

66222-160

01/31/2008

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

EPA Reg.  
Number:

Date of Issuance:

66222-160

JAN 31 2008

Term of Issuance: **Conditional**

Name of Pesticide Product:

MANA Quinclorac 75

**NOTICE OF PESTICIDE:**

Registration  
 Reregistration

(under FIFRA, as amended)

Name and Address of Registrant (include ZIP Code):

Makhteshim Agan of North America, Inc.  
4515 Falls of Neuse Road, Suite 300  
Raleigh, NC 27609

**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/reregistered 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 conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided you agree in writing to:

1. Submit the outstanding data requirements 830.6317 Storage Stability and 830.6320 Corrosion Characteristics within one year from the date of this letter.
2. Change the EPA Registration Number from 66222- to 66222-160.
3. Add an appropriate EPA Establishment Number to the label.
4. Add appropriate Net Contents information to the label.

Signature of Approving Official:

James Tompkins, Product Manager (25)  
Herbicide Branch, Registration Division (7505P)

Date:

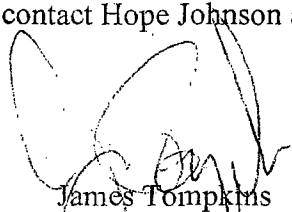
1-31-08

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5. Remove "Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco" from the PRECAUTIONARY STATEMENTS section.
6. Add "/PPE" after "Remove clothing" in the second bullet of the USER SAFETY RECOMMENDATIONS section.
7. Add the restriction "Do not apply to irrigation ditches or areas that act as a channel for water entering cropland" on page 3 in the section General Restrictions and Limitations.
8. Add the restriction "Do not apply by air in counties listed in the Aerial Application section" to the Drift subsection on page 3.
9. On page 4, revise "Field and Hedge Bindweed Control Recommendations" to "Field and Hedge Bindweed Control Directions" in footnote 1 of Table 1.
10. On page 5, revise the county "Richland" to "Richard" for the state of North Dakota.
11. Add "presented below" to the end of the statement "The applicator should be familiar with and take into account the information....." on page 5.
12. On page 6, revise the subsection "Application" to "Application Height" in the section Controlling Droplet Size.
13. On page 9, revise both occurrences of "**Field and Hedge Bindweed Control Recommendations**" to "**Field and Hedge Bindweed Control Directions**"

The basic formulation CSF [dated 1/14/08] and alternate formulation #1CSF [dated 1/14/08] of the product referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act are acceptable. The basic CSF and alternate formulation #1 CSF will be added to your file.

You will submit one (1) copy of your final printed labeling before you release the product for shipment. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6(e). A stamped copy of labeling is enclosed for your records. If you have any questions, please contact Hope Johnson at 703-305-5410.



James Tompkins  
Product Manager (25)  
Herbicide Branch  
Registration Division (7505P)

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# MANA Quinclorac 75

For weed control in non-crop areas in the following states: CO, DE, ID, IL, KS, MD, MN, MO, MT, ND, NE, NM, NV, OK, OR, PA, SD, UT, WA, WY, VA, and designated counties of TX.

**ACTIVE INGREDIENT:**

Quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid.....75.0%

**OTHER INGREDIENTS:**.....25.0%

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

## KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call 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 do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 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>
HOT LINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 877-250-9291 for emergency medical treatment information.	

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

Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco.

ACCEPTED  
with COMMENTS  
in EPA Letter Dated

JAN 31 2008

EPA Reg. No. 66222-

EPA Est. No.

**Manufactured for:**  
Makhteshim Agan of North America, Inc.  
4515 Falls of Neuse Rd., Suite 300  
Raleigh, NC 27609

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act  
as amended, for the pesticide  
registered under EPA Reg. No.

66222-160

**Net Weight:**

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**PERSONAL PROTECTIVE EQUIPMENT (PPE):**

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category A on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical-resistant gloves such as butyl rubber ≥ 14 mils, or natural rubber ≥ 14 mils, or neoprene rubber ≥ 14 mils, or nitrile rubber ≥ 14 mils
- Shoes plus socks

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.

**USER SAFETY RECOMMENDATIONS**

**Users should:**

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

**ENVIRONMENTAL HAZARDS**

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

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

**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 responsible for pesticide regulation.

Follow all applicable directions, restrictions and precautions. This label must be in the possession of the user at time of application.

**GENERAL INFORMATION**

MANA Quinclorac 75 may be used for weed suppression or control in non-crop areas. MANA Quinclorac 75 is a dry flowable formulation to be diluted with water prior to application using common agricultural spray equipment.

MANA Quinclorac 75 is a systemic herbicide. The weed foliage and roots absorb MANA Quinclorac 75 and translocates it throughout the weed. Treated weeds will show signs of leaf and stem curling or twisting, stunting, change color from green to white (chlorosis), finally to red, and become necrotic before finally dying. Annual plants treated with MANA Quinclorac 75 may not show symptoms for up to two weeks after application and up to three weeks for death of the weed. Perennial weeds treated with MANA Quinclorac 75 may not show symptoms for several weeks after application and the full effect occurring 3 to 6 months after application.

Thorough coverage of emerged weeds with the MANA Quinclorac 75 spray is essential in order for the weed foliage to absorb the MANA Quinclorac 75. Control may be more difficult in fields where larger leaves cover smaller weeds preventing thorough spray coverage of the smaller weeds.

**General Restrictions and Limitations**

- Do not apply more than a total of 16 oz. of MANA Quinclorac 75 per acre per calendar year.

- To ensure adequate weed control, do not apply to weeds or grasses under stress due to lack of moisture, herbicide injury, mechanical injury or extreme temperatures.
- Do not use recirculating sprayers, wiper applicators, or shielded applicators.
- MANA Quinclorac 75 is rainfast 6 hours after application.
- Do not apply through any type of irrigation equipment

**Drift (see additional precautions under Aerial Applications):**

- Do not apply MANA Quinclorac 75 by ground when wind is greater than 10 mph by ground or 8 mph by air.
- Do not allow MANA Quinclorac 75 to drift onto other desirable plants, especially sensitive crops belonging to the following plant families:
  - *Solanaceae* (tomato, potato, tobacco, eggplant, peppers (Capsicum), among others).
  - *Umbelliferae* (celery, parsley, carrots, among others)
  - *Leguminosae* (alfalfa, green bean, among others)
  - *Convolvulaceae* (sweet potato, among others)
  - *Chenopodiaceae* (spinach, sugar beet, among others)
  - *Malvaceae* (okra, among others)
  - *Cucurbitaceae* (watermelon, cantaloupe, squash, pumpkin, among others)
  - *Compositae* (lettuce, sunflowers, among others)
  - *Linaceae* (flax)
- Do not allow spray containing MANA Quinclorac 75 to drift onto areas where tomatoes are to be planted, have been planted, or onto emerged tomatoes, as severe injury will occur.
- Do not use MANA Quinclorac 75 in tank mixes not specified on this label or Makhteshim Agan of North America, Inc. technical bulletins.
- Do not premix MANA Quinclorac 75 with fungicides, herbicides, insecticides, additives, or fertilizers as contamination of mixing equipment and movement of MANA Quinclorac 75 to off-site mixing areas can occur.

**Weeds Controlled or Suppressed**

When used as directed, MANA Quinclorac 75 will provide suppression or control of weed species listed in Table 1.

**Table 1. Target Weeds**

Weeds Controlled	Weeds Suppressed*
<p><b><u>Annual Grasses</u></b>                      Barnyard Grass                      Crabgrass - large                      Foxtail - giant                      - green                      - yellow                      Signalgrass - broadleaf</p> <p><b><u>Annual Broadleaves</u></b>                      Bedstraw - catchweed (cleavers)                      Clovers                      Lettuce, prickly                      Morningglory spp.                      Flax - volunteer</p> <p><b><u>Perennial Broadleaves</u></b>                      Bindweed<sup>1</sup> - field                      - hedge</p>	<p><b><u>Annual Broadleaves</u></b>                      Kochia                      Lambsquarters - common                      Ragweed - common                      - giant                      Sunflower - wild                      Thistle<sup>3</sup> - Russian                      Velvetleaf</p> <p><b><u>Perennial Broadleaves</u></b>                      Dandelion                      Sowthistle<sup>3</sup> - perennial                      Spurge<sup>2</sup> - leafy                      Thistle<sup>3</sup> - Canada</p>

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\*Do not apply more than a total of 16.0 oz. of MANA Quinclorac 75 per acre per calendar year. Make applications at yellow bract (pre-bloom) or in the fall before first severe frost. For best performance to control these species, apply 8.0 oz. per acre of MANA Quinclorac 75 as a tank mix with 4-6 oz. per acre of Distinct® herbicide. Improved control is achieved by tank mixing MANA Quinclorac 75 with another herbicide that controls these listed species.

<sup>1</sup> See additional use directions under "Field and Hedge Bindweed Control Recommendations".

<sup>2</sup> Do not apply more than a total of 16.0 oz. of MANA Quinclorac 75 per acre per calendar year. Apply 8.0 – 16.0 oz. of MANA Quinclorac 75 per acre in non-crop areas for suppression and annual growth control. Make applications at yellow bract (pre-bloom) or in the fall before first severe frost. For best performance to control this species, apply 8.0 oz. per acre of MANA Quinclorac 75 as a tank mix with 4-6 oz. per acre of Distinct® herbicide.

<sup>3</sup> Do not apply more than a total of 16.0 oz. of MANA Quinclorac 75 per acre per calendar year. Apply 8.0 oz. of MANA Quinclorac 75 per acre for suppression and annual growth control. Make applications at rosette stage or bud stage and avoid application when seed stalk is bolting. For best performance on this species, tank mix 8.0 ounces per acre of MANA Quinclorac 75 with 4-6 ounces per acre of Distinct® herbicide.

**MANA QUINCLORAC 75 HERBICIDE APPLICATION AREA**

MANA Quinclorac 75 may be applied in the areas noted in Figure 1.

**Figure 1. Application Regions for MANA Quinclorac 75**

[Map to be inserted on final label]

**Texas:** MANA Quinclorac 75 may be used in the following counties of **Texas:** Archer, Armstrong, Bailey, Baylor, Borden, Briscoe, Brown, Callahan, Carson, Castro, Childress, Clay, Cochran, Coke, Coleman, Collin, Collingsworth, Concho, Cooke, Cottle, Crosby, Dellam, Dawson, Deaf Smith, Denton, Dickens, Donley, Fisher, Floyd, Foard, Garza, Glasscock, Gray, Grayson, Hale, Hall, Hansfort, Hardeman, Hartley, Haskell, Hemphill, Hockley, Hutchinson, Jack, Jones, Kent, King, Know, Lamb, Lipscomb, Lubbock, Lynn, McCulloch, Montague, Moore, Motley, Nolan, Chiltree, Oldham, Parmer, Potter, Randall, Roberts, Runnels, Schackelford, Scurry, Sherman, Sterling, Stonewall, Swisher, Taylor, Terry, Throckmorton, Wheeler, Wichita, Wilbarger, Wise, Yoakum, and Young. **Prior to application of MANA Quinclorac 75, obtain and follow all Texas state requirements for such uses.**

**APPLICATION INFORMATION**

MANA Quinclorac 75 may be applied to the sites indicated in this section of the label by ground or aerial application equipment.

Make MANA Quinclorac 75 applications by broadcast or spot sprays when weeds are actively growing. Optimum results are achieved for most broadleaf weeds from application of MANA Quinclorac 75 when weeds are small. If the weeds become too large, adequate control may not be obtained. If weeds are not actively growing, irrigation prior to application may be required to ensure effective control.

**GROUND APPLICATION (Broadcast)**

Make applications of MANA Quinclorac 75 in properly calibrated ground equipment. Apply in 5-30 gallons of water per broadcast acre at pressures up to 30 psi (measured at the boom, not at the pump or in the line). For dense weed foliage, use the higher spray volumes.

Use only nozzles that will produce uniform spray patterns and thorough coverage. Place nozzles up to 20 inches apart. Select nozzles which are designed to produce minimal amounts of fine spray particles. Do not use controlled droplet applicator (CDA) nozzles which can cause erratic weed coverage and lead to inconsistent weed control. Do not use selective application equipment such as recirculating sprayers or wiper applicators. Recommended nozzles for drift reduction include Delavan® Raindrop Drift Reduction

Flat Spray Tip, RF Tips, XR Tee Jet™ Extended range Flat Spray Tips, or other brands with similar capabilities.

Refer to Table 2 in the section on "Spray Additives" for additional requirements.

**AERIAL APPLICATION**

Make applications of MANA Quinclorac 75 in properly calibrated aerial application equipment. Apply in 3-10 gallons of water per acre

Flaggers and other personnel working on the ground to help guide aerial applications must avoid contact with spray mist and must wear personal protective equipment and protective eyewear.

Refer to Table 2 in the section on "Spray Additives" for additional requirements.

Do not apply Quinclorac by air in the following counties. The possible presence of endangered plant species in these counties might be impacted by aerial applications of MANA Quinclorac 75.

State	Counties
Colorado	Boulder, Delta, Garfield, Jefferson, La Plata, Mesa, Montezuma, Montrose, Morgan, Rio Blanco, San Miguel, Weld
Idaho	Idaho, Kootenai, Latah
Kansas	Allen, Anderson, Atchison, Bourbon, Coffey, Crawford, Douglas, Franklin, Jackson, Jefferson, Johnson, Leavenworth, Linn, Lyon, Miami, Neosho, Osage, Pottawatomie, Riley, Shawnee
Montana	Lake, Missoula
Nebraska	Box Butte, Cherry, Garden, Hall, Lancaster, Morrill, Seward, Sheridan
New Mexico	Chaves, Dona Ana, Eddy, San Miguel
North Dakota	Ransom, Richland
Oklahoma	Choctaw, Craig, Rogers
Oregon	Benton, Clackamas, Coos, Douglas, Harney, Klamath, Lane, Linn, Marion, Polk, Wallowa, Washington, Yamhill
South Dakota	Bennett, Brookings, Brown, Clay, Coddington, Day, Deuel, Grant, Lincoln, Minnehaha, Moody, Roberts, Todd, Turner, Union, Yankton
Texas	Bandera, Brazos, Burleson, Coke, El Paso, Fort Bend, Freestone, Harris, Hays, Hudspeth, Jim Wells, Kerr, Kimble, Kleberg, Leon, Live Oak, Madison, Mitchell, Nueces, Pecos, Refugio, Robertson, Runnels, San Patricio, Starr, Uvalde, Washington
Utah	Cache, Carbon, Duchesne, Emery, Garfield, Kane, Salt Lake, San Juan, Sanpete, Sevier, Tooele, Uintah, Utah, Washington, Wayne, Weber
Washington	Chelan, Clark, Cowlitz, Island, Spokane

**Drift Management**

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-related factors determine 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 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 outer most nozzles on the boom must not exceed 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 Aerial Drift Reductions Advisory Information.

### Importance of Droplet Size

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

### Controlling Droplet Size

- Volume – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets. Apply MANA Quinclorac 75 in 3-10 gallons of spray volume per acre.
- Pressure – Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE HIGHER FLOW RATE NOZZLES INSTEAD OF INCREASING PRESSURE.** Use a maximum of 40 psi (measured at the boom, not at the pump or in the line).
- Number of Nozzles – Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- Nozzle Orientation – Orienting nozzles so that the spray is released backward (the downward angle of the nozzles on fixed wing aircraft should not be greater than 20°) or parallel to the airstream on helicopters, will produce larger droplets than other orientations. Significant deflection from horizontal will reduce droplet size and increase drift potential.
- Nozzle Type – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles. Some nozzle examples are CP Lund or flat fans with angles of 25°-65°. Solid stream nozzles oriented straight back produce larger droplets than other nozzle types. If using nozzle screens, do not use screens finer than the 50-mesh size as nozzle plugging is possible.
- Boom Length – For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width.
- Application – 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 cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Swath adjustment distance should increase, with increasing drift potential (higher wind, smaller drops, etc.).

### Wind

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Do not apply MANA Quinclorac 75 when wind is blowing more than 8 mph. **Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect drift.

### Temperature and Humidity

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

### Temperature Inversions

Applications should not occur during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not



present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

**Sensitive Areas**

This pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, nontarget crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

**SPRAY ADDITIVES**

The use of spray additive(s) with MANA Quinclorac 75 is required in order to achieve consistent weed control. Methylated seed oil (MSO) is the recommended spray additive with MANA Quinclorac 75. Crop oil concentrates may also be used with MANA Quinclorac 75. Enhanced efficacy can be achieved by addition of a nitrogen fertilizer source (AMS or UAN) but cannot be used in place of methylated seed oil or crop oil concentrate. Refer to **Table 2. Spray Additive Rate Per Acre** for spray additive rates. Consult your local Makhteshim Agan of North America, Inc. representative for recommendations for your area.

**Table 2. Spray Additive Rate per Acre**

Spray Additive	Amounts to use for Aerial Applications	Amounts to use for Ground Applications
Methylated Seed Oil	1.0 – 2.0 pints <sup>2</sup>	1.0 – 2.0 pints <sup>2</sup>
Crop Oil Concentrate	2.0 pints	2.0 pints
AMS, Liquid <sup>1</sup>	1.5 quarts	--
AMS, Solid <sup>1</sup>	--	2.5 pounds
UAN Solution <sup>1</sup>	0.5 gallons	0.5 – 1 gallons

<sup>1</sup>Optional

<sup>2</sup>For best grass control, use at least 1.5 pints/acre of methylated seed oil.

**Methylated Seed Oil or Crop Oil Concentrate:**

A methylated seed oil or crop oil concentrate must meet all of the following criteria:

- Contain either a petroleum or vegetable oil base
- Be non-phytotoxic
- Contain only EPA-exempt ingredients
- Provide good mixing results from the Compatibility Test for Tank Mixtures, and
- Be successful in local experience

Suitable products will vary in their exact composition but vegetable and petroleum oil concentrates should contain emulsifiers that provide good mixing quality. Better results have been proved with highly refined vegetable oils than with unrefined vegetable oils.

For additional information, see **Compatibility Test for Mix Components**.

**For bindweed control in Oklahoma, New Mexico and the designated counties of Texas, addition of methylated seed oil plus AMS is mandatory when MANA Quinclorac 75 is applied alone.**

**Nitrogen Fertilizer Sources:**

1. **Urea ammonium nitrate (UAN):** These products are 28%, 30% or 32% nitrogen solutions. If including UANs in spray tanks, do not use brass or aluminum spray nozzles.
2. **Ammonium sulfate (AMS):** AMS may be substituted for UAN. Use high-quality AMS (spray grade) to avoid plugging of nozzles. Other sources of nitrogen are not as effective as the ones mentioned above. Makhteshim Agan of North America, Inc. does not recommend applying AMS if applied in less than 10 gallons per acre because of potential problems with precipitation in reduced volumes. Use AMS only if it has been demonstrated to be successful in local experience. Because most nitrogen solutions are mildly corrosive to galvanized, mild steel, and brass spray equipment, rinse the entire spray system with water soon after use. To avoid

plugging of spray nozzles: 1) Use high-quality AMS; 2) Use an AMS which is readily soluble in water and contains no insoluble materials. Local sources of high-quality, fine, feed-grade AMS may be better than fertilizer grade. Low-quality AMS may contain material that will not readily dissolve, which could result in nozzle tip plugging. 3) To determine AMS quality, perform a jar test adding 1/3 cup of ammonium sulfate to 1 gallon of water and agitate for 1 minute. If any undissolved sediment is observed, pre-dissolve the AMS in water and filter before adding it to the spray tank. If the AMS is added directly to the spray tank, add slowly while agitating. Adding the mix too quickly may clog outlet lines.

**Nonionic Surfactant:**

A nonionic spray surfactant (80%) may only be used when MANA Quinclorac 75 is tank mixed with other products that prohibit the use of oil additives. Reduced weed control from MANA Quinclorac 75 plus the nonionic surfactant may result. Use at the nonionic surfactant rate of: 1 quart per 100 gallons of water (0.25% vol./vol.). If a nonionic surfactant is used with MANA Quinclorac 75, a nitrogen fertilizer source must be used as well.

**TANK MIXTURES WITH MANA QUINCLORAC 75**

Other registered products such as those listed below may be tank mixed with MANA Quinclorac 75. Before using other products in combination with MANA Quinclorac 75, read and follow the **Restrictions and Limitations** and **Directions for Use** on all products' labels. The most restrictive labeling applies to tank mixes.

- **2,4-D**
- **Clarity**® (dicamba)
- **Distinct**® (diflufenzopyr + Dicamba)
- **Roundup**® RT (glyphosate)
- **Roundup**® Ultra (glyphosate)

**Compatibility Test for Tank Mixtures**

Carry out this test using a one-quart jar. Add the ingredients in the order listed below. To calculate the amount to add to a one quart jar using the following guidelines:

- For dry products applied at 1 lb per acre, add 2 teaspoons to a one-quart jar. For MANA Quinclorac 75 at the 5.3 oz. rate, use 1 teaspoon. For MANA Quinclorac 75 at the 8.0 oz. rate, use 1.5 teaspoon.
  - For liquid products applied at 1 pint per acre, add 1 teaspoon to a one-quart jar.
1. **Water:** For a spray volume of 20 gallons per acre, add 3.3 cups (800 ml) of water. Adjust the rates if other spray volumes are planned. Use water from the intended source.
  2. **Water-soluble packages:** Slit one of the bags just wide enough for a teaspoon to remove the sample. If compatible, use the opened bag first when preparing a tank mix solution. Boron-containing fertilizers can be incompatible with water-soluble bags. Include water-soluble bags if a boron fertilizer is intended to be used. Cap the jar and invert 10 times.
  3. **Water-Dispersible (WG) Products:** (such as dry flowables (DF) including MANA Quinclorac 75, wettable powders (WP), suspension concentrates (SC), or suspoemulsions). Cap the jar and invert 10 times.
  4. **Water-soluble products:** Cap the jar and invert 10 times.
  5. **Emulsifiable concentrates, methylated seed oil or crop oil concentrate.** Cap the jar and invert 10 times.
  6. **Water-soluble additives, including AMS or UAN:** Cap the jar and invert 10 times.

Let the test mixture stand for 15 minutes and then evaluate for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. Do not use any spray solution that could clog spray nozzles.

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### DIRECTIONS FOR MIXING MANA QUINCLORAC 75

Before mixing MANA Quinclorac 75 with other products, conduct a compatibility test to determine if the spray solution is stable. Follow the directions in the section **Compatibility Test for Tank Mixtures**.

1. Use only spray tanks that have been cleaned prior to use.
2. Add ¾ the amount of required water to the spray tank while agitating.
3. If an inductor system is used, rinse thoroughly after addition of each component.
  - Add products to the spray tank in the following order
    - **water-soluble pouches**--allow the pouches to dissolve before agitation or adding the next component.
    - water dispersible products including MANA Quinclorac 75 (**dry flowables, wettable powders, suspension concentrates or suspo-emulsions**).
    - **water-soluble products**
    - **Emulsifiable concentrates** (including oil concentrates)
    - **Water-soluble additives** (AMS or UAN)
  - Add the remaining amount of water to the tank and agitate to ensure a uniform distribution.
  - Continue agitation until spraying is completed. If the spray solution is allowed to settle, re-agitate thoroughly to resuspend the mixture and then continue spray operations.

#### Cleaning of Spray Equipment

Ensure that spray equipment is properly and thoroughly cleaned before and after applying MANA Quinclorac 75. Use a strong detergent or commercial sprayer cleaner and follow the manufacturer's directions for use.

#### NON-CROP AREAS (Roadsides, Fencelines and Rights-of-Way)

Non-crop areas that may be treated with MANA Quinclorac 75 include fence lines, roadsides, highway medians, utilities, railroad and pipeline rights-of-way. MANA Quinclorac 75 controls certain weeds in the Noxious Weed Control Programs, Districts or Areas when applied by broadcast application or as spot treatments. Refer to Table 1 for weeds controlled. For annual weeds, use 5.3 – 8.0 oz. of MANA Quinclorac 75 per acre, or for perennial weeds use 8.0 – 16.0 oz. per acre. Do not exceed a total of 16.0 oz. of MANA Quinclorac 75 per acre per calendar year. For bindweed control with MANA Quinclorac 75, refer to the section entitled "**Field and Hedge Bindweed Control Recommendations**" below for additional use directions.

#### Field and Hedge Bindweed Control Recommendations

Application of MANA Quinclorac 75 herbicide in the fall just prior to the first severe frost provides the most effective bindweed control. Make applications to bindweed plants that are actively growing and at least 4 inches long. Wait a minimum of 30 days for bindweed plants to re-grow after tillage (if tillage is a part of the local post-harvest practice), before making the MANA Quinclorac 75 application. If applied yearly at 5.3 – 8.0 oz. per acre in the fall, MANA Quinclorac 75 will provide long-term bindweed control. The higher rate is used when plants are large or densely populated. Refer to Table 2 in the section on "Spray Additives" for additional requirements.

#### STORAGE AND DISPOSAL

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

**PESTICIDE STORAGE:** Store in a secure, dry, well-ventilated area.

**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:** Triple rinse (or equivalent). 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.

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### 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 Makhteshim Agan of North America, Inc. All such risks shall be assumed by the user or buyer.

**DISCLAIMER OF WARRANTIES:** To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. 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 Makhteshim Agan of North America, Inc. is authorized to make any warranties beyond those contained herein or to modify the warranties contained herein. To the extent consistent with applicable law, Makhteshim Agan of North America, Inc. 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 Makhteshim Agan of North America, Inc.'s election, the replacement of product.

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Delavan® is a registered trademark of Garlock International Inc.

Tee Jet™ is a trademark of Spraying Systems Company.