



U.S. ENVIRONMENTAL PROTECTION AGENCY

Office of Pesticide Programs  
Registration Division (7505P)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg. Number:

66222-288

Date of Issuance:

2/16/21

NOTICE OF PESTICIDE:

Registration  
 Reregistration  
(under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

QPE 100 EC

Name and Address of Registrant (include ZIP Code):

ADAMA Agan, Ltd.  
c/o Makhteshim Agan of North America, Inc. (d/b/a ADAMA)  
3120 Highwoods Blvd, Suite 100  
Raleigh, NC 27604

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is unconditionally registered in accordance with FIFRA section 3(c)(5) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.
2. This registration will automatically expire on February 15, 2026, unless the Agency amends this condition otherwise.
3. You must develop and follow an Herbicide Resistance Management Plan as described in Appendix A.

Signature of Approving Official:

Emily Schmid, Product Manager 25  
Herbicide Branch, Registration Division (7505P)

Date:

2/16/21

4. You must submit annual reports to the Agency by January 15th of each year beginning in 2022, as outlined in Appendix A Section D, "Reporting Component," until the Agency amends this condition otherwise.
5. Make the following label changes before you release the product for shipment:
  - Revise the EPA Registration Number to read, "EPA Reg. No. 66222-288."
6. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company's website on your label, then please be aware that the website becomes labeling under the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) list examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product's label, claims made on the website may not substantially differ from those claims approved through the registration process. Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA's Office of Enforcement and Compliance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 12/18/2019

If you have any questions, please contact Lydia Crawford by phone at 703-347-0622, or via email at [Crawford.Lydia@epa.gov](mailto:Crawford.Lydia@epa.gov).

Enclosure

## APPENDIX A

### **Herbicide Resistance Management Plan and Reporting Requirements for Use of OPE 100 EC (quizalofop-p-ethyl) on Double Team™ cropping solution sorghum**

Adama (“Adama”) must comply with the following:

#### *A. Educational Component*

1. Develop and implement an education program for users of this product that identifies appropriate best management practices (BMPs) to avoid and control weed resistance and convey to users the importance of following BMPs.

The following are examples of BMPs:

#### Crop selection and cultural practices

- Understand the biology of the weeds present.
- Use a diversified approach towards weed management focused on preventing weed-seed production and reducing the number of weed seeds in the soil seed- bank.
- Emphasize cultural practices that suppress weeds by using crop competitiveness.
- Plant into weed-free fields, keep fields as weed-free as possible, and note areas where weeds were a problem in prior seasons.
- Incorporate additional weed-control practices whenever possible, such as mechanical cultivation, biological management practices, crop rotation, and weed-free crop seeds, as part of an integrated weed-control program.
- Do not allow weed escapes to produce seeds, roots, or tubers.
- Manage weed seed at harvest and post-harvest to prevent a buildup of the weed seed-bank.
- Prevent field-to-field and within-field movement of weed seed or vegetative propagules.
- Thoroughly clean plant residues from equipment before leaving fields.
- Prevent an influx of weeds into the field by managing field borders.
- Fields should be scouted before application to ensure herbicide and application rates will be appropriate for the weed species and weed sizes present.
- Fields should be scouted after application to confirm herbicide effectiveness and to detect weed escapes.
- If resistance is suspected, treat weed escapes with a different mechanism-of- action herbicide or use non-chemical methods to remove weed escapes.
- Report any incidence of non-performance of this product against a particular weed species to your ADAMA retailer, representative or call 1-866-406-6262. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the application rates of this product specified for your local conditions

Herbicide selection

- Use a broad spectrum soil-applied herbicide with grass activity with a mechanism of action that differs from this product as a foundation in a weed control program.
  - A broad-spectrum weed-control program should consider all of the weeds present in the field. Weeds should be identified through scouting and field history.
  - Difficult-to-control weeds may require sequential applications of herbicides with alternative mechanisms of action.
  - Fields with difficult-to-control weeds should be rotated to crops that allow the use of herbicides with alternative mechanisms of action.
  - Apply full rates of this herbicide for the most difficult to control weeds in the field. Applications should be made when weeds are at the correct size to minimize weed escapes.
  - Do not use more than two applications of this herbicide or any herbicide with the same mechanism of action within a single growing season unless mixed with another mechanism of action herbicide with overlapping spectrum for the difficult to control weeds.
  - Report any incidence of non-performance of this product against a particular weed species to ADAMA or its representatives.
2. Include at least one written communication to users of this product each year regarding herbicide-resistance management.
  3. Provide a copy of the education materials to EPA upon request.

B. Field Detection and Remediation Components

1. If any user informs ADAMA or its representatives of a lack of herbicide efficacy in a weed species listed on product labeling, then ADAMA or its representatives must make an effort to evaluate the field for suspected resistance to this product by applying the criteria below, as set forth in Norsworthy, et al., “Reducing the Risks of Herbicide Resistance: Best Management Practices and Recommendations” Weed Science 2012 Special Issue: 31-62;

Criteria for Determining Suspected Herbicide Resistance

- 1) *Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; and/or*
  - 2) *A spreading patch of non-controlled plants of a particular weed species; and/or*
  - 3) *Surviving plants mixed with controlled individuals of the same species.*
2. If one or more of the above criteria are met, then:
    - a. Provide the user with specific information and recommendations to control and contain suspect weeds, including re-treatment and/or other non-chemical controls, as appropriate. If requested by the user, ADAMA will become actively involved in implementation of weed control measures.
    - b. Request, at the time of the initial determination that one or more of the above criteria are met and prior to any application of alternative control practices, that the user provide access to the relevant field(s) to collect specimens of the suspect weeds (potted specimens or seeds) for potential further evaluation in the

greenhouse or laboratory, and to collect such specimens if possible (or, alternatively, request that the user provide such specimens to ADAMA at ADAMA's expense).

- c. Conduct greenhouse or laboratory studies to confirm resistance as soon as practicable following sample collection, if technically feasible.
  - d. To the extent possible, contact or visit the user in an appropriate timeframe after implementation of the additional weed control measures in order to evaluate success of such measures.
  - e. If the additional weed control measures were not successful in controlling the suspected-resistant weeds, then:
    - i. Work with the user to determine the reason(s) why the additional control measures were unsuccessful;
    - ii. Offer to provide technical expertise on how to control and contain the suspected-resistant weeds, including re-treatment and/or other non-chemical controls, as appropriate; and
    - iii. Report annually the inability to control the suspected-resistant weeds to relevant stakeholders.
3. Keep records of all field evaluations for suspected resistance for a minimum of three years and provide a copy to EPA upon request.

*C. Evaluation Component*

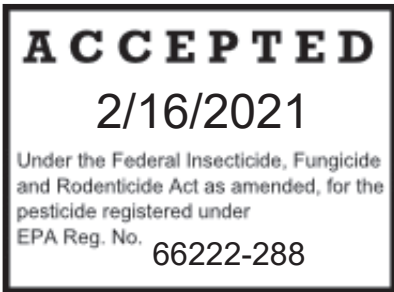
1. Conduct annual surveys to determine whether users have encountered any perceived issues with non-performance or lack of efficacy of this product, and if so, how users have responded. This survey must be based on a statistically-representative sample of users. The sample size and geographical resolution should be adequate to allow analysis of responses within regions, between regions, and across the United States.
2. Analyze the survey results each year, and modify the following for the upcoming growing season, as appropriate:
  - a. Efforts aimed at achieving compliance with BMPs;
  - b. Responses to incidents of suspected weed resistance and confirmed weed resistance; and
  - c. The education program. At the initiative of either EPA or ADAMA, both parties shall consult about possible modifications to the education program.

*D. Reporting Component*

1. Submit reports to EPA by January 15th of each year, beginning in 2019, with information on:
  - a. Annual sales of this product by state;
  - b. Annual sales of sorghum seed containing [DOUBLE TEAM(TM) CROPPING SOLUTION SORGHUM] trait by state;
  - c. The current education program. The first report shall include the current education program and its associated materials. Subsequent annual reports shall include updates of any aspect of the education program and associated materials that have materially changed since submission of the previous annual report;
  - d. Summary of efforts aimed at achieving compliance with the BMPs;

- e. Investigation and remediation of cases on suspected-resistant weeds. Summary of determinations as to whether any reported lack of herbicide efficacy was due to suspected-resistance, any follow-up actions taken, and if available, the final outcome (e.g., evaluation of success of additional weed control measures) regarding each case of suspected-resistance. The annual report shall list the cases by county and state;
- f. Summary of the status of any laboratory and greenhouse testing performed by or at the direction of ADAMA, in response to cases of suspected-resistance, performed in the previous year. Data pertaining to such testing need not be included in the annual reports, but such data must be made available to EPA upon request; and
- g. The annual survey, including whether users are implementing herbicide resistance BMPs, and a summary of ADAMA's annual review and any modifications based on the survey results.

Following submission of the annual report, ADAMA shall meet with EPA at EPA's request to evaluate and consider the information contained in the report.



QUIZALOFOP-P-ETHYL	GROUP	1	HERBICIDE
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# QPE 100 EC

## Herbicide

**For Use Only on Double Team™ Cropping Solution Sorghum**  
 (Quizalofop-resistant sorghum)  
 (ABN: First Act™)

ACTIVE INGREDIENT:	% BY WT.
Quizalofop-P-ethyl: Ethyl (R)-2-[4-(6-chloroquinoxalin-2-yloxy)- phenoxy]propionate.....	9.85%
<b>OTHER INGREDIENTS:</b> .....	<b>90.15%</b>
<b>TOTAL:</b>	<b>100.00%</b>

Contains 0.83 lb active ingredient per gallon  
 Contains petroleum-based distillates

### KEEP OUT OF REACH OF CHILDREN CAUTION/PRECAUCION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

How can we help? 1-866-406-6262

Manufactured for:  
 Makhteshim Agan of North America, Inc. (d/b/a ADAMA)  
 3120 Highwoods Blvd., Suite 100  
 Raleigh, NC 27604

EPA Reg. No. 66222-x

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

**NET CONTENTS:** \_\_\_\_\_

### FIRST AID

<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>• Immediately call a poison control center or doctor.</li> <li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li> <li>• Do not give <b>any</b> liquid to the person.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>IF ON SKIN OR CLOTHING:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15 to 20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15 to 20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<ul style="list-style-type: none"> <li>- Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact 1-877-250-9291 24 hours a day, 7 days a week for emergency medical treatment information.</li> <li>- For general information about this product, call 1-866-406-6262, or contact the National Pesticides Information Center (NPIC) at 1-800-858-7378, Monday through Friday, 8 AM to 12 PM PST, or at <a href="http://npic.orst.edu">http://npic.orst.edu</a>.</li> </ul> <p>Note to physician: Contains petroleum distillate. Vomiting may cause aspiration pneumonia.</p>	

In case of spills, fire, leaks or accidents call 1-800-535-5053.

**Note to Reviewer: Bracketed text indicates optional or alternate language options  
[For additional precautionary, handling and use statements, see inside of this booklet.]**

## **PRECAUTIONARY STATEMENTS**

### **HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**CAUTION.** Harmful if swallowed, absorbed through skin, or inhaled. Causes moderate eye and skin irritation. Avoid contact with skin, eyes or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove contaminated clothing and wash before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

### **PERSONAL PROTECTIVE EQUIPMENT**

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves made of barrier laminate or Viton  $\geq$  14 mils.
- Shoes plus socks

Follow the manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

### **User Safety Recommendations**

#### **Users Should:**

- Wash hands after handling and 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.

### **User Safety Requirements**

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

## **ENGINEERING CONTROLS**

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.

## **ENVIRONMENTAL HAZARDS**

This pesticide is toxic to fish and invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment wash waters or rinsate. This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall-runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

## **DIRECTIONS FOR USE**

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

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 in your State 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 12 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 including plants, soil, or water is:

- Coveralls
- Chemical-resistant gloves made of barrier laminate or Vitron  $\geq$  14 mils.
- Chemical-resistant footwear plus socks
- Protective eyewear

### **Product Information**

QPE 100 EC is a systemic herbicide that is rapidly absorbed by treated foliage and translocated to the roots and other growing points of the plant. When affected, younger plant tissues become chlorotic/necrotic and eventually die, leaving treated plants stunted and noncompetitive. In general, these symptoms are first observed within 7 to 14 days after application depending on the grass species treated and the environmental conditions.

The degree of control and duration of the effect of QPE 100 EC depend upon the rate used, weed spectrum, weed size and variability, growing conditions at and following treatment, soil moisture, precipitation, tank mixtures, and spray adjuvant used.

Conditions conducive to healthy, actively growing plants optimize the performance of QPE 100 EC. Unacceptable control may occur if QPE 100 EC is applied to grasses stressed from:

- Abnormal weather (excessive heat or cold, or widely fluctuating temperatures),
- Hail damage,
- Drought,
- Water saturated soils,
- Mechanical injury, or
- Prior herbicide injury.

Grasses under these conditions are often less sensitive to herbicide activity. Delay application until the stress passes and weeds and crop resume growth.

Before making application of QPE 100 EC to crops previously under stress, or injured from other pesticide applications, the crop needs to be fully recovered and growing vigorously.

QPE 100 EC is rainfast 1 hour after application.

## Application Information

### Restrictions

- Do not graze livestock in treated areas or feed treated grain, fodder, straw, or hay to livestock within 45 days of QPE 100 EC application.
- Do not apply QPE 100 EC through any type of irrigation equipment.
- Do not contaminate any body of water.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Do not plant Double team™ sorghum the year following growing of grain sorghum containing the Double team™ herbicide tolerance trait in the same field.
- Do not apply more than 12 fl. oz. QPE 100 EC/acre (0.078 lb ai/A) in a single application.
- Do not apply more than 21 fl. oz. QPE 100 EC/acre (0.136 lb ai/A) per year.
- Do not make more than two applications of QPE 100 EC/acre per year.
- Application intervals must be greater than 7 days.
- Do not apply QPE 100 EC within 45 days of harvest.

### Precautions

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

- Prevent drift of spray to desirable plants (refer to SPRAY DRIFT MANAGEMENT section of this label).
- Take all necessary precautions to avoid all direct or indirect contact (such as spray drift) with non-target plants or areas. Most grass crops, including wheat, barley, rye, oats, sorghum, rice, and corn are highly sensitive to QPE 100 EC.
- Carefully observe all sprayer cleanup instructions both prior to and after using this product, as spray tank residue may damage crops other than those included in the crop rotation section.

### Double Team™ cropping solution sorghum tolerance trait - Information

Apply QPE 100 EC herbicide to grain sorghum containing the Double team™ cropping solution sorghum herbicide tolerance trait (Quizalofop-resistant sorghum) for postemergence control of certain annual and perennial grass weeds. Do not use QPE 100 EC on grain sorghum that does not contain the Double team™ sorghum cropping solution tolerance trait as severe injury or death may occur.

Temporary yellowing and reduction in height of grain sorghum hybrids containing the Double team™ herbicide tolerance trait may occur following a postemergence application of QPE 100 EC(TM)™ herbicide. Crop response may be more pronounced when conditions exist that result in slowed crop growth, such as but not limited to, cloudy, cool, or wet conditions. Normal growth and appearance will resume when normal growing conditions return.

Crop injury may occur following an application of QPE 100 EC if there is a prolonged period of cold weather and/or in conjunction with wet soils.

Prevent drift or spray onto desirable plants to prevent injury or loss.

### Pollen-Mediated Gene Flow - Precautions

Pollen-mediated gene flow is possible from grain sorghum containing the Double team™ grain sorghum solution trait to weedy relatives, such as johnsongrass or shattercane, may contribute to the development of resistance to ACCase herbicides in these biotypes. Plant into fields in which emerged weeds have been controlled by tillage or nonselective herbicides, such as glyphosate. Manage johnsongrass and shattercane growth in road ditches, fence rows and nearby places so their flowering does not coincide with the Double team™ sorghum cropping trait flowering.

Adherence to the ADAMA Stewardship Program which includes completion of the certification program and following the best Management Practices is necessary to reduce the risk of the development of resistance to ACCase herbicides in weedy relatives is required.

## Weed Resistance Management

For resistance management, QPE 100 EC is a **Group 1** herbicide. While weed resistance to **Group 1** herbicides is common in a number of weed species, these herbicides remain an important component of successful weed control programs. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, mechanical, and biological control tactics. Cultural control tactics include agronomic practices that improve the competitive ability of the crop via rotation, variety/cultivar selection, precision fertilizer placement and optimum crop plant density. Agronomic practices should also limit the development and spread of weeds by using clean crop seed (e.g. certified seed), prevent crop trait-out crossing, control weed influx from field borders, and manage weed seed at harvest/post-harvest to minimize the carryover seed-bank into the following crop. Mechanical control tactics include timely tillage where practical, equipment cleaning to avoid weed spread, and minimization of harvest crop seed losses in the field through close attention to timeliness of harvesting, correct setup of harvest equipment, and covering crop seed loads during harvest and transport to avoid dispersing seed. An example of a biological control tactic is field grazing during or after cropping to manage weeds and reduce weed seed production.

Scout after herbicide application to monitor weed populations for early signs of resistance development. Indicators of possible herbicide resistance include: (1) failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds; (2) a spreading patch of non-controlled plants of a particular weed species; (3) surviving plants mixed with controlled individuals of the same species. If resistance is suspected, prevent weed seed production in the affected area by an alternative herbicide from a different group or by a mechanical method such as hoeing or tillage. Prevent movement of resistant weed seeds to other fields by cleaning harvesting and tillage equipment when moving between fields and planting clean seed.

### **Chemical Control**

- Start clean with tillage or an effective burndown herbicide program.
- Apply preemergence herbicides that provide soil residual control of broadleaf and grass weeds to reduce early season weed competition and allow for timely in-crop postemergence herbicide applications.
- Use tank mixes and sequential applications with other herbicides possessing different modes of action (MOAs) that are also effective on the target weeds.
- Follow labeled application rate and weed growth stage specifications.
- DO NOT rely on a single herbicide mode of action for weed control during the growing season.
- Avoid application of herbicides with the same mode of action more than twice per growing season.
- Use recommended adjuvant, adequate spray volume, proper nozzle and pressure (see label) to ensure effective weed coverage for applications.
- Control weeds in field borders to prevent weeds from influx into field.

### **Scouting and Containment**

- Scout fields before application to ensure optimum herbicide selection, rates and timing for effective control of target weeds.
- Scout fields after herbicide application to identify areas where weed control was ineffective. Consider application and environmental factors that may have led to incomplete control.
- Control weed escapes with herbicides possessing a different mode of action or use a mechanical control measure. Weed escapes should not be allowed to reproduce by seed or to proliferate vegetatively.
- Clean equipment before moving to a different field to avoid spread of resistant weeds (especially harvest and tillage equipment).
- Contact your state cooperative extension service, land grant university weed scientist, professional consultants, your herbicide supplier and/or your local sales representative if resistance is suspected.
- Prevent crop trait out-crossing to weeds and weed influx from border to field.
- Report any incidence of non-performance of this product against a particular weed species to your ADAMA retailer, representative or call 1-866-406-6262. If resistance is suspected, treat weed escapes with an herbicide having a different mechanism of action and/or use non-chemical means to remove escapes, as practical, with the goal of preventing further seed production.
- Contact your local sales representative, crop advisor, or extension agent to find out if suspected resistant weeds to this MOA have been found in your region. If resistant biotypes of target weeds have been reported, use the

application rates of this product specified for your local conditions. Tank mix products so that there are multiple effective mechanisms of actions for each target weed.

## **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 treated 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 areas.

## **Tank Mixes**

It is the pesticide applicator's responsibility to ensure that all products are registered for the intended use. Applicators must read and follow the most restrictive directions for use, precautions, and limitations of each product in the tank mixture.

Refer to the labels of all tank mix products for information regarding use information (such as rates, timing, applications information, and sprayer cleanup) and product precautions and restrictions (especially adjuvants – QPE 100 EC requires the use of an adjuvant). The most restrictive provisions apply. If those instructions conflict with this label, do not tank mix the herbicide with QPE 100 EC.

ADAMA also recommends that you first consult your state experiment station, university, or extension agent, agricultural dealer, or ADAMA representative as to the potential for any adverse interactions (resulting in unacceptable weed control and/or crop injury) before using new herbicide, insecticide and fungicide mixtures. If no information is available, limit the initial use of QPE 100 EC and the new herbicide, insecticide or fungicide product to a small area.

QPE 100 EC ACT can be tank mixed with postemergence grain sorghum herbicides including atrazine, dicamba and 2,4-D. Include either a crop oil concentrate or a nonionic surfactant as specified on the product labels.

In addition to the tank mix partners indicated above, QPE 100 EC may be tank mixed or followed with sequential applications of full or reduced rates of other herbicide products registered for use in sorghum provided:

- The tank mix product is labeled for the same timing, method of application, adjuvants, and use restrictions as QPE 100 EC
- The tank mixture is not specifically prohibited on the label of the tank mix product.
- The tank mix combination is compatible as determined by a "jar test" described in the Tank Mix Compatibility Testing section.

Weed control and crop response with tank mixtures not specified in this label are the responsibility of the user and manufacturer of the tank mix product, to extent consistent with applicable law.

## ***Tank Mix Compatibility Testing***

Always conduct a jar test to evaluate physical compatibility of QPE 100 EC and other pesticides before applying a particular mixture to listed crops for the first time. Use a clear glass quart jar with lid and mix the tank mix ingredients in their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately ½ hour. If the mixture balls-up, forms flakes, sludges, gels, oily film or layers, or other precipitates, it is not compatible.

### **Application with Insecticides and Fungicides**

QPE 100 EC may be tank mixed with postemergence insecticides, fungicides, and bactericides registered for use in sorghum.

### **Split Applications with Postemergence Broadleaf Herbicides**

Applying QPE 100 EC immediately prior to or following an application of a postemergence broadleaf herbicide may reduce control of some grasses. For best results, follow these directions when making split applications:

- Apply postemergence broadleaf herbicides at least 24 hours after applying QPE 100 EC.
- Apply QPE 100 EC when grass begins to develop new leaves (generally 7 days after the postemergence broadleaf herbicide application) in fields treated with a postemergence broadleaf herbicide.

## **Cultivation**

A timely cultivation may be necessary to control suppressed weeds, weeds that were beyond the maximum size at application, or weeds that emerge after an application of QPE 100 EC. Cultivation up to 7 days before the postemergence applications of QPE 100 EC may decrease weed control by pruning weed roots, placing the weeds under stress, or covering the weeds with soil and preventing coverage by QPE 100 EC. To allow QPE 100 EC to fully control treated weeds, wait at least 7 days after application to cultivate. Optimum timing for cultivation is 7 – 14 days after a postemergence application of QPE 100 EC.

## **AGRICULTURAL USES**

QPE 100 EC is a selective herbicide that control annual and perennial grasses in Double Team™ sorghum. QPE 100 EC does not control sedges or broadleaf weeds. Applied at specified rates and timings, QPE 100 EC controls the grasses listed in the “Weeds Controlled and Rate Selection” chart. QPE 100 EC will control emerged grasses. Subsequent flushes of grasses require additional treatment. See “Restrictions” portion of the label before using. Follow all use directions and restrictions listed for the specific crop.

### ***Application Timing***

Apply QPE 100 EC to young, actively growing grasses according the rate chart that follows. If a field is to be irrigated, apply QPE 100 EC after the irrigation. Applications made to grasses that are larger than the sizes listed in the rate charts or to grasses under stress may result in unsatisfactory control.

### ***Sequential Applications***

Do not exceed the maximum use rates listed under the directions for sorghum.

### ***Perennial Grasses***

If perennial grasses regrow, reapply QPE 100 EC at 6-7 fluid ounces of product per acre, unless stated otherwise. Do not exceed the maximum use rates listed.

### ***Spray Adjuvants***

Applications of QPE 100 EC must include either a crop oil concentrate or a nonionic surfactant. If another herbicide is tank mixed with QPE 100 EC to increase the weed spectrum, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients.

### **Petroleum Crop Oil Concentrate (COC)**

- Petroleum-based crop oil concentrates are the preferred adjuvant system in arid areas.
- Apply petroleum-based crop oil concentrate at 1% v/v (1 gallon per 100 gallons spray solution) or 2% under arid conditions.
- Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.
- For aerial applications apply 0.5% v/v (2 quarts product per 100 gallons spray solution).

### **Nonionic Surfactant (NIS)**

- Apply at 0.25% v/v (1 quart of product per 100 gallons spray solution).
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12.

### **Ammonium Nitrogen Fertilizer**

- An ammonium nitrogen fertilizer may be added to the spray mixture, in addition to crop oil concentrate or nonionic surfactant, but is not required to optimize performance of this product.
- Use 2 quart/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 lb/acre of a spray-grade ammonium sulfate (AMS). Use 4 quart/acre UAN or 4 pound/acre AMS under arid conditions.

- Do not use liquid nitrogen fertilizer as the total carrier solution.

### Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been approved.

<b>WEEDS CONTROLLED AND RATE SELECTION</b>			
	<b>Size at Application (in)</b>	<b>QPE 100 EC Applied Alone (fluid ounces product/A)</b>	<b>QPE 100 EC Tank Mixed with Broadleaf Herbicide (fluid ounces product/A)*</b>
<b>Annual Grasses**</b>			
Volunteer Corn ( <i>Zea mays</i> )***	6-30	5 - 8	4 - 8
Foxtail, Giant ( <i>Setaria faberi</i> )	2-4 (pretiller)		5
Wild Proso Millet ( <i>Panicum miliaceum</i> )	2-6		7
Crowfootgrass ( <i>Dactyloctenium aegyptium</i> )	2-6	7 - 8	8
Fall Panicum ( <i>Panicum dichotomiflorum</i> )	2-6		
Field Sandbur ( <i>Cenchrus incertus</i> )	2-6		
Foxtail, Bristly ( <i>Setaria verticillata</i> )	2-4		
Foxtail, Giant ( <i>Setaria faberi</i> )	2-8		
Foxtail, Green ( <i>Setaria viridis</i> )	2-4		
Foxtail, Yellow ( <i>Setaria pumila</i> )	2-4		
Goosegrass ( <i>Eleusine indica</i> )	2-6‡		
Itchgrass ( <i>Rottboellia exaltata</i> )	2-8		
Sprangletop ( <i>Leptochloa filiformis</i> )	2-6		
Volunteer Barley ( <i>Hordeum vulgare</i> )	2-6		
Volunteer Oats ( <i>Avena sativa</i> )	2-6		
Volunteer Rye ( <i>Secale cereale</i> )	2-6		
Volunteer Wheat ( <i>Triticum aestivum</i> )	2-6		
Wild Oat ( <i>Avena fatua</i> )	2-6		
Witchgrass ( <i>Panicum capillare</i> )	2-6		
Barnyardgrass ( <i>Echinochloa crus-galli</i> )	2-6	8 - 10	Split‡
Crabgrass, Large ( <i>Digitaria sanguinalis</i> )	2-6‡		
Crabgrass, Smooth ( <i>Digitaria ischaemum</i> )	2-6‡		
Junglerice ( <i>Echinochloa colinum</i> )	2-6		
Texas Panicum ( <i>Panicum texanum</i> )††	2-4	9 - 10	Split‡
Red Rice ( <i>Oryza sativa</i> )	1-4		
Woolly Cupgrass ( <i>Eriochloa villosa</i> )	2-4§		
Broadleaf Signalgrass ( <i>Brachiaria platyphylla</i> )	2-6	10	Split
Downy brome ( <i>Bromus tectorum</i> )	2-6	10-12	12
Italian ryegrass ( <i>Lolium multiflorum</i> )	2-6		
Jointed goatgrass ( <i>Aegilops cylindrica</i> )	2-6		
Windgrass ( <i>Bromus mollis</i> )	2-6		
<b>Perennial Grasses**</b>			
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> )	4-8	8 - 10	Split‡
Bermudagrass ( <i>Cynodon dactylon</i> )	3" tall (or up to 6" runners)	10 - 12	Split‡
Quackgrass ( <i>Agropyron repens</i> )	6-10		

\* See "Tank Mixes."

\*\* For annual and perennial grasses, up to 12 fluid ounces per acre may be applied, based on local recommendations. **Under arid conditions apply at the higher use rate.**

\*\*\* Control includes "Roundup" Ready (glyphosate resistant), Liberty Link, (glufosinate) and IMI-Corn. Apply 4 fluid ounces/acre QPE 100 EC for up to 12 inch tall corn. Apply 5 fluid ounces/acre QPE 100 EC for 12-18 inch volunteer corn; use 8 oz QPE 100 EC for 18-30 inch volunteer corn.

† Split = Split Application. May not be controlled adequately using a tank mix with broadleaf herbicides. For best results, alternate applications of QPE 100 EC with a broadleaf herbicide, ensuring that QPE 100 EC is applied either 24 hours before or 7 days after the broadleaf herbicide.

‡ Length of lateral growth.

§ Size in height or diameter, whichever is more restrictive. Applications to plants with more than three tillers may result in unsatisfactory control.

†† **In Texas and other areas of the arid west, apply at 10 fluid ounces per acre for control of Texas panicum, use of lower rates may result in unsatisfactory control.**

## Specific Weed Problems

### Volunteer Glyphosate-Resistant Corn

QPE 100 EC may be used for control of volunteer glyphosate resistant corn. For control of other weeds, it may be tank mixed with glyphosate as follows:

- Apply QPE 100 EC at a rate of 4 fluid ounces/acre for up to 12 inch volunteer corn, 5 fluid ounces for 12-18 inch corn and 8 fluid ounces QPE 100 EC for 18-30 inch corn, tank mixed with a labeled rate of glyphosate.
- If the glyphosate formulation does not include a built-in adjuvant system, a nonionic surfactant or petroleum based crop oil concentrate must be included, per directions on this label.
- If the glyphosate formulation contains a built-in adjuvant system, additional adjuvant is still required. Add nonionic surfactant at a rate of 0.125% v/v (1 pt per 100 gal spray solution). Under arid conditions consider adding a petroleum based crop oil concentrate at 1% v/v (1 gallon per 100 gallons spray solution) instead of a nonionic surfactant.
- Volunteer corn containing quizalofop tolerance traits will not be controlled by QPE 100 EC.

## Spot/Small Area Spray Instructions

To spot treat small areas of annuals (i.e., volunteer corn) or perennials

- Use a 0.375% v/v solution of QPE 100 EC and water.

<b>SPRAY VOLUMES FOR SMALL AREAS</b>			
<b>Spray Volume (gallon)</b>	<b>QPE 100 EC (fluid ounces product)</b>	<b>Crop Oil Concentrate (fluid ounces)</b>	<b>Nonionic Surfactant (fluid ounces)</b>
	<b>+</b>	<b>OR</b>	
1	0.5 (1 tbsp)	1.25 (2.5 tbsp)	0.3 (2 tsp)
25	12 (3/4 pt)	32 (1 qt)	8 (1 cup)
50	24 (1.5 pt)	64 (2 qt)	16 (1 pt)
100	48 (3 pt)	128 (1 gal)	32 (1 qt)

Do not spot treat grasses using a tank mix of QPE 100 EC and broadleaf herbicides

- Include a nonphytotoxic crop oil concentrate at 1 gallon per 100 gallons of spray solution (1% v/v) or a nonionic surfactant at 1 qt per 100 gallons of spray solution (0.25% v/v).
- Treat plants on a spray-to-wet basis to ensure good coverage.
- Do not treat >10% of the total treated area as spot/small area treatment. Do not exceed the maximum specified rate/acre/season for the crop that is going to be planted when additional applications are made as spot treatment or small area treatment.

## **Double Team Cropping Solution Sorghum Use Directions**

Apply QPE 100 EC as a postemergence foliar spray to selectively control grasses only in Double Team cropping solution sorghum.

**NOTE:** Sorghum not containing the Double Team cropping solution sorghum herbicide tolerance trait will be severely injured or killed if treated with QPE 100 EC herbicide.

Apply QPE 100 EC at 5 - 12 fluid ounces/acre. Always include an adjuvant as noted in the 'Spray Adjuvants' section. Apply QPE 100 EC anytime after sorghum emergence up to 45 days before harvest.

Applications made to 4 – 20" tall sorghum (approximately V3 - V7) are recommended for best weed control and crop tolerance. Best results are obtained when applications are made to young, actively growing grasses.

Applications made to sorghum greater than 20" tall may result in poor spray coverage on weeds and diminished crop vigor due to weed competition.

### ***Crop Rotation***

Do not rotate to crops other than Cotton, Dry Beans (including Chickpea), Flax, Lentils, Mint (Spearmint and Peppermint), Peas (Dry and Succulent Peas), Rapeseed Crop Subgroup 20A [includes Borage, Canola, Crambe, Gold of Pleasure (Camelina), Cuphea, Echium, Hare's Ear Mustard, Lesquerella, Lunaria, Meadowfoam, Milkweed, Mustard Seed, Oil Radish, Poppy Seed, Sesame, and Sweet Rocket], Snap Beans, Soybeans, Sunflowers, Sugarbeets or Quizalofop tolerant field corn within 120 days after application

### **Application Equipment**

- See SPRAY DRIFT MANAGEMENT section for additional information and precautions.

### ***Ground Application***

#### **Broadcast Application**

- When applying by ground, use spray nozzles that will deliver medium or larger spray droplets as defined in the American Society of Agricultural and Biological Engineers (ASABE) standard ANSI/ASAE S572.1 (March 2009). (see Spray Drift Management section for additional information).
- Use flat fan or hollow cone nozzles at 25-60 psi.
- Do not use flood, rain drop, whirl chamber, or any other nozzle types that produce coarse, large spray droplets. In addition, do not use controlled droplet applicator (CDA) type nozzles as poor weed control or excessive spray drift may result.
- Use a minimum of 10 gal of water per acre in non-arid areas.
- Use a minimum of 15 gal of water per acre in arid areas.
- Do not exceed 40 gal of water per acre.
- Increase spray volume and pressure as weed or crop density and size increase.

#### **Band Application**

- Because band application equipment sprays a narrower area than broadcast application equipment, calibrate equipment to use proportionately less spray solution.
- To avoid crop injury, carefully calibrate the band applicator not to exceed the labeled rate.
- Carefully follow the manufacturer's instructions for nozzle type, nozzle orientation, distance of the nozzles from the crop and weeds, spray volumes, calibration, and spray pressure.
- For additional information on row banders see ADAMA informational bulletin.

#### **Aerial Application**

- When applying by air, use spray nozzles that will deliver coarse or larger spray droplets as defined in the American Society of Agricultural and Biological Engineers (ASABE) standard ANSI/ASAE S572.1 (March 2009). (see Spray Drift Management section for additional information).
- Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage.
- Use a minimum of 3 gal of water per acre in nonarid areas.
- Use a minimum of 5 gal of water per acre in arid areas.

### ***Mixing Instructions***



1. Fill the tank ¼ to 1/3 full of water.
2. While agitating, add the required amount of QPE 100 EC. If QPE 100 EC and a tank mix partner are to be applied together, consult the tank mix partner label for information on which should be added first (normally granules and powders are added first).
3. Continue agitation until the QPE 100 EC is fully dispersed, at least 5 minutes.
4. Once the QPE 100 EC is fully dispersed, maintain agitation and continue filling tank with water.
5. As the tank is filling, add the required volume of spray additives, always add these to the spray tank last.
6. Apply QPE 100 EC spray mixture within a reasonable period of time of mixing to avoid product degradation (24 to 48 hrs). If the spray mixture stands for any period of time, thoroughly re-agitate before using.

### ***Sprayer Cleanup***

The spray equipment must be cleaned before QPE 100 EC is sprayed. Follow the cleanup procedures specified on the labels of the previously applied products. If no directions are provided, follow the six steps outlined in After Spraying QPE 100 EC. It is very important that any buildup of dried pesticide deposits which have accumulated in the application equipment be removed prior to spraying QPE 100 EC. Steam-cleaning spray tanks to facilitate the removal of any caked deposits of previously applied products will help prevent accidental crop injury.

### **At the End of the Day**

During periods when multiple loads of QPE 100 EC herbicide are applied, at the end of each day spraying, rinse and partly fill the interior rinse the tank with fresh water, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits which can accumulate in the application equipment.

### **After Spray QPE 100 EC and Before Spraying Crops Other Than Those Listed in the Crop Rotation Section**

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of QPE 100 EC as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water. Loosen and physically remove any visible deposits.
2. Fill the tank with clean water and 1 gal of household ammonia\* (contains 3% active) for every 100 gal of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.
3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat Step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. If only ammonia is used as a cleaner, the rinsate solution may be applied back to the crop(s) listed on this label. Do not exceed the maximum labeled use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

\*Equivalent amounts of an alternate-strength ammonia solution or ADAMA approved cleaner can be used in the cleanout procedure. Carefully read and follow the individual cleaner instructions. Consult your Ag dealer, or applicator or ADAMA representative for a listing of approved cleaners.

### **Notes**

1. CAUTION: Do not use chlorine bleach with ammonia as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-clean spray tanks prior to performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When QPE 100 EC is tank mixed with other pesticides, examine all cleanout procedures and follow the most rigorous procedure.
4. In addition to this cleanout procedure, follow all precleanout guidelines on subsequently applied as per the individual labels.
5. Where routine spraying practices include shared equipment frequently being switched between applications of QPE 100 EC and applications of other pesticides to QPE 100 EC-sensitive crops during the same spray season, dedicate a sprayer to QPE 100 EC to further reduce the chance of crop injury.

## 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 coarse or larger spray droplets as defined by the ASABE standard ANSI/ASAE S572.1 (March 2009). 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**

- **Flow Rate/Orifice Size** - Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.
- **Pressure** - The lowest spray pressures recommended for the nozzle produce the largest droplets. 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.
- **Application Height (Ground)** – Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind, and reduce spray drift potential.

### **Controlling Droplet Size – Aircraft**

- **Number of Nozzles** - Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum.
- **Nozzle Orientation** - Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectra. For some nozzles such as solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum 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.
- **Pressure** - Selecting the pressure that produces the coarsest droplet spectrum for a particular nozzle and airspeed reduces spray drift potential. For some nozzle types such as solid streams, lower pressures can produce finer droplet spectra and increase drift potential.
- **Boom Length** - The boom length must not exceed 3/4 of wing or rotor length – longer booms increase drift potential.
- **Application Height** - Application more than 10 ft above the canopy increases the potential for spray drift. Applications made at the lowest height that are consistent with pest control objectives and the safe operation of the aircraft will reduce the potential for spray drift.

### ***Boom Height***

Setting the boom at the lowest labeled height (if specified) which provides uniform coverage reduces the exposure of droplets to evaporation and wind. For ground equipment, keep the boom level with the crop and have minimal bounce.

### ***Wind***

Apply when wind speeds are less than 15 mph. The wind speed range for optimum performance is between 3 and 10 mph. At wind speeds less than 3 mph temperature inversions may exist, and at wind speeds above 10 mph spray patterns may be compromised. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

**Note:** Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift.

### ***Temperature and Humidity***

Setting up equipment to produce larger droplets to compensate for droplet evaporation can reduce spray drift potential. Droplet evaporation is most severe when conditions are both hot and dry.

### ***Temperature Inversions***

Do not apply during temperature inversions. Drift potential is high during a temperature inversion. Surface temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface 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. Mist or fog may indicate the presence of an inversion in humid areas. Inversions may also be identified by producing smoke and observing its behavior. Smoke that remains close to the ground or moves laterally in a concentrated cloud under low wind conditions indicates a surface inversion. 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 minimizing drift potential and not interfering with uniform deposition of the product.

### ***Air Assisted (Air Blast) Field Crop Sprayers***

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, is configured properly, and that drift potential has been minimized.

**Note:** Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions to determine if an air assisted field crop sprayer can be used.

### ***Sensitive Areas***

Making applications when there is a sustained wind moving away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is an effective way to minimize the effect of spray drift.

### ***Drift Control Additives***

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Council of Producers & Distributors of Agrotechnology (CPDA).

### ***Upwind Swath Displacement***

When applications are made with a crosswind the swath will be displaced downwind. An adjustment for swath displacement is made on the downwind edge of the application site by shifting the path of the application equipment upwind.

### ***Spray Drift Control Restrictions***

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

### ***Aerial Applications***

- When applying by air, use spray nozzles that will deliver coarse or larger spray droplets as defined in the American Society of Agricultural and Biological Engineers (ASABE) standard ANSI/ASAE S572.1 (March 2009).
- The boom length must not exceed 75% of the wing span or 80% of the rotor blade diameter.
- Applications with wind speeds greater than 15 miles per hour are prohibited.
- Applications into temperature inversions are prohibited.
- Spray must be released at the lowest height consistent with pest control objectives and flight safety.
- Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size spectrum.

### ***Ground Applications***

- When applying by ground, use spray nozzles that will deliver medium or larger spray droplets as defined in the American Society of Agricultural and Biological Engineers (ASABE) standard ANSI/ASAE S572.1 (March 2009).
- Applications with wind speeds greater than 15 miles per hour are prohibited.
- Applications into temperature inversions are prohibited.
- Apply spray at the lowest height that is consistent with pest control objectives.

## STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Open dumping is prohibited. Do not store this product near fertilizers, seeds, insecticides, or fungicides. Store at temperatures above 32°F. If product is allowed to freeze, warm to 50°F and agitate before using. Do not stack containers more than three (3) containers high. Reclose all partially used containers by thoroughly tightening screw cap. Damaged or leaking containers that contain product that cannot be used immediately must be transferred to suitable sound containers and properly marked. Any spilled materials must be thoroughly absorbed with a suitable absorbent, swept up and transferred to a new or waste container for disposal as indicated under "Pesticide Disposal."

For safety and prevention of unauthorized use, store all pesticide in locked facilities. To prevent accidental misuse, store different pesticides in separate areas with enough distance between to provide clear identification.

Opened, store partially used pesticides in original containers when possible. When transfer to another container is necessary because of leakage or damage, carefully mark and identify contents of the new container. Keep containers closed when not in use.

**PESTICIDE DISPOSAL:** Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticides or environmental control agency, or the hazardous waste representative at the nearest EPA region office for guidance. Waste resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

### CONTAINER HANDLING

**Nonrefillable Container (Equal to or Less than 5 Gallons):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container ¼ full with water and recap. Shake container 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 container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by other procedures allowed by state and local authorities.

**Nonrefillable Container (Greater than 5 Gallons):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application equipment or a mix tank. Fill the container ¼ full with water. Replace and tighten closures. Tip the container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then offer container for recycling, if available, or puncture and dispose of container in a sanitary landfill, or by other procedures allowed by state and local authorities.

## LIMITATION OF WARRANTY AND LIABILITY

Read the entire directions for use, conditions of warranties and limitations of liability before using this product. If 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 ADAMA. To the extent consistent with applicable law, all such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, ADAMA makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond the statements made on this label. No agent of ADAMA is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, ADAMA disclaims any liability whatsoever for special, incidental or consequential damages resulting from the use or handling of this product.

**LIMITATIONS OF LIABILITY:** To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use or handling of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid or at ADAMA's election, the replacement of product.

**Optional Text for Import Labels: [Shipped for further Labeling and Packaging. NOT INTENDED FOR USE BY CONSUMER]  
{Reviewer Note: Import Label will not contain directions for use}**