury to follow crops may occur.

DO NOT tank-mix MANA 25311 with clomazone containing herbicides (Command® or Commence®).

**PRODUCT INFORMATION**

MANA 25311 is a selective herbicide which may be applied pre-plant or pre-emergence for control or suppression of broadleaf weeds, grasses and sedges in soybeans.

Certain germinating broadleaf weeds, grasses and sedges may be controlled or suppressed by soil residual activity from either pre-plant or, pre-emergent applications if rainfall occurs shortly after application. The extent and consistency of soil activity is dependent upon soil characteristics, ground cover, amount of rainfall following application and the rate of MANA 25311 used.

MANA 25311 also kills weeds by root and/or foliage uptake and rapid translocation to the growing points. Adequate soil moisture is important for optimum MANA 25311 activity. When adequate soil moisture is present, MANA 25311 will provide residual control of susceptible germinating weeds, activity on established weeds will depend on the weed species and the location of its root system in the soil.

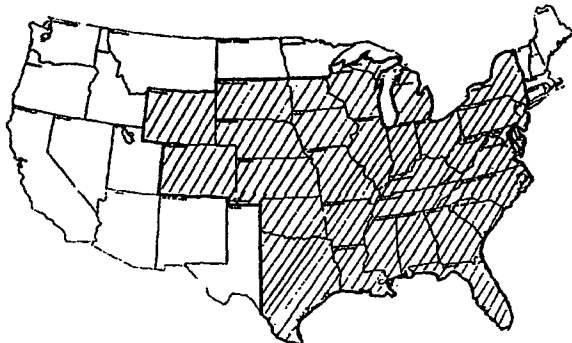
Rainfall or overhead irrigation is necessary to move MANA 25311 into the weed germination zone for effective weed control. The amount of rainfall or irrigation required following application depends on existing soil moisture, soil texture and organic matter content. Sufficient water to moisten the soil to a depth of 2 inches is normally adequate. If adequate moisture is not received within 7 days after treatment, a cultivation or alternative herbicide is recommended to control escaped weeds. When adequate moisture is received after dry conditions, MANA 25311 will provide

residual control of susceptible germinating weeds; activity on established weeds will depend on the weed species and the location of its root system in the soil.

Occasionally, internode shortening and/or temporary yellowing/ speckling of crop plants may occur following MANA 25311 applications. These effects occur infrequently and are temporary. Normal growth and appearance should resume within 1 to 2 weeks.

**MANA 25311 HERBICIDE USE AREAS**

MANA 25311 may be applied to soybeans only in the states or parts of states shaded in the map below: (In Minnesota MANA 25311 may be applied south of state highway 210. In Texas, MANA 25311 may be applied east of state highway 83).



**Use Rate -**

Apply MANA 25311 at a broadcast rate of 1.6 to 2 pints per acre for all methods of application:

1. Pre-plant surface (including minimum and no-till).
2. Pre-plant incorporated or pre-emergence. At this broadcast rate, one gallon of MANA 25311 will treat 4 acres of soybeans.

SOIL TEXTURE	Broadcast Rates Per Acre	
	Less than 3% Organic matter	3% or more Organic Matter
	MANA 25311	MANA 25311
Course	Do not use	1.6 pt
Medium	2 pt	2 pt
Fine	2 pt	2 pt*
Muck or Peat (Soils with more than 20% organic matter)	Do not use	

\* Add metolachlor (Parallel<sup>®</sup> PCS) to the spray mixture at 0.4 pt/a, or if MANA 25311 is applied 15 to 45 days prior to planting for soil applications.

NOTE: Only one application of MANA 25311 may be made during the season.  
 A maximum of 1.25 lbs/A of MANA 25311 can be applied per year.  
 A maximum of 0.063 lbs/A of imazethapyr can be applied per year.  
 A maximum of 2.49 lbs/A of metolachlor can be added per year.

**SOIL APPLIED - GRASS and WEEDS CONTROLLED APPLICATION**



MANA 25311 may be applied in no-till, minimum tillage, or conventional tillage soybean production. Apply MANA 25311 either pre-plant surface-applied (in no-till or minimum tillage), pre-plant incorporated, or pre-emergence. Apply MANA 25311 up to 45 days prior to planting soybeans. Follow specific instructions as directed throughout the label. After MANA 25311 is applied to susceptible weeds, they either die or growth stops and the weeds are no longer competitive with the crop. The weed killing activity of MANA 25311 involves herbicide uptake by weed roots and rapid translocation to the growing points. Therefore, adequate soil moisture is important for optimum MANA 25311 activity. When adequate soil moisture is present, MANA 25311 will provide residual control of susceptible germinating weeds.

When applied as directed, MANA 25311 will control or reduce competition from grass and broadleaf weeds listed below.

NOTE: C - Control, R - Reduced Competition

Broadleaf Weeds Controlled	Preplant Incorporated	Preplant Pre-emergent
Anoda, spurred	C	C
Beggarweed, Florida	R	R
Buffalobur	C	
Carpetweed	C	C
Cocklebur, common*	C	
Devilsclaw	C	
Galinsoga	C	C
Jimsonweed	C	
Kochia	C	C
Lambquarters, common	C	
Mallow, Venice	R	
Morningglory		
Entireleaf	R	
Ivyleaf	R	
Pitted	R	
Smallflower	C	C
Tall	R	
Mustard species	C	C
Nightshade		
Black	C	C
Eastern black	C	C
Hairy	C	C
Pigweed		
Palmer	C	C
Redroot	C	C
Smooth	C	C
Spiny	C	C
Poinsettia, wild	C	C
Puncturevine	C	C
Purslane, common	C	C
Pusley, common	C	C
Ragweed		
Common	R	C C C C C
Giant	R	C C C C C
Sida, prickly (teaweed)	C	C C C C C
Smartweed		
Ladysthumb	C	C C C C C
Pennsylvania	C	C C C C C
Spurge		
Prostrate	C	C C C C C
Spotted	C	C C C C C
Sunflower, common	C	
Velvetleaf	C	C C C C C
Waterhemp, tall	C	C

\*Cultivation and/or a post-emergence herbicide may be required for season-long control.  
See Resistance Section Below

Grass Weeds Controlled	Preplant Incorporated	Pre-emergence
Barnyardgrass	C	C
Crabgrass		
large	C	C
Smooth	C	C
Crowfootgrass	C	C
Cupgrass, Southwestern	C	
Foxtail		
Giant	C	C
Green	C	C
giant green	C	C
robust purple	C	C
robust white	C	C
Yellow	C	C
Goosegrass	C	C
Johnsongrass		
Seedling	C	C
Rhizome	R	
Millet		
Foxtail	C	C
wild proso	R	
Panicum		
Fall	C	C
Texas	R	
Sandbur, field	R	R
Shattercane	R	
Signalgrass, broadleaf	C	
Witchgrass	C	C

See Resistance Section Below

Sedges Controlled	Preplant Incorporated	Pre-emergence
Nutsedge		
Yellow	R	R
Purple	R	R

**HERBICIDE COMBINATIONS AND SEQUENTIAL PROGRAMS**

MANA 25311 is recommended as part of a planned post program with preemergence application followed by post emergence products. MANA 25311 provides initial control and residual activity on a broad range of weeds while delivering multiple modes of action in a diverse weed management system.

**Foundation Treatment for Planned Two-pass Weed Control Programs:** MANA 25311 may be applied in conventional, Libertylink soybeans and glyphosate-tolerant soybeans as a pre-emergence application to reduce competition from weeds for a period of up to 45 days when followed by a planned post-emergence herbicide application. Be sure to consult the separate post-emergence section of this label for weeds controlled, optimum weed size, application rate, additional use directions, precautions, and limitation before use.

**HERBICIDES THAT MAY BE APPLIED POSTEMERGENCE FOLLOWING MANA 25311**

To provide additional control of certain weeds, MANA 25311™ can be applied alone, sequentially in tank mixtures with post-emergence herbicides. Post-emergence herbicides that may be applied with MANA 25311 include: Aim®, Arrow®, Assure® II, Basagran®, Cobra®, FirstRate®, Fusilade® DX, Fusion®, Harmony® GT XP, Liberty® 280SL, Poast®, Poast Plus®, Resource®, Roundup® Brands<sup>2</sup>, Select® and Ultra Blazer® or their generic equivalents.

<sup>1</sup>Use on LibertyLink® soybean only.

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<sup>2</sup>Use on glyphosate-tolerant soybeans only.

When applied in soil application in areas with heavy grass pressure, MANA 25311 can be tank-mixed with a grass herbicide such as Prowl<sup>®</sup> or Triflurex<sup>®</sup> HPF for improved grass control.

See recommendation for addition of glyphosate (such as Roundup PowerMAX<sup>®</sup>) or paraquat (such as Gramoxone<sup>®</sup> or Parazone<sup>®</sup>) to the spray solution under the NO-TILL OR Reduced Tillage section. When MANA 25311 is used in combination with another herbicide, refer to the respective label for rates, methods of application, proper timing, weeds controlled, restrictions and precautions. Always use in accordance with the more restrictive label restrictions and precautions. No label dosage should be exceeded. MANA 25311 cannot be mixed with any product with a label prohibiting such mixtures.

**INTEGRATED PEST MANAGEMENT**

MANA 25311 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. Application of this product should be based on IPM principles and practices including 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.

**RESISTANCE**

**Mode of Action:** MANA 25311 is a selective herbicide for the control or suppression of certain grass, broadleaf and sedge weeds in soybeans. MANA 25311 is a mixture of the active ingredients metolachlor and imazethapyr. Metolachlor is a biosynthesis inhibitor (Group 15 mode of action) preventing cell division in emerging weeds and imazethapyr is an ALS inhibitor (Group 2) preventing amino acid synthesis. 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 biotypes 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.

**PRODUCT INFORMATION**

**Activation:** MANA 25311 must be activated by a small amount of soil moisture following application. In areas of low rainfall, a pre-emergence application should be followed with light irrigation of 0.25 to 0.5 inch of water. Do not apply heavy irrigation immediately after application. As with many surface-applied herbicides, weed control and crop tolerance may vary with rainfall and/or soil texture.

**Crop Rotation:** Do not rotate to food or feed crops other than those listed on this label. See the **CROP ROTATION** section of this label for specific instructions on crop rotation. Crop injury may result if crop rotation guidelines are not followed.

**Replanting:** If replanting is necessary in fields previously treated with MANA 25311, the field may be replanted to soybeans. Rework the soil no deeper than the treated zone. Before replanting, refer to the specific crop use sections for directions, precautions and restrictions about replanting.

**Application Rate Ranges:** Where a rate range is provided within a soil texture or organic matter classification, use a lower rate on soils that are relatively coarse-textured and/or low in organic matter. Use a higher rate on soils that are relatively fine-textured and/or high in organic matter.

**MIXING INSTRUCTIONS AND EQUIPMENT CLEANUP**

Prepare no more spray mixture than is needed for the immediate operation. Thoroughly clean the spray equipment before using MANA 25311. Vigorous agitation is necessary to maintain uniformity of the spray mixture. Maintain

maximum agitation throughout the spraying operation. Do not allow the spray mixture to stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area. To avoid injury to sensitive crops, spray equipment used for MANA 25311 applications must be drained and thoroughly cleaned with water before being used to apply other products.

**Mixing and Loading:** Use care when mixing or loading MANA 25311 to prevent back-siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or reinstates. Check-valves or ant siphoning devices must be used on all mixing and/or irrigation equipment.

MANA 25311 may not be mixed or loaded within 50 ft. of perennial or intermittent streams and rivers, natural or impounded lakes and reservoirs. MANA 25311 may not be mixed/loaded or used within 50 ft. of all wells, including abandoned wells, drainage wells, and sink holes. Operations that involve mixing, loading, rinsing, or washing of MANA 25311 into or from pesticide handling or application equipment or containers within 50 ft. of any well are prohibited, unless conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be positioned on or moved across the pad. Such a pad shall be designed and maintained to contain any product spills or equipment leaks, container or equipment rinse or wash water, and rain water that may fall on the pad. Surface water shall not be allowed to either flow over or from the pad, which means the pad must be self-contained. The pad shall be sloped to facilitate material removal. An unroofed pad shall be of sufficient capacity to contain at a minimum 110% of the capacity of the largest pesticide container or application equipment on the pad. A pad that is covered by a roof of sufficient size to completely exclude precipitation from contact with the pad shall have a minimum containment capacity of 100% of the capacity of the largest pesticide container or application equipment on the pad. Containment capacities as described above shall be maintained at all times. The above-specified minimum containment capacities do not apply to vehicles when delivering pesticide shipments to the mixing/loading site.

**Mixing MANA 25311 in Water or In Liquid Fertilizers:** When mixing MANA 25311 alone, add 1/3 of the required amount of water or fluid fertilizer to the spray or mixing tank and then, with the agitator running, add MANA 25311 to the spray tank. Continue agitation while adding the remainder of the water or fluid fertilizer. Begin application of the spray solution after MANA 25311 has completely dispersed in the water or fluid fertilizer. Maintain agitation until all of the mixture has been applied.

**APPLICATIONS WITH LIQUID FERTILIZER**

MANA 25311 can be applied to the soil in liquid fertilizers alone or in combination with Prowl<sup>®</sup>, trifluralin (such as Triflurex<sup>®</sup> HFP), metolachlor (such as Parallel<sup>®</sup>). Follow all MANA 25311 label recommendations regarding incorporation, timing of application, special instructions and precautions. Apply treatments in 20 or more gallons of liquid fertilizer per acre with ground equipment. Always test the compatibility of MANA 25311 with liquid fertilizer before mixing in the spray tank.

When mixing MANA 25311 with tank mixtures, add 1/3 of the required amount of water or fluid fertilizer to the mix tank. Start the agitator running before adding any tank mix partners. In general, tank mix partners should be added in this order: products packaged in water-soluble packaging, wet table powders, wet table granules (dry flowerless), liquid flowerless, liquids such as MANA 25311, and emulsifiable concentrates. Always allow each tank mix partner to become fully dispersed before adding the next product. Provide sufficient agitation while adding the remainder of the water. Maintain agitation until all of the mixture has been applied.

**APPLICATIONS IN COMBINATION WITH OTHER HERBICIDES**

When MANA 25311 is tank mixed with paraquat (such as Gramoxone<sup>®</sup>, Parazone<sup>®</sup>) (pre-emergence to soybeans only), or glyphosate (such as Roundup PowerMAX<sup>®</sup>), add MANA 25311 to the tank first, then add paraquat (such as Gramoxone<sup>®</sup>, Parazone<sup>®</sup>) or Roundup. When paraquat (such as Gramoxone, Parazone) is included in a tank mixture, add 8 ounces of non-ionic surfactant per 100 gallons of spray mixture as the last ingredient in the tank.

**Important:** When using MANA 25311 in tank mixtures, all products in water-soluble packaging should be added to the tank and mixed with plain water before any other tank mix partner, including MANA 25311. Allow the water-soluble packaging to completely dissolve and the product(s) to completely disperse before adding any other tank mix partner to the tank. Water-soluble packets will not properly dissolve in most spray solutions that contain fluid fertilizers.

If using MANA 25311 in a tank mixture, observe all directions for use, crop/sites, use rates, dilution ratios, precautions, and limitations that appear on the tank mix product label. No label dosage rate should be exceeded, and the most restrictive label precautions and limitations should be followed.

MANA 25311 is compatible with most common tank mix partners. However, the physical compatibility with tank mix partners should be tested before use. To determine the physical compatibility of MANA 25311 with other products, use a jar test, as described below.

**MANA 25311 Compatibility Testing:** To ensure compatibility of MANA 25311 with other pesticides, perform a jar test before tank mixing. The following test assumes a spray volume of 25 gallons per acre. For other spray volumes, make appropriate changes in the ingredients.

**Note:** Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray for pre-plant surface, pre-plant incorporated, or pre-emergence applications only. Because liquid fertilizers vary, even within the same analysis, **always check compatibility with pesticide(s) before use.** Incompatibility of tank mixtures is more common with suspensions of fertilizer and pesticides.

**Test Procedure:**

1. Add 1.0 pint of carrier (fertilizer or water) to each of two one quart jars with tight lids. **Note:** Use the same source of water that will be used for the tank mix and conduct the test at the temperature the tank mix will be applied.
2. To one of the jars, add 1/4 teaspoon or 1.2 milliliters of a compatibility agent- approved for this use, such as Unite® (1/4 teaspoon is equivalent to 2.0 pints per 100 gallons spray). Shake or stir gently to mix.
3. To both jars, add the appropriate amount of pesticide(s) in their relative proportions based on recommended label rates. If more than one pesticide is used, add them separately with dry pesticides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix.
4. After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15 to 30 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (a) Slurry the dry pesticide(s) in water before addition, or (b) add 1/2 the compatibility agent to the fertilizer or water and the other 1/2 to the emulsifiable concentrate or flowable pesticide before addition to the mixture. If incompatibility is still observed, do not use the mixture.
5. After compatibility testing is complete, dispose of any pesticide wastes in accordance with the **Storage and Disposal** section of this label.

**Equipment Cleanup After MANA 25311 Application:** Before application of MANA 25311, the spray equipment must be cleaned. Follow the cleanup procedures specified on the labels of the previously applied products. If no clean-up directions are provided, follow the steps provided below for cleaning up after spraying MANA 25311.

After application of MANA 25311, equipment cleanup is very important. Because some crops, are sensitive to low rates of MANA 25311, special attention must be given to cleaning equipment before spraying a crop other than those registered for use and on this label. Mix only as much spray solution as needed. Immediately after spraying, clean equipment thoroughly using the following procedure:

1. Flush tank, hoses, boom, and nozzles with clean water.
2. Prepare a cleaning solution of one gallon of household ammonia per 50 gallons of water. Many commercial spray tank cleaners may be used as well. Consult your MANA representative for a partial listing of approved tank cleaners and more information about proper tank cleaning procedures. Do not use chlorine-based cleaners such as Clorox®.
3. When available, use a pressure washer to clean the inside of the spray tank with this solution. Take care to wash all parts of the tank, including the inside top surface. Completely fill the sprayer with the cleaning solution to ensure contact of the cleaning solution with all internal surfaces of the tank and plumbing. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for **at least 15 minutes**. All visible deposits must be removed from the spraying system.
4. Flush hoses, spray lines, and nozzles for at least one minute with the cleaning solution.
5. Dispose of rinsate from steps 1 to 3 as described under the **Environmental Hazards** section of the **Precautionary Statements**.
6. Repeat steps 2 to 5.

- 7. Remove nozzles, screens, diaphragm check valves and strainers and clean separately in the ammonia cleaning solution after completing the above procedures.
- 8. Rinse the complete spraying system with clean water.

**APPLICATION INSTRUCTIONS**

MANA 25311 provides effective weed control in conventional, minimum and no-till conservation tillage systems. MANA 25311 can be applied as an early pre-plant, pre-plant, incorporated, or pre-emergence treatment in soybeans. The application method of choice will depend on the anticipated weed spectrum and the preference of the applicator. If weeds have emerged see instructions under NO-TILL OR REDUCED TILLAGE section.

NOTE: See instructions under use for applications made 15 to 30 days prior to planting and application to soils containing greater than 4% organic matter. MANA 25311 controls weeds by uptake by weed roots, and translocation to the growing points where it stops weed growth.

Adequate soil moisture is required for optimum activity of MANA 25311 for surface applications, rainfall or overhead irrigation is necessary to move MANA 25311 into the weed germination zone. The amount of rainfall or irrigation required following application depends on existing soil moisture, soil texture and organic matter content. Sufficient water to moisten the soil to a depth of 2 inches is normally adequate. If adequate moisture is not received within 7 days after a surface-applied treatment, then cultivation is recommended to control escaped weeds. When adequate moisture is received after dry conditions, MANA 25311 will provide residual control of susceptible germinating weeds; activity on established weeds will depend on the weed species and the location of its root system in the soil.

In ridge-till plantings, MANA 25311 may be applied early pre-plant or at soybean planting. If the herbicide is banded over the row, cultivation will be required for weed control between the beds. If cultivation is not possible or if weed pressure is heavy, apply MANA 25311 in a broadcast application. Use proportionally less MANA 25311 per acre in a band versus a broadcast application. If rainfall does not occur within 7 days of application, a rotary hoe incorporation will enhance weed control. See PREEMERGENCE APPLICATIONS and PREPLANT INCORPORATED APPLICATIONS for further information.

MANA 25311 may be applied by ground spray equipment and aerial spray equipment. As discussed below, use a minimum of 10 gallons per acre of spray mixture for ground application and 5 gallons per acre for aerial application.

Prepare no more spray mixture than is needed for the immediate operation. Clean spray equipment is very important so be sure to thoroughly clean before mixing MANA 25311. Vigorous agitation is necessary to maintain uniformity of the spray mixture. Maintain maximum agitation throughout the spraying operation. Do not allow spray mixture to stand overnight in the spray tank. Flush the spray equipment thoroughly following each use and apply the rinsate to a previously treated area.

**Surface Applications Made Before Planting**

Apply MANA 25311 up to 30 days prior to planting soybeans in minimum tillage or no-tillage systems. If sufficient rain does not occur before planting to activate MANA 25311, shallow incorporation before planting will enhance weed control.

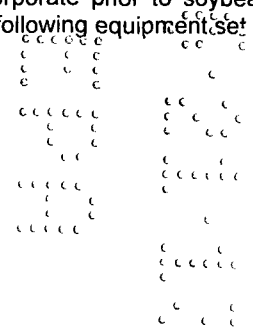
**Pre-emergence Applications**

Apply MANA 25311 during planting (behind the planter), or after planting but before crop emergence.

**Pre-Plant Incorporated Applications**

MANA 25311 may be applied following land preparation and should be thoroughly incorporated to a depth of 1 to 2 inches. Application may be made up to 14 days prior to planting (early pre-plant). Incorporate prior to soybean planting and within 7 days of application. Mechanical incorporation can be achieved by the following equipment, set to incorporate the product to a depth of 1 to 2 inches:

- (a) Disk harrow
- (b) PTO-driven equipment (tillers, cultivators, hoes)
- (c) Rolling cultivator
- (d) Field cultivator
- (e) LELY-Roterra 5
- (f) Do-All s



If soybeans are planted on beds, apply and incorporate after bed formation using PTO-driven equipment or a rolling cultivator. For optimum weed control MANA 25311 should be maintained in the surface 1-2 inches of the finished bed.

**No-Till or Reduced Tillage**

MANA 25311 is effective in controlling weeds in conservation tillage production systems. Apply MANA 25311 treatments up to 30 days prior to planting (early pre-plant) but before the V3 crop stage. To ensure thorough coverage, use higher water volumes such as 20 gallons of water per acre. Use higher gallonage for fields with dense vegetation or heavy crop residues. Adjust the boom height to ensure proper coverage of weed foliage (according to the manufactures recommendation). The nozzle spacing on the boom should be 20 inches. Use only standard flat-fan nozzle tips. Use ground equipment only.

MANA 25311 will control emerged problem weed such as velvetleaf, smartweed, common cocklebur, and pigweeds. The weed size should not exceed 3" for velvetleaf and smartweed, and 8" for cocklebur and pigweeds. Add surfactant to the spray mixture at the rate of 1qt./100 gal. and a nitrogen based fertilizer (such as 28%N, 32%N or 10-34-0) at the rate of 1-2 qt./acre for optimum activity. Ammonium sulfate (spray grade) may be substituted for liquid fertilizer at the rate of 4 lbs. per acre. If other vegetation is present (not controlled by MANA 25311), apply paraquat or glyphosate (such as Roundup PowerMAX®) in combination with MANA 25311. Refer to the respective labels for rates, methods of application, proper timing, weeds controlled, restrictions, and precautions. Use ground equipment only.

NOTE: Adjust planters to ensure adequate seed coverage.

**SPRAYING INSTRUCTIONS**

DO NOT apply when wind velocity is greater than 10 mph. or when spray may be carried to sensitive crops. Sensitive crops include leafy vegetables, potatoes, sugarbeets and cotton.

**Ground Application:** Apply MANA 25311 alone or in tank mixtures by uniformly with properly calibrated ground spray equipment in 10 to 40 gallons of spray mixture per acre, unless otherwise specified. Sprayers should be calibrated often. If MANA 25311 is applied in combination with wettable powder or dry flowable formulations, screens and strainers with a minimum 50-mesh size should be used.

If MANA 25311 is applied in a band, calculate the amount of herbicide needed for band treatment by the formula below:

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \frac{\text{broadcast rate}}{\text{per acre}} = \frac{\text{amount needed}}{\text{per acre of field}}$$

**AERIAL APPLICATION:**

Uniformly apply MANA 25311 with properly calibrated aerial equipment in 5 or more gallons of spray mixture per acre. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. To avoid injury to sensitive crops from drift, aerial applicators must adhere to the following SPECIAL AERIAL USE DIRECTIONS AND PRECAUTIONS: Nozzle height above ground must be a maximum of 10 feet above the crop with low drift nozzles at a maximum pressure of 40 psi. Nozzles must be pointed toward the rear of the aircraft. The downward angle of the nozzle should not be greater than 20 degrees.

To minimize wing-tip vortex roll, nozzles or spray boom must not be located any closer to the end of wing or rotor than three-fourths the distance from the center of the aircraft. Use a maximum spray pressure of 40 psi. A buffer zone must be established between the area to be sprayed and sensitive crops.

DO NOT spray when wind velocity is greater than 5 mph. Applicator is responsible for any loss of damage which results from spraying MANA 25311 in any manner other than recommended on this label. In addition, applicator must follow all applicable state and local regulations and ordinances in regard to spraying.

**SPRAY DRIFT MANAGEMENT**

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 formulations.

1. The distance of the outermost 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 downward more than 45 degrees.

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

The applicator should be familiar with and take into account the information covered in the **Spray Drift Reduction Advisory Information** section below.

**Spray Drift Reduction Advisory Information**

**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 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** – 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.
- **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.
- **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.
- **Boom Length** - For some use patterns, reducing the effective boom length to less than  $\frac{3}{4}$  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 downward. 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 to 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**

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

**Temperature Inversions**

Drift potential is high during a temperature inversion. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally 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 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 an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**

Apply MANA 25311 only when the potential for drift to adjacent sensitive areas (e.g., non-target crops, bodies of water, residential areas, known habitat for threatened or endangered species) is minimal (e.g., when wind is blowing away from the sensitive areas). Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

**Application By Impregnated Dry Bulk Granular Fertilizers:** MANA 25311 may be impregnated or coated on many dry bulk granular fertilizers and applied with the fertilizers to control weeds. When applying MANA 25311 with dry bulk fertilizers, follow all directions for use and precautions on the MANA 25311 label regarding target crops, rates per acre, soil texture, application methods, and rotational crops.

It is the responsibility of the individual and/or company selling the herbicide/fertilizer mixture to comply with all individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application.

Prepare the herbicide/fertilizer mixture by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray MANA 25311 onto the fertilizer must be spaced to provide uniform spray coverage. Care should be taken to aim the spray onto the fertilizer only, avoiding the walls of the blender.

If the herbicide/fertilizer mixture is too wet, add a highly absorptive material, such as Agsorb® FG or Celatom MP-79, or similar granular clay or diatomaceous earth materials, to obtain a dry, free-flowing mixture. Absorptive materials should be added only after the herbicide has been thoroughly blended into the fertilizer mixture. Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer materials being used. Generally, less than 2% by weight of absorptive material will be needed. Avoid using more than 5% absorptive material by weight.

Calculate the amount of MANA 25311 to be used per ton of fertilizer by using the following formula: 2,000 / pounds of fertilizer desired per acre X number of pints MANA 25311 required per acre = pints of MANA 25311 per ton of fertilizer.

**Application by Pneumatic (Compressed Air) Equipment:** High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixtures to build up or plug the distributor head, air tubes, or nozzle deflector plates. To minimize buildup, premix MANA 25311 with ExxonMobil™ Aromatic 200 at a rate of 2.0 to 2.5 pints per gallon of MANA 25311. Aromatic 200 is a noncombustible/nonflammable petroleum product. Aromatic 200 may be used in either a fertilizer blender or through direct injection systems. Drying agents should not be used when using Aromatic 200.

**Restrictions:**

1. Mixtures of MANA 25311 and Aromatic 200 must be used on dry fertilizer only. Poor results or crop injury may result if these mixtures are used in water or liquid fertilizer solutions for spraying applications.
2. To avoid potential for explosion,
  - a. Do not impregnate MANA 25311 on ammonium nitrate, potassium nitrate, or sodium nitrate, either alone or in blends with other fertilizers.
  - b. Do not combine MANA 25311 with a single superphosphate (1-20-0) or triple superphosphate (0-46-0).
  - c. Do not use MANA 25311 on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

**Precautions:**

- 3.

1. When impregnating MANA 25311 in a blender before application, a drier mixture can be obtained by substituting a drying agent for Aromatic 200. The use of Agsorb® FG or another drying agent of 6/30 particle size is recommended.
2. Drying agents are not recommended for use with On-The-Go impregnation equipment.

**Application of Impregnated Dry Bulk Granular Fertilizer:** Apply 200 to 700 pounds of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential in order to prevent possible crop injury to subsequent rotational crops. Non-uniform application may also result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil is recommended to obtain satisfactory weed control. On fine- or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced-tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting. To help avoid rotational crop injury, make applications as early as possible, since MANA 25311 impregnated onto dry bulk fertilizers can be expected to last longer in the soil than MANA 25311 applied as a spray in water or fluid fertilizer.

**PRECAUTIONS FOR MANA 25311 USE ON SOYBEANS**

When making an application of MANA 25311, observe all precautions and limitations on the MANA 25311 label as well as on the labels of each product that might be used in tank mixtures. Tank mixture partners must be registered in states where they are used. Refer to and follow the label for each tank mix product used.

Do not apply MANA 25311 under conditions which favor runoff or wind erosion of soil containing MANA 25311 to non-target areas.

In order to prevent off-site movement of MANA 25311 in runoff or wind erosion the following guidelines should be observed:

1. Avoid treating powdery dry or light sand soils when conditions are favorable for wind erosion. Under these conditions, the soil surface should first be settled by rainfall or irrigation.
2. Do not apply to impervious substrates, such as paved or highly compacted surfaces.
3. Do not use tailwater from the first flood or furrow irrigation of treated fields to treat non-target crops, unless at 0.5 inch of rainfall has occurred between application and the first irrigation.

**CROP ROTATION**

**Time Interval Between Treatment With MANA 25311 At The Recommended Rate In Soybean And Planting Rotation Crops**

Crop	Months
Lima bean, Southern pea, Soybean, Peanut	Anytime
Alfalfa, Wheat	4.5 (except ND/MN – 18)
Clover	9
Barley, Field Corn, Field Corn grown for seed*	9.5 (except ND)
Cotton, lettuce, oats, popcorn, safflower, sorghum, sweet corn	18
Potatoes	26
Canola (Rape seed), Carrot, Celery, Cole crop, Flax, Garlic, Onions, Spinach, Sugarbeets, tomatoes	40

DO NOT plant other rotational crops prior to 18 month after a MANA 25311 application.

\*Several seed companies have tested a wide range of inbred seed corn varieties for selectivity to MANA 25311 soil residual and have reported good crop safety. However, due to the proprietary nature of seed production, MANA of NA has not been given access to the inbred data. Growers are directed to contact the seed company for information and recommendations for planting corn grown for seed in field treated with MANA 25311 the previous year. Since growing conditions, environmental conditions and grower practice are beyond the control of MANA of NA, results and consequences related to planting seed corn inbreds into field treated previously with MANA 25311 shall be assumed by the user.

**Precautions**

If soybeans are furrow irrigated, till the soil prior to planting winter wheat or barley. The beds should be broken up and the soil mixed with tillage equipment set to cut 4-6 inches deep.

To avoid injury to rotational alfalfa or clover, (1) Do not apply more than 1 1/4 lbs a.i. of metolachlor per acre f MANA 25311) pre-emergence (including preplant surface, preplant incorporated, postplant incorporated, etc.) and (2) Do not make lay-by or other postemergent applications of MANA 25311

Use of MANA 25311 herbicide in accordance with label directions is expected to result in normal growth of rotational crops in most situations; however, various environmental and agronomic factors make it impossible to eliminate all risks associated with the use of this product and therefore, rotational crop injury is always possible.

**Restrictions**

**Parallel-MANA 25311 Alone:** If crop treated with MANA 25311 is lost, any crop on this label may be replanted immediately. Do not make a second broadcast application of MANA 25311. If the original application was banded and the second crop is planted in the untreated row middles, a second banded treatment may be applied.

**Parallel-MANA 25311 Tank Mixtures:** For rotational crop restrictions for MANA 25311 used in tank mixtures, refer to all precautions/restrictions listed above and to the respective product labels of any mixing partner(s) for additional statements/restrictions.

Only rotational crops harvested at maturity may be used for feed or food. In the event of a crop loss due to weather, soybeans can be replanted. DO NOT work the soil deeper than 2 inches.

There should be an interval of at least 85 days between an application of MANA 25311 and soybean harvest.

**STORAGE AND DISPOSAL**

DO NOT contaminate water, food, or feed by storage or disposal. KEEP FROM FREEZING. DO NOT STORE BELOW 32° F.

**PESTICIDE STORAGE:** Store product in original container only.

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

**CONTAINER DISPOSAL: Non-refillable Container (5 gallons or less):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container 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 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. If recycling is not available, puncture or dispose of in a sanitary landfill or incineration or if allowed by state and local authorities, by burning. If burned stay out of smoke.

**Non-refillable Container (greater than five gallons):** Non-refillable container. Do not reuse or refill this container. Offer for recycling, if available. Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 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. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**Refillable Container (greater than 55 gallons):** Refill this container with MANA 25311 (containing the active ingredients metolachlor and imazethapyr) only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10 percent full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

**SPILL, FIRE, LEAK or OTHER CHEMICAL EMERGENCY:** In case of spill or leak on floor or paved surfaces, soak up with sand earth, or synthetic absorbent. Remove to chemical waste area.

**LIMITATION OF WARRANTY AND LIABILITY**

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If

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terms are not acceptable, return the unopened product container at once.

By using this product, user or buyer accepts the following **CONDITIONS, DISCLAIMER OF WARRANTIES, and LIMITATIONS OF LIABILITY.**

**CONDITIONS:** The directions for use of this product are believed to be adequate and must be followed carefully. However, 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 weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of Makhteshim Agan of North America, Inc. All such risks shall be assumed by the user or buyer.

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For additional information regarding the use of MANA 25311, please call 866-406-MANA (6262).

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