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NIAGARA

FORMULA 500 ATRAZINE

FLOWABLE HERBICIDE

AGRICULTURAL

FOR BROAD SPECTRUM WEED CONTROL IN CORN

GUARANTEE:

ATRAZINE	500 G/L
ATRAZINE	485 G/L
RELATED ACTIVE TRIAZINES	15 G/L

REGISTRATION NO 16447
PEST CONTROL PRODUCTS ACT

MAY AND BAKER CANADA INC.
2000 ARGENTIA ROAD
PLAZA 3
MISSISSAUGA, ONTARIO
L5N 1V9

IN CASE OF SPILLS, POISONING OR FIRE
TELEPHONE EMERGENCY RESPONSE NUMBER COLLECT
(416)634-2359 (24 HOURS A DAY)

READ THE LABEL AND ATTACHED BROCHURE BEFORE USING

PRECAUTIONS:

Keep out of reach of children. Avoid contact with skin, eyes and clothing
Store the container tightly closed away from seeds, fertilizer, plants and
foodstuffs. Wash concentrate from skin or eyes immediately. Avoid working in
spray mist or vapours. After use wash hands and other exposed skin. Avoid

contamination of ponds, streams, rivers and other water sources.

FIRST AID:

If in eyes, irrigate immediately with water for at least 15 minutes. Get medical attention.

If swallowed and patient is conscious, induce vomiting by touching the back of the throat with a finger or blunt object. Rush patient to hospital taking this label with you for reference.

If mists or vapours inhaled, remove patient to fresh air. If patient has any breathing difficulty, get medical attention.

If on skin and clothes, wash contact area thoroughly with soap and water; clothes should be laundered before reuse.

TOXICOLOGICAL INFORMATION:

This product has low toxicity via oral, dermal, and respiratory routes. It is also mildly irritating to eyes and skin. No specific antidote is known. Apply symptomatic therapy.

STORAGE:

Store in tightly closed containers and prevent from contacting feeds, fertilizers, plants, seeds and foodstuffs. Insecticides and fungicides should be segregated from herbicides so as to prevent the possibility of cross-contamination. Store at temperatures above 0°C. If subjected to freezing temperatures, warm to at least 50 C and mix thoroughly. SHAKE WELL BEFORE USING.

DISPOSAL:

1. Rinse the emptied container thoroughly and add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on the disposal of unused, unwanted product and the cleanup of spills contact the regional office of Conservation and Protection, Environment Canada.

NOTICE TO USER:

This control product is to be used only in accordance with the directions on this label. It is an offence under the Pest Control Products Act to use a control product under unsafe conditions.

NOTICE TO BUYER:

Seller's guarantee shall be limited to the terms set out on the label and subject thereto. The buyer assumes the risk to persons or property arising from the use or handling of this product and accepts the product on that condition.

GENERAL DIRECTIONS

WEEDS CONTROLLED

Niagara Formula 500 Atrazine will effectively control a wide range of annual grasses and broadleaf weeds such as:

Mustards	Lamb's-Quarters**
Purslane	Redroot Pigweed**
Ragweed**	Volunteer Clover
Smartweed	Barnyard Grass
Lady's Thumb	Foxtail (green)
* Wild Buckwheat	Foxtail (yellow)
Wild Oats	Old Witchgrass

*Green foxtail is best controlled by a post-emergent treatment.

**Certain species of annual broadleaf weeds have exhibited tolerance to Niagara Formula 500 Atrazine applications. Post-emergent sprays of 2,4-D will adequately control these weeds. For further information regarding control of these particular weeds in your area, consult your local agricultural authorities.

For control of Quackgrass, Canada Thistle and Nutgrass see page 6.

Niagara Formula 500 Atrazine will not control established perennials at rates recommended for annual broadleaf weed and grass control in corn, but will kill perennial species freshly starting from seed.

Niagara Formula 500 Atrazine used in a pre-emergence application acts mainly through root absorption; consequently, rainfall or irrigation is needed to move it into the root zone. If no injury to the weeds is immediately apparent, and if they continue to grow, as may occur under dry or minimal

moisture conditions, a shallow cultivation or rotary hoeing will keep them in check until moisture conditions improve.

TIMING OF APPLICATION

Niagara Formula 500 Atrazine may be applied to corn land prior to planting (pre-plant treatment), after planting but prior to emergence of weeds and corn (pre-emergent treatment) or after emergence of weeds and corn (post-emergent treatment).

Pre-Plant Treatment: (Incorporated or non-incorporated) Broadcast in the Spring at the rate indicated in the table below. Apply before, during or after final seedbed preparation. If further tillage is intended after spraying, do not incorporate Niagara Formula 500 Atrazine deeper than 2.5 cm.

Pre-emergent Treatment: The seedbed must be firm and free from large air spaces. Apply the Niagara Formula 500 Atrazine spray during or shortly after planting, prior to weed emergence. NOT USE NIAGARA FORMULA 500 ATRAZINE ON LOOSE AND ROUGH SEEDBEDS.

Post-emergent Treatment using Niagara Formula 500 Atrazine in Oil-water, emulsion: The post-emergent activity of Niagara Formula 500 Atrazine is increased when applied in an oil-water emulsion. This combination produces satisfactory control of seedling broadleaf weeds up to 10 cm high and of annual grasses up to 3 cm high in the 1 to 2-leaf stage. The combination of Niagara Formula 500 Atrazine in oil-water emulsions has been particularly useful following periods of hot, dry weather, when weeds are more difficult to kill.

NOTE: Some injury to corn can occur with Niagara Formula 500 Atrazine applied in oil-water emulsions, especially during cold, backward weather. There is no risk of corn injury when Niagara Formula 500 Atrazine is applied in water alone. Do not add hormone-type weed killers such as 2,4-D, 2,4-DB, MCPA, MCPB and dicamba, or other herbicides, to combinations of oil-water emulsions and Niagara Formula 500 Atrazine. The risk of damage to other vegetation from spray drift is increased with the use of Niagara Formula 500 Atrazine in an oil-water emulsion.

LIQUID FERTILIZERS

For pre-plant and pre-emergence application, nitrogen solutions or complete Liquid Fertilizers may replace all or part of the water as a carrier for Niagara Formula 500 Atrazine.

CAUTION: Do not apply after the corn has emerged as there is danger of Liquid Fertilizer causing crop injury.

If there is any doubt about compatibility of a particular fertilizer formulation, check by mixing a small amount of Niagara Formula 500 Atrazine with the Liquid Fertilizer.

MIXING INSTRUCTIONS

Water/Fertilizer solutions: Niagara Formula 500 Atrazine must be mixed with water or fertilizer solutions and applied as a spray. Prepare the spray by pouring the liquid into the tank during filling with carrier. By -pass agitation is sufficient to keep the material in suspension if the return lines discharge near the bottom of the tank.

Mixing Niagara Formula 500 Atrazine with Emulsified Oil in Water: Use 3.25-4.5 litres of Niagara Formula 500 Atrazine plus 17 litres of an emulsifiable crop oil in 150-350 litres of water per hectare. The higher rate of Niagara Formula 500 Atrazine should be used where annual grasses are a problem. Use only oils which are emulsifiable, non-herbicidal crop oils labelled for use with Formula 500 Atrazine. Oils contaminated with water or other materials can cause either compatibility problems or crop injury, or both.

Follow Proper Mixing Steps:

1. Use 16 mesh or coarser suction screen and 50 mesh or coarser inline and tip screens. Thoroughly clean sprayer prior to use.
2. Fill spray tank from 1/4 to 1/3 full with carrier.
3. Engage the agitation system and pour in the required amount of Niagara Formula 500 Atrazine.
4. Continue agitation while adding the remainder of the carrier.
5. Finally, add the emulsifiable oil or product to the tank mixed with Niagara Formula 500 Atrazine (e.g. Dual, Bladex, Sutan +.) The mixture can now be applied.
6. Before refilling, empty the tank as completely as possible to prevent a buildup of oil in the tank. If any spray mixture remains in the tank, keep the agitation system in operation to avoid a separation of the oil from the water.
7. If an oil film starts to build up in the tank, drain and clean it with a strong detergent solution or solvent.
8. Immediately after use, thoroughly clean the sprayer by flushing the system with water containing a detergent.

Spraying: Spraying should be done at a pressure of 200-300 kPa.

METHODS OF APPLICATION

Niagara Formula 500 Atrazine may be applied either as an overall spray or as a band treatment. Band treatments are desirable where cultivation is intended to alleviate hard soil conditions, or to control troublesome perennial weeds. For overall application, apply Niagara Formula 500 Atrazine either pre-plant incorporated or pre-emergence in 100-350 L/ha or post-emergence in 170-350 L/ha of spray. For banding, use proportionately less product and spray per hectare.

APPLICATION RATES

The rates given below are calculated on the basis of 1 litre. NOTE: The rates shown in this table do not apply to Quackgrass and Nutgrass. For control of these weeds, see separate directions below.

SOIL TYPE	OVERALL SPRAY	
	Rate per Hectare	Crop Hectares Treated per 10 L of Niagara Formula 500 Atrazine
Light and Sandy (See Note a)	3.25 L	3.1
Loams & Clays	4.5 L	2.2
Muck Soils (See Note b)	6.75 L	1.5

NOTE: (a) The rates for loams and clays should be used on light and sandy soils where annual grass weeds predominate, or where an unusually heavy infestation of broadleaf weeds is expected.

NOTE: (b) Muck soils are highly absorptive and may interfere with the uptake of Niagara Formula 500 Atrazine by weed roots following pre-emergence treatment. Therefore, a firm level seedbed is particularly important and unless this can be achieved, an early post-emergent spray is preferable to a pre-emergent treatment.

QUACKGRASS, CANADA THISTLE AND NUTGRASS CONTROL

Quackgrass (Couchgrass) and Canada Thistle: Make an application to Quackgrass foliage or areas infested with Canada Thistle in the Fall or early Spring using 4.5 L of Niagara Formula 500 Atrazine in 170-350 litres of water per hectare. Plough or cultivate one to three weeks later. Make a second application after planting the corn using 4.5 litres of Niagara Formula 500 Atrazine per hectare as an early post-emergent spray. The addition of 17 L of an emulsifiable oil or surfactant oil concentrate (2.75-5.5 L) to this second treatment will increase the speed of kill of the Quackgrass and Canada Thistle foliage. Row cultivation will increase the effectiveness of this treatment.

When the use of the split application of Niagara Formula 500 Atrazine described above has not been possible and severe Quackgrass or Canada Thistle infestation develops in established corn, an "emergency treatment" should be considered. Apply 9.25 L of Niagara Formula 500 Atrazine plus 17 L of emulsifiable oil or surfactant oil concentrate (2.75-5.50 L) in 170-350 L of water per hectare. Some temporary injury to the corn may occur; however, such injury is usually offset by increased yields due to control of Quackgrass and Canada Thistle. It usually takes several annual applications of Niagara Formula 500 Atrazine to eliminate Canada Thistle; however, one season's treatment gives good economic control.

Nutgrass (Nutsedge): Apply 4.5 L of Niagara Formula 500 Atrazine to the soil in the Spring before the Nutgrass shoots emerge and work in to a depth of 5-7.5 cm by discing and harrowing. Plant the corn and make a second application of 4.5 L of Niagara Formula 500 Atrazine per hectare in an oil-water emulsion when the Nutgrass is in the early post-emergent (spike) stage. Row cultivation may be necessary to obtain good control.

NOTE: When either the split application of "emergency treatment" of Niagara Formula 500 Atrazine has been used, corn must be grown on the land for two successive years.

NIAGARA FORMULA 500 ATRAZINE TANK MIX COMBINATIONS (FOR USE ON SILAGE, FIELD AND SWEET CORN)		
COMBINATION/APPLICATION TIME	WEEDS CONTROLLED	RATE PER HECTARE
NIAGARA FORMULA 500 ATRAZINE/DUAL		

pre-plant incorporated yellow nutsedge, Pre-emerged	yellow nutsedge, annual grasses and broadleaf weeds annual grasses and broadleaf weeds	2.25-3.25 L of Niagara Formula 500 Atrazine + 2-2.75 L of Dual 2.25-3.25 L of Niagara Formula 500 Atrazine + 2-2.75 L of Dual
NIAGARA FORMULA 500 ATRAZINE/SUTAN +*		
pre-plant incorporated pre-plant incorporated	annual grasses and broadleaves yellow nutsedge (nutgrass) annual grasses and broadleaf weeds	2.25-3.25 L of Niagara Formula 500 Atrazine + 4.25 L of Sutan + 8E 2.25-3.25 L of Niagara Formula 500 Atrazine 5.5 L of sutan + 8E
NIAGARA FORMULA 500 ATRAZINE/BLADEx**		
pre-emergent early post-emergent	annual grasses and broadleaf weeds annual grasses and broadleaf weeds	2.25-3.25 L of Niagara Formula 500 Atrazine + 2.25-2.75 kg of Bladex 80W 2.25 L of Niagara Formula 500 Atrazine + 2.25-2.75 kg of Bladex 80W

Sutan + is a registered trade mark of I.C.I. Bladex is a registered trade mark of CIBA-GEIGY CANE LTD.

Dual is a registered trademark of CIBA-GEIGY CANE LTD.

Either for severe infestations of late germinating grasses (e.g. crabgrass) or for the reduction of residues of Niagara Formula 500 Atrazine for certain susceptible succeeding crops, the above tank mix combinations are recommended.

CAUTION - Do not mix oils, oil concentrates or surfactants or hormone-type herbicides with Niagara Formula 500 Atrazine/Bladex. The respective label MUST be consulted for detailed directions and dosage variations according to soil type and spray timing. FOLLOW ALL MIXING INSTRUCTIONS, USE PRECAUTIONS

AND WARNINGS THAT APPEAR ON THE LABEL OF THE PRODUCT SELECTED FOR THE TANK MIXING WITH Niagara Formula 500 Atrazine.

WARNING

Injury may occur if land treated with Niagara Formula 500 Atrazine is planted to any crop other than corn in the same season. One year after application there is virtually no hazard to most rotational crops when label rates are applied. Sugar beets are sensitive to Niagara Formula 500 Atrazine and should not be planted on land treated with Niagara Formula 500 Atrazine the previous year. THOROUGH TILLAGE INCLUDING PLOUGHING SHOULD PRECEDE THE PLANTING OF CROPS OTHER THAN CORN. PLOUGH THE LAND FLAT AS OPPOSED TO SETTING THE FURROW ON EDGE. UNEVEN APPLICATION OF NIAGARA FORMULA 500 ATRAZINE OR APPLICATION IN EXCESS OF RECOMMENDED RATES WILL NOT INC CORN BUT MAY RESULT IN THE INJURY TO SUCCEEDING CROPS OTHER THAN CORN.

When extended periods of dry weather occur during the year of treatment, there can be some injury to succeeding crops such as white beans, onions, peas, tomatoes and turnips. Injury is most likely to occur when the seeding crop is subjected to -periods of stress, e.g. during periods of abnormally hot, dry weather. When the directions outlined on this label are followed, injury to these crops is unlikely to occur under normal weather conditions. Under conditions of heavy rainfall sufficient to cause erosion, soil containing Niagara Formula 500 Atrazine may wash to lower areas of land and injury to existing or subsequent crops other than corn may result.

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