

Tank Mixture for Broadleaf and Grass Weed Control in Established Lawns and Turf Areas  
 For broadleaf weeds controlled see "Susceptible Weeds" list.

BEST DOCUMENT AVAILABLE

264-204

Product/ Area	Rate/ Acre	APPLICATION TIMING Crop	Weeds	Spray Volume
BROMINAL + MSMA or DSMA	2 pts (0.5 lb ai*) + 2-3.0 lb ai Refer to manufacturer's label for proper rate per acre of MSMA or DSMA.	Established bluegrass, bermudagrass, tall fescue and zoysia. Do not apply to bent- grass, carpet- grass, centipede- grass or St. Augustinegrass. Grasses may show temporary discoloration	Seedling broadleaf weeds, crabgrass, goosegrass, nutsedge and sandbur. Apply during warm weather 80-90 degrees F. Begin treatment when weedy grasses have 3-4 leaves. More mature plants require additional applications 7-10 days apart. Three to four applications of MSMA or DSMA may be necessary for nutsedge and sandbur control. Spray when soil moisture is good.	20 or more gallons of water per acre for large areas. 2-4 gallons of water per 1000 square feet for small areas.

\*ai= active ingredient

Read carefully the labels of any product used as a tank mixture. Note cautions and limitations on this and products used in tank mixtures to assure maximum weed control and turf and applicator safety.

DO NOT FEED TURF GRASSES TREATED WITH BROMINAL TO LIVESTOCK.

Conversion Chart	Rate Pints per Acre	Rate Fluid Ounces per 10,000 sq. ft.
	0.125	0.46
	0.25	0.92
	0.50	1.84
	0.75	2.75
	1.0	3.67
	2.0	7.35
	3.0	11.02
	4.0	14.70
	8.0	29.40

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Susceptible Weeds When Treated at the Proper Stage:

Annual sowthistle	( <i>Sonchus oleraceus</i> )
Black mustard	( <i>Brassica nigra</i> )
Blue (purple) mustard	( <i>Chorispora tenella</i> )
Bristly star bur	( <i>Acanthospermum hispidum</i> )
Bullthistle	( <i>Cirsium vulgare</i> )
Bur buttercup	( <i>Ranunculus testiculatus</i> )
Cocklebur	( <i>Xanthium pensylvanicum</i> )
Corn chamomile	( <i>Anthemis arvensis</i> )
Corn gromwell	( <i>Lithospermum arvense</i> )
Cow cockle	( <i>Saponaria vaccaria</i> )
Dog fennel (Mayweed)	( <i>Anthemis cotula</i> )
Dyers wood	( <i>Isatis tinctoria</i> )
Fiddleneck	( <i>Amsinckia intermedia</i> )
Field pennycress, fanweed	( <i>Thlaspi arvense</i> )
Fivehooked bassia	( <i>Bassia hyssopifolia</i> )
Fumitory	( <i>Fumaria officinalis</i> )
Green smartweed	( <i>Polygonum scabrum</i> )
Groundsel	( <i>Senecia vulgaris</i> )
Henbit	( <i>Lamium amplexicaule</i> )
Jimsonweed	( <i>Datura stramonium</i> )
Knawel (German moss)	( <i>Scleranthus annuus</i> )
Kochia	( <i>Kochia scoparia</i> )
Lambsquarters	( <i>Chenopodium album</i> )
London rocket	( <i>Sisymbrium irio</i> )
Mare's-tail	( <i>Conyza canadensis</i> )
Miners lettuce	( <i>Montia perfoliata</i> )
Morningglory (annual)	( <i>Ipomoea hederacea</i> )
Nettleleaf goosefoot	( <i>Chenopodium murale</i> )
Nightshade	( <i>Solanum nigrum, villosum</i> )
Nodding thistle	( <i>Carduus nutans</i> )
Parthenium ragweed	( <i>Parthenium hysterophorous</i> )
Pennsylvania smartweed	( <i>Polygonum pennsylvanicum</i> )
Pepperweed	( <i>Lepidium campestre</i> )
Pigweed	( <i>Amaranthus retroflexus</i> )
Popcorn flower	( <i>Alloccarya figurata</i> )
Prickly (Chinese) lettuce	( <i>Lactuca scariola</i> )
Puncture vine	( <i>Tribulus terrestris</i> )
Ragweed	( <i>Ambrosia artemisiifolia</i> )
Red maids rockpurslane	( <i>Colandrinia caulescens</i> )
Russian thistle	( <i>Salsola kali</i> )
Shepherdspurse	( <i>Capsella bursa-pastoris</i> )
Silver leaf nightshade	( <i>Solanum elaeagnifolium</i> )
Smallseeded false flax	( <i>Camelina microcarpa</i> )
Southern giant curl mustard	( <i>Brassica japonica</i> )
Sunflower	( <i>Helianthus annuus</i> )
Tansy mustard	( <i>Descurainia pinnata</i> )
Tartary buckwheat	( <i>Fagopyrum tataricum</i> )
Tarweed	( <i>Hemizonia spp.</i> )

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Treacle mustard	(Erysimum repandum)
Tumble (Jim Hill) mustard	(Sisymbrium altissimum)
Velvetleaf	(Abutilon theophrasti)
Wild buckwheat	(Polygonum convolvulus)
Wild mustard	(Brassica kaber)
Wild radish	(Raphanus raphanistrum)
Winter vetch	(Vicia sativa)
Yellow rocket	(Barbarea vulgaris)
Yellow star thistle	(Centaurea solstitialis)

This treatment will not control established perennial broadleaf weeds such as Canada thistle, bindweed, or horsetail rush.

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#### DIRECTIONS FOR INDUSTRIAL USE

Russian Thistle and Annual Broadleaf weeds on roadsides, vacant lots, railroads and industrial sites.

For broadcast treatment of small weeds:

Apply 2 quarts of BROMINAL broadleaf herbicide with either 2 quarts of surfactant (such as X-77) or 2 gallons of diesel oil in 150 gallons of water for each acre sprayed. Thorough coverage is important. Make sure spray boom is high enough to contact tops of all plants. Use adequate spray pressure to contact all leaf surfaces.

For spot treatments of scattered infestations or large weeds along fencerows or buildings:

Mix 1 quart BROMINAL with either 1 quart surfactant (such as X-77) or 1 gallon diesel oil per 100 gallons of spray solution. Cover all the weed foliage thoroughly. Use at least 200 gallons of spray solution for each acre sprayed.

When using oil, add chemical to oil--then add this mixture to water while agitating vigorously.

#### GENERAL INFORMATION INDUSTRIAL USE

BROMINAL broadleaf herbicide effectively controls Russian thistle and certain other summer annual broadleaf weeds such as saltbrush (Atriplex), mare's-tail, puncture vine, prostrate spurge, and Bassia.

#### PRECAUTIONARY STATEMENTS

##### HAZARD TO HUMANS AND DOMESTIC ANIMALS

##### WARNING

Harmful if swallowed. Avoid contact with skin, eyes, clothing. Avoid breathing spray mist.

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#### STATEMENT OF PRACTICAL TREATMENT

In case of eye contact, rinse thoroughly with water and get medical attention. In case of skin contact, wash immediately with soap and water and remove contaminated clothing.

If swallowed - drink promptly large quantities of milk, egg white, gelatin solution or if these are not available, drink large quantities of water. Avoid alcohol. Get medical attention.

#### GENERAL WORKER PROTECTION STATEMENTS

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

Do not enter treated areas without protective clothing until sprays have dried. Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information. Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: appropriate signal word (DANGER, WARNING, CAUTION), area treated, date of application, appropriate protection clothing, and reentry interval if applicable.

#### ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not apply directly to water. Do not apply when weather conditions favor drift from treated areas. Do not contaminate water used for irrigation or domestic purposes by cleaning of equipment or disposal of waste.

DO NOT USE THIS PRODUCT FOR PURPOSES OTHER THAN THOSE RECOMMENDED ON THIS LABEL. Open dumping is prohibited. Clean sprayers thoroughly before using to apply BROMINAL broadleaf herbicide. To clean sprayer after using BROMINAL broadleaf herbicide, rinse all parts of sprayer with water several times. Avoid spray drift to adjacent crops as injury may result. Coarse sprayers are less likely to drift.

#### STORAGE AND DISPOSAL

Do not store near fertilizers, seed, insecticides or fungicides. Do not contaminate water, food, or feed by storage or disposal.

#### PESTICIDE DISPOSAL

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

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**CONTAINER DISPOSAL**

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or dispose of in a sanitary landfill, or by incineration or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**LIMITED WARRANTY AND DISCLAIMER**

The manufacturer warrants (a) that this product conforms to the chemical description on the label; (b) that this product is reasonably fit for the purposes set forth in the directions for use when it is used in accordance with such directions; and (c) that the directions, warnings and other statements on this label are based upon reasonable experts evaluation of reasonable tests of effectiveness, of toxicity to laboratory animals and to plants, and of residues on food crops, and upon reports of field experience. Tests have not been made on all varieties or in all states or under all conditions. THE MANUFACTURER NEITHER MAKES NOR INTENDS, NOR DOES IT AUTHORIZE ANY AGENT OR REPRESENTATIVE TO MAKE, ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, AND IT EXPRESSLY EXCLUDES AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

This warranty does not extend to, and the Buyer shall be solely responsible for, any and all loss or damage which results from the use of this product (a) in any manner which is inconsistent with the label directions, warnings or cautions.

BUYER'S EXCLUSIVE REMEDY AND MANUFACTURER'S OR SELLER'S EXCLUSIVE LIABILITY FOR ANY AND ALL CLAIMS, LOSSES, DAMAGES, OR INJURIES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, WHETHER OR NOT BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL BE LIMITED, AT THE MANUFACTURER'S OPTION, TO REPLACEMENT OF OR THE REPAYMENT OF THE PURCHASE PRICE FOR, THE QUANTITY OF PRODUCT WITH RESPECT TO WHICH DAMAGES ARE CLAIMED. IN NO EVENT SHALL MANUFACTURER OR SELLER BE LIABLE FOR SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT.

3/25/82



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Contents 5 Gallons (18.92 liters)

**BROMINAL®**  
Broadleaf Herbicide

**CROP USE**

Controls annual broadleaf weeds in wheat, barley, oats, rye, flax, garlic, onions, established turf areas and newly seeded or sprigged grasses.

**INDUSTRIAL USE**

Controls Russian thistle and other annual broadleaf weeds on roadsides, vacant lots, railroads and industrial sites.

For Commercial or Agricultural Use Only.

**WARNING:**

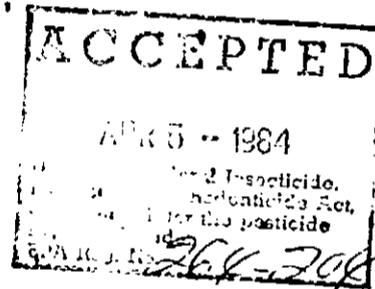
Keep out of reach of children.

**AVISO**

See other warnings on right panel.

**PRECAUCION AL USUARIO:**

Si used no lee ingles, no use este producto hasta que le etiqueta haya sido explicado ampliamente.



**Active Ingredient:**

Octanoic acid ester of bromoxynil\*

(3,5-dibromo-4-hydroxybenzotrile) . . . . . 31.7%

Inert Ingredients: . . . . . 68.3%

\*bromoxynil equivalent 21.8% by weight or 2 pounds per gallon.

Made in U.S.A.

UNION CARBIDE AGRICULTURAL PRODUCTS COMPANY, INC.

P. O. Box 12014, T. W. Alexander Drive,

Research Triangle Park, NC 27709

EPA Reg. No. 264-204-AA

EPA Est. 264-MO-1

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## DIRECTIONS CROP USE

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

### WHEAT, BARLEY, OATS AND RYE

Apply 1 to 2 pints of BROMINAL broadleaf herbicide per acre after small grains emerge, but before weeds are past the 3 to 4 leaf stage. Weeds that form rosettes should be treated when these weeds are less than 1-1/2 inches across.

Proper timing, rate of application, and spray volume will vary according to the weed species present. See the table below.

Good coverage is essential for maximum weed control. Use 10 or more gallons of water per acre with ground sprayers. Nozzle pressure should be at least 30 psi. Use 2 or more gallons of water per acre with aerial sprayers according to the table below. Width of swath must not exceed length of spray boom.

Do not apply to small grains during or after the boot stage. Do not apply when crop is under stress for lack of moisture or when crop forms a canopy over weeds.

BROMINAL broadleaf herbicide may be applied in liquid fertilizer or combinations of liquid fertilizer and water. Use constant agitation until the spray mixture has been completely applied.

Tank mixes permit choosing a herbicide combination most effective for the weed problems present on your farm. Use BROMINAL broadleaf herbicide alone or in combination according to the table below. If the amine of 2,4-D or MCPA is added, mix these into the water first, then add BROMINAL. If Banvel is tank mixed with BROMINAL, water should be added to the spray tank first, followed by BROMINAL and Banvel. If Karmex is tank mixed with BROMINAL for henbit, gromwell and other weed control, observe all cautions on the Karmex label and especially those regarding winter stress, varieties, soil texture, organic matter, planting depth, plant vigor and replanting. Follow all cautions and limitations on the labels of the products you select to mix with BROMINAL.

When using a tank mix of BROMINAL broadleaf herbicide and Avenge fill the tank with about 2/3's of the required water and start agitation. Add BROMINAL and mix thoroughly and with the agitation still running add the Avenge and the remainder of the required water. Agitate and recycle for at least five minutes before spraying and continue agitation until spraying is completed. Do not apply Avenge tank-mix under stress conditions or if the plants are wet with rain or dew or if rain is predicted within 6 hours.

When using the BROMINAL and Hoelon tank mixture, cold (lower than 40°F) and/or prolonged wet weather conditions increase the sensitivity of barley to Hoelon and Hoelon should not be used under these adverse weather conditions. Use the low rate of Hoelon when weather conditions are cool and moist.

When applying a tank mix of BROMINAL and Carbyne follow the directions for spray nozzle arrangements on the Carbyne label.

Do not graze treated fields for 30 days after application. When treating with Banvel do not graze treated areas or harvest for dairy feed prior to crop maturity.

When treating with Avenge do not graze treated fields or cut treated forage for silage although grain and straw from treated fields can be fed to livestock.

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The tank mixture of BROMINAL® bromoxynil broadleaf herbicide and Glean provides winter wheat producers with an effective contact and soil active herbicide combination. This tank mixture improves control of henbit, tansy mustard, groundsel, Chinese lettuce, bedstraw, lambsquarters, chickweed, wild buckwheat and miners lettuce.

Apply the tank mixture BROMINAL® and Glean to actively growing weeds as weeds hardened off by low fertility, drought stress or cold weather may not be controlled.

Good spray coverage is essential for maximum weed control. Use 10 or more gallons of water per acre with ground sprayers or 4-10 gallons of water per acre for air application. Wide spaced low pressure flood type nozzles do not give satisfactory coverage. Nozzle pressure should be at least 30 psi.

When preparing this tank mix of BROMINAL® bromoxynil and Glean fill the spray tank with 2/3's of the required water and mix the proper amount of Glean in the water with the agitator running. With the Glean in suspension and the agitator running add the BROMINAL® and the remainder of the required water. Agitation is required for uniform mixing and application.

Carefully follow all precautions on the label for Glean. Be particularly observant of crop rotation, recropping interval guidelines and spray cleanup procedures. Minimum recropping interval guidelines are described in part as follows on the Glean label: "Crop rotation plans are determined by soil pH, recropping interval, and for crops other than wheat or barley, results of a field bioassay. Minimum recropping interval is from time of last application to anticipated date of planting next crop." Read the complete label for Glean weed killer dry flowable and "Glean-Field Bioassay" for information to provide maximum flexibility for crop rotation.

Do not apply this tank mixture when conditions favor spray drift.

A tank mixture of BROMINAL® and metribuzin will control chickweed, filaree, henbit and dogfennel in addition to all weeds listed on the BROMINAL® label in non-irrigated winter wheat.

Crop injury can occur from this combination if used in wheat that is too small and/or stressed from winter injury. The higher rates of BROMINAL® in combination with the higher rates of Metribuzin should be used only in an emergency weed situation and if some minor crop injury is acceptable. When using the higher rates the wheat should be fully tillered and have a well established secondary root system.

CONVERSION TABLE FOR DETERMINING RATE OF PRODUCT PER ACRE TO USE

Metribuzin	Sencor or Lexone 50 WP	Sencor 4 or Lexone 4L	Sencor 75 Sprayule or Lexone 75 DF
1/8 lb ai/A	1/4 lb/A	1/4 pt/A	1/6 lb/A
3/16 lb ai/A	3/8 lb/A	3/8 pt/A	1/5 lb/A
1/4 lb ai/A	1/2 lb/A	1/2 pt/A	1/3 lb/A

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To prepare the spray mixture fill the tank 2/3 to 3/4 full of water. With agitation running, add the proper amount of Metribuzin as determined from the table above, add the required amount of BROMINAL® and finally add the remaining water.

A recognized authority in your area should be consulted concerning proper rates and timings for your conditions.

Do not use Metribuzin on irrigated wheat or crop injury may result. Do not exceed the rates on this label. Avoid applications when crop is under stress from winter kill, frost damage, disease or drought.

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WHEAT - BARLEY - OATS - RYE When to Spray, Amounts to Use

Area & Crop Stage	Chemical Rate/Acre	Size of Weeds	Amount of water needed per Acre
CEREAL AREAS Fall through early spring applications before or after tillering (not underseeded with legumes)	1-2 pints BROMINAL	Apply to emerged susceptible weeds in the 2-4 leaf stage or when rosettes are less than 1.5 inches across.	Use 10 to 20 gal. with ground or 5-10 gal. with air application. Use higher volumes for larger weeds or when growing conditions are poor.  Use 2 or more gal with midwest air application.
Application after tillering and before the forming of joints in the stem	1-1.5 pints BROMINAL + 1/4 lb/A or 2,4-D or MCPA*	All weeds including wild buckwheat, cow cockle, fiddleneck, tarweed; apply after 4-leaf stage but before 6 inches high.	Use 10-20 gal. with ground or 4-10 gal. with air application. Use higher volume on larger weeds.
Apply when spring wheat is from 3-leaf up to joint stage	1-1.5 pints BROMINAL + 1/16-1/8 pints of Banvel	Bachelor's button, knotweed, mustard, nightshade, Russian thistle, wild buckwheat, lambsquarters, fanweed, dogfennel, cow cockle; apply when weeds are small (early seeding).	Use 10 or more gal. of water per acre for ground application.
Fall through early spring application when wheat is from 3-leaf up to joint stage	1-1.5 pints BROMINAL + 1/8 pint of Banvel	Kochia, fiddleneck, miners-lettuce, knotweed, wild buckwheat, prickly lettuce, jacobsladder, alkanet, burchevil, corn cockle, corn growwell, cow cockle, dogfennel, fanweed, falsefax, flixweed, henbit, lambsquarters, catchweed; apply when weeds are small (early seeding).	Use 10 or more gal. of water per acre for ground application.
Winter type wheat 4-leaf to tillered stage and barley 2 to 7 leaf stage throughout the United States. Spring type wheat Idaho, Oregon, Washington, and Era variety in Minnesota and North Dakota. 5 to 6 leaf stage.	1.5-2 pints BROMINAL + Avenge at 2.5 pints for 1-10 oats per sq. ft. 3 pints for 11-25 per sq. ft. and 4 pints for more than 25 per sq. ft.	Wild oats, fiddleneck, wild buckwheat and other broadleaf weeds; apply to wild oats in the 3 to 5 leaf stage to emerged susceptible broadleaf weeds in the 2-4 leaf stage or when rosettes are less than 1.5 inches across.	Use 5 to 20 gal. with ground or 3 to 10 gal. with air application. If spray vol. exceeds 10 gal. add 0.6 fluid ounces of a surfactant such as Tergitol NPX for each gal. in excess.
Winter type wheat and spring type wheat and barley	1-1.5 pints BROMINAL + 2 pints of Carbyne applied at one or two times when wild oats are in the 2 leaf stage or 4 pints at the 2.5 to 3.5 leaf stage.	Broadleaf weeds 2-4 leaves. Wild oats, canary grass in 2 to 3.5 leaf stage. Apply the BROMINAL tank mix only once if the split Carbyne application is used.	Use 5-10 gal. or water and sufficient pressure (minimum 45 lb.) to break spray into small droplets with ground equipment and 3-5 gallons for air application.

BEST DOCUMENT AVAILABLE

WHEAT - BARLEY - OATS - RYE When to Spray, Amounts & Use (Continued)

Area & Crop Stage	Chemical Rate/Acre	Size of Weeds	Amount of water needed per Acre
Winter type wheat and spring type wheat and barley before or after tillering	1.5-2 pints BROMINAL. Use 2 pints for 3-4 leaf broadleaf weeds + 2.66 pints Hoelon	Grasses, wildoats, foxtails, annual ryegrass, barnyardgrass, 1-3 leaves. Fiddleneck and other broadleaf weeds 2-4 leaves.	Use at least 10 gal. with minimum 30 psi for ground or at least 5 gal. with air application.
Winter and spring type wheat before or after tillering.	1.5 pints BROMINAL + 2.66-3.33 pints Hoelon	Grasses, 3-4 leaves Broadleaves, 3-4 leaves	Use at least 10 gal. with minimum 30 psi for ground or at least 5 gal. with air application.
WASHINGTON, OREGON, IDAHO Fall through early spring application before or after tillering	1.5-2 pints BROMINAL	Gromwell, tarweed, fiddleneck, mustard, other broadleaf weeds; apply before the 4 leaf stage, before rosettes are 1.5 inches across.	Use 10 to 20 gal. with ground or 5-10 gal. with air application. Use higher rates and volumes for larger weeds or where weed growth is slow due to dry or cold weather.
Applications after tillering and before the forming of joints in the stem	1.5-2 pints BROMINAL + 1/4 lb/A of 2,4-D or MCPA*	Gromwell, tarweed, fiddleneck, mustard, other broadleaf weeds; apply before weeds are 6 inches high.	
Use where average annual rainfall exceeds 16 inches winter barley. Apply a single application in the fall after wheat has emerged but before soil freezes or in the spring as soon as soil thaws.	1 pint BROMINAL + 1/2 lb/A Karmex	Henbit, gromwell, fiddleneck, other weeds. Apply before weeds are 2 inches tall or across.	Use a minimum of 25 gal. with ground or 5 - 10 gal. with air application for thorough coverage of weed foliage.
WASHINGTON, OREGON, IDAHO, MONTANA. Non irrigated winter wheat. Apply only in the spring after wheat has started to grow and has a well established secondary root system with a minimum of 3 to 4 tillers but before the boot stage.	1/1.25 pts. BROMINAL + 0.125-0.25 lb. ai/A metribuzin. See label of selected metribuzin product for amount of formulated product.	Chickweed, filaree, henbit, dogfennel. Apply before weeds are 2 inches tall or have 2 inch rosettes.	Use 10-40 gal. with ground or 5-10 gal. of water with air

\*2,4-D amine - WEEDAR 64 herbicide, \*2,4-D esters - WEEDONE LV4 herbicide, \*MCPA amine - WEEDAR MCPA concentrate, \*MCPA Ester WEEDONE MCPA Ester broadleaf herbicide.



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Area & Crop Stage	Chemical Rate/Acre	Size of Weeds	Amount of water needed per Acre
FLAX spring application	1-2 pints BROMINAL	Weeds in 2-4 leaf stage.	Use 10-20 gal./Acre with ground or 5-10 gal./Acre with air application.
WASHINGTON, OREGON, IDAHO MONTANA Winter wheat 2-3 leaf but before boot stage	1-2 pints BROMINAL + 0.17-0.33 ounce Glean (75% active ingredient)	Apply to the most susceptible seedling weeds in the 1-4 leaf growth stage but before they are 6" tall. On less susceptible weeds apply before rosettes are 1.5" in diameter.	Use 10-20 gal. with ground or 4-10 gal. water with air application.

## GENERAL INFORMATION CROP USE

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BROMINAL broadleaf herbicide effectively controls broadleaf weeds germinating from seed, applied when these weeds are in the seedling stage.

BROMINAL applied early as directed kills seedling broadleaf weeds that emerge in small grains and flax, thus reducing competition with these crops during their early growth.

BROMINAL broadleaf herbicide may be applied in the fall, winter or spring of the year depending on the area. Spraying must be done while weeds are in the seedling stage. Application of BROMINAL is not registered for use on small grains undersown with legumes.

The most important factors for effective weed control are : 1. spraying weeds in the seedling stage; 2. Uniform spray coverage.

Do not apply when crops form a canopy over weeds. Do not apply when crops are under moisture stress. Do not apply to wheat, barley, or rye that will be exposed to cold desiccating winds in the absence of snow cover. If high crop mortality from winds has occurred, apply BROMINAL only after plants have sent out new roots and begin new top growth. Do not apply to FLAX when the humidity is high or the temperature at the time of treatment or for the next three days after treatment is or is expected to exceed 85°F.

## APPLICATION OF BROMINAL THROUGH IRRIGATION SYSTEMS

General information: BROMINAL® bromoxynil broadleaf herbicide may be applied through automated (center point or continuous lateral move) or hand move and wheel line irrigation equipment for broadleaf weed control in wheat and barley. Properly applied BROMINAL will control fiddleneck, wild buckwheat, sunflower, fanweed, kochia, Russian thistle and other susceptible broadleaf weeds as listed on the BROMINAL label. For most efficient use of BROMINAL apply when weeds are small, before they have exerted yield reducing competition on the small grain.

Directions for use: Remove scale, pesticide residues and other foreign matter from the chemical tank and entire injector system. Flush with clean water. Add BROMINAL broadleaf herbicide or BROMINAL and water dilution to mix tank. For greater accuracy in calibration and distribution, inject a larger quantity of a more dilute solution per unit time.

For best performance set sprinkler to deliver approximately 0.5 inch of water per acre. Start sprinkler and then uniformly inject BROMINAL into the irrigation line so as to deliver a rate of 1.5 to 2 pints BROMINAL broadleaf herbicide (0.25 to 0.5 lb. bromoxynil) per acre. Weeds should not be larger than 3-4 leaf growth stage. Use the 2 pint rate on weeds with 4 leaves. Use the 2 pint rate if pigweed or lambsquarters are part of the weed complex. Refer to BROMINAL label for detailed information on application timing. BROMINAL broadleaf herbicide should be injected with a positive displacement pump into the main line at least 8 feet ahead of a right angle turn to insure adequate mixing.

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User precautions: Application of more than 0.5 inch/acre of irrigation water may result in decreased product performance on certain soils.

Apply BROMINAL only through systems containing anti-siphon, check valves and interlocking controls between the metering device and the water pump to insure simultaneous shutoff to prevent water source contamination and overflow of the mixing tank.

Do not apply when conditions favor drift, when system connections or fittings leak, or when nozzles do not provide uniform distribution.

Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water.

#### GARLIC

For broadleaf weed control in garlic apply 2 to 4 pints of BROMINAL per broadcast acre when the weeds are 1 to 4 inches tall. Use the lower rate on small weeds and the higher rate on 4 inch weeds. The garlic will generally have 1 to 2 true leaves and treatment should be completed before the garlic is 12 inches tall.

For ground application use 40 to 100 gallons of spray solution per broadcast acre. Good coverage of weeds is essential for good control and the higher volumes are preferred for complete coverage. For aerial application use 5 gallons of spray solution per acre.

Do not apply within 112 days of anticipated harvest.

#### ONIONS

Apply 1 to 1.5 pints (0.25 to 0.38 lbs a.i.) of Brominal per acre on a broadcast basis. Water volume is important--use 50-70 gallons of water/acre and apply when onions have 2-5 true leaves. Some crop damage may occur even under ideal conditions. Concentrate spray kills onions. Good coverage is necessary for good weed control. Do not treat if thrip or sand damage have occurred to the onion foliage. Brominal can injure onions. Do not add surfactants.

In onion-producing areas, it is essential for greatest safety that the soil and onion foliage be dry. Humidity should be low and dew should be off the plants. The suggested temperature for spraying is 80°. Applications should not be made 24 hours before or after cultivation, irrigation, or rain; longer than 24 hours if possible. It is best to spray between 11:00 a.m. and 4:30 p.m. on a bright, sunny day after dew has completely dried from onion foliage and before it has formed.

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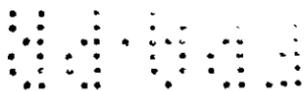
BROMINAL - DIRECTIONS FOR BROADLEAF WEED CONTROL IN NEWLY SEED, NEWLY SPRIGGED, ESTABLISHED LAWN AND ORNAMENTAL TURF AREAS.

Newly Seeded and Sprigged Grasses

BROMINAL may be used on seedling grasses such as Merion, Park, Delta or common Kentucky bluegrass, Pennlawn, Chewing's, Illahoe or Alta fescues, orchardgrass, Penncross, Highland, Seaside or Astoria, bentgrass, Excalibre (Paspalum vagintum) and perennial ryegrasses. BROMINAL may be used on newly sprigged Bermudagrass, centipede grass or St. Augustinegrass. For weeds controlled see "Susceptible Weeds" list.

Product/ Area	Rate/ Acre	APPLICATION TIMING Crop	Weeds	Spray Volume
BROMINAL Throughout the United States	1.5 pt. (0.375 lb ai*)	Seedling grasses or newly sprigged	Seedling broadleaf weeds 3-4 leaf stage. Bermuda, centi- pede or St. Augustine.	20 or more gallons of water per acre for large areas. 2-4 gallons per 1000 sq. ft. for small areas.
BROMINAL	2.0 pt. (0.5 lb ai)		Seedling broadleaf weeds larger than 3-4 leaf stage but less than 6 inches.	

\*ai = active ingredient



260-201

Established Lawn, Ornamental Turf Areas, Sod, Grass Seed Production Areas

BROMINAL may be used on established Bermudagrass, St. Augustinegrass, centipedegrass, Kentucky bluegrass, fescue, orchardgrass, bentgrass, and ryegrass. For weeds controlled see "Susceptible Weeds" list and additional weeds listed below in direction tables. Do not use on bentgrass putting greens or tees. Seedling weeds must be actively growing. Good coverage is essential for effective control of weeds.

Temporary turfgrass discoloration may occur particularly if excessive overlapping of spray solution occurs, or if BROMINAL is applied at temperatures of 85 degrees F or above. This will usually disappear following two mowings leaving no permanent damage.

Product/ Area	Rate/ Acre	APPLICATION TIMING		Spray Volume
		Crop	Weeds	
BROMINAL Throughout the United States	1.5-2 pt/A (0.375-0.5 lb. ai/A)  Use high rate on weeds larger than 3-4 leaf stage but less than 6 inches tall or wide	Established turf lawn, sod and grass seed production.	Seedling 3-4 leaf, to 6 inches tall or wide.	20 or more gallons of water per acre for large areas; 2-4 gallons per 1000 sq. ft. for small areas.
BROMINAL	4 pt./A (1 lb. ai/A)		Seedling spurweed (Suliva sp.) yellow woodsorrel (Oxalis sp.) black medic, bur clover, spiny fruited crowfoot, hop clover.	
BROMINAL	8 pts (2 lb ai)		Seedling prostate spurge (Euphorbia supina)	

\*ai = active ingredient

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264-204

Tank Mixture for Broadleaf Weed Control in Established Lawns and Turf Areas

For weeds controlled see "Susceptible Weeds" list and weeds as listed below with tank mixtures.

Product/ Area	Rate/ Acre	APPLICATION TIMING Crop	Weeds	Spray Volume
BROMINAL + Weedone DPC (2,4D + 2,4-DP)	2-4 pts/A (0.5-1 lb ai) + 3-4 pts.  Use low rates on annual weeds and high rates on perennial and biennial broadleaf weeds.	Established turf except bent, St. August- tine, centipede and carpetgrass.	Actively growing dande- lion, plantain, ground ivy, red clover, white clover, hop clover, bur clover, chickweed, prostrate spurge, knotweed and oxalis.	25 or more gallons of water per acre for large areas. 2-4 gallons of water per 1000 sq. ft. for small areas.
BROMINAL + WEEDONE DPC 2,4-D + 2,4-DP	2 pt (0.5 lb ai) + 1.5 - 2 pts	Established bent, St. August- tine and centipede- grass. Retreat in 2 to 3 weeks. These grasses may be slightly injured. Do not use on bentgrass putting greens or tees.		
BROMINAL + Weedar 64 (2,4-D amine) or Weedone LV4 (2,4-D ester) Use ester for best control of wild garlic and onion.	2 pt (0.5 lb ai) + 2-4 pts. (0.95 - 1.9 lb ai) or 2-4 pts (0.95 - 1.9 lb ai)  Use the 2 pt. rate on annual broadleaf weeds and 3-4 pts on perennial and biennial broadleaf weeds.	Established turf except bent, St. Augustine, and centipede grass.	Seedling and established weeds such as ragweed, dandelion, plantain, wild garlic or onion. Treat wild garlic or onion for three successive seasons (example: spring, fall, spring)	20 or more gallons of water per acre for large areas. 2-4 gallons of water per 1000 sq. ft. for small areas.

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Product/ Area	Rate/ Acre	APPLICATION TIMING Crop	Weeds	Spray Volume
BROMINAL + dicamba (Banvel)	2-4 pts (0.5-1 lb ai) + 0.2-0.5 pts. (0.1 - 0.25 lb ai)  Use high rates for control of yellow wood-sorrel and prostrate spurge. Repeat treatments may be made. Do not exceed 1 lb ai Banvel per acre per growing season.	Established turf except Bentgrass. Rates of Banvel in excess of 0.5 lb ai per treated acre may cause noticeable stunting or discoloration of sensitive grass species such as carpetgrass, buffalograss, and St. Augustine grass.	Seedling actively growing weeds such as knotweed, chickweed, red clover, and white clover.	20 or more gallons of water per acre for large areas. 2-4 gallons of water per 1000 sq. ft. for small areas.
BROMINAL + MCPP	2-4 pts (0.5-1 lb ai) + 1 lb ai  Use high rate on established weeds.	Established turf except bentgrass.	Seedling and established weeds such as plantain, dandelion, red clover, ground ivy, prostrate spurge, white clover, chickweed, knotweed and St. Schwort.	20 or more gallons of water per acre for larger areas. 2-4 gallons of water per 1000 sq. ft. for small areas.
BROMINAL + MCPP + dicamba (Banvel)	2-4 pts (0.5-1 lb ai) + 0.5-1 lb ai + 0.25-0.5 pts (0.125-0.25 lb ai)  Use high rate of BROMINAL when spurweed and/or prostrate spurge is present.	Established turf except bentgrass.	Seedling and established weeds such as white clover, dandelion, and plantain.	20 or more gallons of water per acre for larger areas. 2-4 gallons of water per 1000 sq. ft. for small areas.
BROMINAL + MCPP + 2,4-D	2-4 pt (0.5-1 lb ai) + 0.5 - 1 lb ai + 0.5 - 1 lb ai  Use lower rates on St. Augustine and carpet-grass.	Established turf except bentgrass.	Seedling and established broadleaf weeds such as chickweed, knotweed, red sorrel, dandelion and plantain.	20 or more gallons of water per acre for larger areas. 2-4 gallons of water per 1000 sq. ft. for small areas.

\*ai = active ingredient.

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