

Boomer™

Herbicide

TENKÖZ

For selective control of broadleaf weeds in wheat (including durum), barley and oats not underseeded with a legume, and grasses grown for seed.

FLUROXYPYR	GROUP	4	HERBICIDE
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CLOPYRALID	GROUP	4	HERBICIDE
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MCPA	GROUP	4	HERBICIDE
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Active Ingredient(s):

fluroxypyr 1-methylheptyl ester: ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetic acid, 1-methylheptyl ester	8.2%
clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid	2.2%
MCPA-EHE: 2-methyl-4-chlorophenoxyacetic acid, 2-ethylhexyl ester	39.4%
Other Ingredients	50.2%
Total	100.0%

Contains petroleum distillates

Acid Equivalents:

fluroxypyr: ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetic acid – 5.68% (0.50 lb/gal)	
clopyralid: 3,6-dichloro-2-pyridinecarboxylic acid - 2.2% (0.19 lb/gal)	
MCPA: 2-methyl-4-chlorophenoxyacetic acid - 25.26% (2.22 lb/gal)	

Keep Out of Reach of Children CAUTION

First Aid

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything to an unconscious person.

First Aid (Cont.)

If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

Note to Physician: May pose an aspiration pneumonia hazard. Contains petroleum distillate.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

Agricultural Use Requirements

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. Refer to label booklet under "Agricultural Use Requirements" in the Directions for Use section for information about this standard.

Refer to inside of label booklet for Directions for Use and additional precautionary information.

Notice: Read the entire label. Use only according to label directions. **Before using this product, read Warranty Disclaimer, Inherent Risks of Use, and Limitation of Remedies at end of label booklet. If terms are unacceptable, return at once unopened.**

In case of emergency endangering health or the environment involving this product, call 1-800-992-5994.

Agricultural Chemical: Do not ship or store with food, feeds, drugs or clothing.

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Produced for

Tenköz, Inc.
1725 Windward Concourse, Suite 410
Alpharetta, GA 30005

NET CONTENTS 2.5 GAL

Precautionary Statements

Hazards to Humans and Domestic Animals

CAUTION

• Harmful If Swallowed • Causes Moderate Eye Irritation • Avoid contact with eyes, skin or clothing.

Personal Protective Equipment (PPE)

- Protective eyewear
- Chemical-resistant gloves made of barrier laminate or butyl rubber \geq 14 mils
- Long-sleeved shirt and long pants
- Shoes plus socks

Engineering Controls

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protections Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)].

User Safety Recommendations

Users should:

- Wash hands 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.

Physical or Chemical Hazards

Combustible. Do not use or store near heat or open flame.

Environmental Hazards

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 when cleaning equipment or disposing of equipment washwaters. Do not contaminate water used for irrigation or domestic purposes. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

This product is toxic to fish. 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 when cleaning equipment or disposing of equipment washwaters.

Groundwater Advisory

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

Clopyralid is a chemical which can travel (seep or leach) through soil and under certain conditions contaminate groundwater which may be used for irrigation or drinking purposes. Users are

advised not to apply clopyralid where soils have a rapid to very rapid permeability throughout the profile (such as loamy sand to sand) and the water table of an underlying aquifer is shallow, or to soils containing sinkholes over limestone bedrock, severely fractured surfaces, and substrates which would allow direct introduction into an aquifer. Your local agricultural agencies can provide further information on the type of soil in your area and the location of groundwater.

Surface Water Advisory

This product may impact surface water quality due to runoff of rain water. This is especially true for poorly draining soils and soils with shallow ground water. This product is classified as having a medium potential for reaching surface water via runoff for several weeks after application. 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 loading of clopyralid from runoff water and sediment. Runoff of this product will be reduced by avoiding applications when rainfall is forecasted to occur within 48 hours.

Directions for Use

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

Read all Directions for Use carefully before applying.

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.

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, such as plants, soil, or water, is:

- Coveralls
- Chemical-resistant gloves made of any waterproof material
- Shoes plus socks
- Protective eyewear

Non-Agricultural Use Requirements

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for Agricultural Pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Entry Restrictions for Non-WPS Uses: When applied to rangeland, permanent pastures, and non-cropland areas, keep unprotected persons out of treated areas until sprays have dried.

Storage and Disposal

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

Pesticide Storage: Store above 20°F or warm and agitate before use.

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

Container Reuse: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available.

Triple rinse or pressure 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 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. **Pressure rinse** as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Product Information

Boomer™ herbicide is recommended for selective control of broadleaf weeds in wheat (including durum), barley and oats not underseeded with a legume and grasses grown for seed.

Use Restrictions

- Do not apply Boomer directly to, or otherwise permit it to come into direct contact with, susceptible crops or desirable plants, including but not limited to, alfalfa, canola, beans, cotton, flowers, grapes, lettuce, lentils, mustard, peas, potatoes, radishes, soybeans, sugar beets, sunflowers, tobacco, tomatoes and vegetables.
- Do not permit spray mist containing Boomer to drift onto such plants.
- Do not contaminate irrigation ditches or water used for irrigation or domestic purposes.
- Do not use in greenhouses.

- Chemigation:** Do not apply this product through any type of irrigation system.
- Do not apply more than 0.25 lb ae/A of fluroxypyr containing products per growing season.
- Do not apply more than 0.12 lb ae/A of clopyralid containing products per growing season.
- Do not apply more than 0.75 lb ae/A of MCPA containing products per growing season.
- Do not spray pastures containing desirable forbs, especially legumes, unless injury can be tolerated.
- Many forbs (desirable broadleaf forage plants) are susceptible to Boomer. However, the stand and growth of established perennial grasses is usually improved after spraying, especially when rainfall is adequate and grazing is deferred.
- Do not use on newly seeded areas until grass is well established as indicated by vigorous growth and development of tillers and secondary roots.
- Do not use on bentgrass.
- Apply only once per crop cycle, except for grasses grown for seed (see crop specific use directions).
- Grazing Restriction:** Do not forage or graze meat animals on treated areas within 7 days of slaughter. Do not forage or graze dairy animals on treated areas within 7 days after treatment.
- Do not transfer livestock** from treated grazing areas (or feeding of treated hay) to sensitive broadleaf crop areas without first allowing 7 days of grazing on an untreated pasture (or feeding of treated hay). If livestock are transferred within less than 7 days of grazing untreated pasture or eating untreated hay, urine and manure may contain enough clopyralid to cause injury to sensitive broadleaf plants.
- Field Bioassay Instructions:** In fields previously treated with this product, plant short test rows of the intended rotational crop across the original direction of application in a manner to sample field conditions such as soil texture, soil pH, drainage, and any other variable that could affect the seed bed of the new crop. The field bioassay can be initiated at any time between harvest of the treated crop and the planting of the intended rotational crop. Observe the test crop for herbicidal activity, such as poor stand (effect on seed germination), chlorosis (yellowing), and necrosis (dead leaves or shoots), or stunting (reduced growth). If herbicidal symptoms do not occur, the test crop can be grown. If there is apparent herbicidal activity, do not plant the field to the test rotational crop; plant only a labeled crop or crop listed in the table below for which the rotational interval has clearly been met.
- Plant-back Restriction:** If replanting is required, plant only those crops listed on this label within 120 days following application.
- Use Restrictions in the State of New York: This product may not be sold or used in Suffolk and Nassau counties in the state of New York and can be used in other counties only for postemergence application with a maximum application rate of 15.9 fluid ounces (0.062 pound of clopyralid) per acre per year (with no other product containing clopyralid being applied per

Crop Rotation Intervals

Residues of Boomer in treated plant tissues, including the treated crop or weeds, which have not decayed may affect succeeding susceptible crops.

Crop Rotation Intervals for All States Except Idaho, Nevada, Oregon, Utah and Washington

Note: Numbers in parenthesis and † refer to footnotes following tables.

Rotation Crops (1)	Rotation Interval†
barley, grasses, oats, wheat	30 days
field corn	60 days
canola (rapeseed), flax, sugar beets	5 months
alfalfa, asparagus, cole crops (<i>Brassica</i> species), dry beans, grain sorghum, mint, onions, popcorn, safflower, soybeans, strawberries, sunflowers, sweet corn	10.5 months
lentils, peas, potatoes (including potatoes grown for seed), and broadleaf crops grown for seed (excluding <i>Brassica</i> species)	18 months (2, 3)

1. A field bioassay is recommended prior to planting any broadleaf crops that are not listed. Do not rotate to unlisted crops prior to 10.5 months following application.
2. An 18-month crop rotation is recommended due to the potential for crop injury. **Note:** For these crops, a minimum 10.5 month rotation interval must be observed to avoid illegal residues in the harvested crop.
3. The potential for injury may be reduced by burning, removal, or incorporation of treated crop residues followed by a minimum of 2 supplemental fall irrigations.

Crop Rotation Intervals for Idaho, Nevada, Oregon, Utah and Washington Only

Rotation Crops (1)	Rotation Interval†
Barley, grasses, oats, wheat	30 days
field corn	60 days
canola (rapeseed), flax, sugar beets	5 months
alfalfa, asparagus, <i>Brassica</i> species grown for seed, cole crops, dry beans, grain sorghum, mint, onions, popcorn, soybeans, strawberries, sunflowers, sweet corn	12 months
lentils, peas, potatoes (including potatoes grown for seed), safflower, and broadleaf crops grown for seed (excluding <i>Brassica</i> species)	18 months (2)

1. A field bioassay is recommended prior to planting any broadleaf crops that are not listed. Do not rotate to unlisted crops prior to 12 months following application.
2. An 18-month crop rotation is recommended due to the potential for crop injury. **Note:** For these crops, a

minimum 12 month rotation interval must be observed to avoid illegal residues in the harvested crop.

3. Crop injury and/or yield loss may occur up to 4 years after application. A field bioassay is also recommended prior to planting these sensitive crops. See instructions below.

†**Note:** The above intervals are based on average annual precipitation, regardless of irrigation practices. Observance of listed crop rotation intervals should result in adequate safety to rotational crops. However, Boomer is dissipated in the soil by microbial activity and the rate of microbial activity is dependent on several interrelating factors including soil moisture, temperature and organic matter. Therefore, accurate prediction of rotational crop safety is not possible. In areas of low organic matter (<2.0%) and less than 15 inches average annual precipitation, potential for crop injury may be reduced by burning or removal of plant residues, supplemental fall irrigation and deep moldboard plowing prior to planting the sensitive crop.

Avoiding Injury to Non-Target Plants

This product can affect susceptible broadleaf plants directly through foliage and indirectly by root uptake from treated soil. Therefore, do not apply Boomer directly to, or allow spray drift to come in contact with, vegetables, flowers, grapes, tomatoes, potatoes, beans, lentils, peas, alfalfa, sunflowers, soybeans, safflower, or other desirable broadleaf crops and ornamental plants or soil where these sensitive crops will be planted the same season.

Residues in Plants or Manure

- Do not use plant residues, including hay or straw from treated areas, or manure or bedding straw from animals that have grazed or consumed forage from treated areas, for composting or mulching, where susceptible plants may be grown the following season.
- Do not spread manure from animals that have grazed or consumed forage or hay from treated areas on land used for growing susceptible broadleaf crops.
- To promote herbicidal decomposition, plant residues should be evenly incorporated or burned. Breakdown of clopyralid in crop residues or manure is more rapid under warm, moist soil conditions and may be enhanced by supplemental irrigation.

Avoid Movement of Treated Soil

Avoid conditions under which soil from treated areas may be moved or blown to areas containing susceptible plants. Wind-blown dust containing clopyralid may produce visible symptoms, such as epinasty (downward curving or twisting of leaf petioles or stems) when deposited on susceptible plants; however, serious injury is unlikely. To minimize potential movement of clopyralid on wind-blown dust, avoid treatment of powdery dry or light sandy soils until soil is settled by rainfall or irrigation or irrigation shortly after application.

Herbicide Resistance Management Guidelines

Fluroxypyr, Clopyralid and MCPA, the active ingredients in this product, are Group 4 herbicides, based on the mode of action classification system of the Weed Science Society of America. Weed populations may develop biotypes that are resistant to different herbicides with the same mode of action. If herbicides with the same mode of action are used repeatedly in the same field, resistant biotypes may eventually develop, produce viable

seed, dominate the weed population and may not be controlled by these products. Other resistance mechanisms, such as biotypes with enhanced herbicide metabolism, may also develop, exist in a field and may cause reduced weed control. Appropriate resistance management strategies should be followed.

This product should be used as part of an Integrated Pest Management (IPM) program that may include biological, cultural, and chemical practices aimed at preventing economic pest damage. Application of this product should be based on appropriate IPM and resistance management strategies and practices that delay or reduce the development of herbicide-resistant weed biotypes. Such practices include, but are not limited to, field scouting, use of weed free crop seed, cultural practices including burndown herbicides, crop rotation and cultivation, proper water management, correct weed pest identification, following rotational practices outlined on pesticide labels, and treating with the correct product rates when target weed populations are at the correct stage and economic thresholds for control.

To delay herbicide resistance:

- Alternate the use of products containing Fluroxypyr, Clopyralid and MCPA with other products with different herbicide mechanisms of action.
- Boomer can be tank mixed or used sequentially with other approved products to broaden the spectrum of weed control, provide multiple modes of action and control weeds that Boomer does not control.
- Herbicides should be used based on an IPM program.
- Monitor treated areas and control escaped weeds.
- Contact local extension or crop advisor for IPM and resistance management information.

Management of Kochia Biotypes: Research has suggested that many biotypes of kochia can occur within a single field. While kochia biotypes can vary in their susceptibility to Boomer, all will be suppressed or controlled by the 1.5 pints per acre labeled rate. Application of Boomer at rates below the 1.5 pints per acre rate can result in a shift to more tolerant biotypes within a field.

Kochia Resistance Management Practices: To preserve Boomer, it is recommended to use only a single application per season for the control of kochia. Populations of dicamba tolerant kochia have been identified in certain small grain and corn production regions. In these areas, apply Boomer at 2.0 pints per acre for optimum control of dicamba tolerant kochia. In addition, Boomer should be rotated with products **that do not contain dicamba** to minimize the selection pressure. Use of these practices will preserve the utility of Boomer for control of dicamba tolerant kochia biotypes.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-and-weather-related factors determine the potential for spray drift. The applicator and grower are responsible for considering all of these factors when making decisions.

Apply only as a medium or coarser spray (ASAE Standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Apply only when the wind speed is 2 to 10 mph at the application site.

Ground Application: With ground equipment, spray drift can be lessened by keeping the spray boom as low as possible, by applying 10 gallons or more of spray per acre, by keeping the operating spray pressures at the manufacturer's minimum recommended pressures for the specified nozzle type used (low pressure nozzles are available from spray equipment manufacturers), and by spraying when the wind velocity is low (follow state regulations). Avoid application under completely calm conditions which may be conducive to air inversion. In hand-gun applications, select the minimum pressure required to obtain adequate plant coverage without forming a mist. **Do not** apply with a mist blower. **Do not** apply with a nozzle height greater than 4 feet above the crop canopy,

Aerial Application: To minimize spray drift, apply this product in a total spray volume of 3 or more gallons per acre with a spray boom pressure no greater than 30 psi. The following drift management requirements must be followed to avoid off-target drift movement from aerial applications.

- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.
- Nozzles must always point backward parallel with the airstream and never be pointed downwards more than 45 degrees.
- Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy.

When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind. Do not apply under conditions of a low level air temperature inversion.

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

The applicator should be familiar with and take into account the information covered in the Aerial Drift Reduction Advisory.

Sprayer Clean-Out

To avoid injury to desirable plants, equipment used to apply Boomer should be thoroughly cleaned before re-using to apply any other chemicals.

1. Rinse and flush application equipment thoroughly at least 3 times with water after use. Dispose of rinse water by application to treatment area or in non-cropland area away from water supplies.
2. During the second rinse, add 1 qt of household ammonia for every 25 gallons of water. Circulate the solution through the entire system so that all internal surfaces are contacted (15 to 20 minutes). Let the solution stand for several hours, preferably overnight.
3. Flush the solution out of the spray tank through the boom.
4. Rinse the system twice with clean water, recirculating and draining each time.
5. Remove nozzles and screens and clean separately.

Mixing Instructions

1. Add 3/4 of the required spray volume to the spray tank and start agitation.
2. Add the required amount of Boomer.

3. Add any surfactants, adjuvants or drift control agents according to manufacturer's label. Tenkoz, Inc. recommends the use of an appropriate Chemical Producers and Distributors Association (CPDA) certified adjuvant.
4. Agitate during final filling of the spray tank and maintain sufficient agitation during application to ensure uniformity of the spray mixture.

Note: Allow time for thorough mixing of each spray ingredient before adding the next. If allowed to stand after mixing, agitate spray mixture before use.

Tank Mixing

This product may be applied in tank mix combination with labeled rates of other products provided (1) the tank mix product is labeled for the timing and method of application for the use site to be treated; and (2) tank mixing is not prohibited by the label of the tank mix product. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Tank Mixing Directions:

- It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture..

Tank Mixing Restrictions

- Do not exceed labeled application rates.
- Do not tank mix with another pesticide product that contains the same active ingredient as this product unless the label of either tank mix partner specifies the maximum dosages that may be used.
- For products packaged in water soluble packaging, do not tank mix with products containing boron or mix in equipment previously used to apply a product mixture containing boron unless the tank and spray equipment has been adequately cleaned. (See instructions for Sprayer Clean-Out.)
- Always perform a (jar) test to ensure the compatibility of products to be used in tank mixture.

Tank Mix Compatibility Testing: A jar test is recommended prior to tank mixing to ensure compatibility of Boomer and other pesticides. Use a clear glass quart jar with lid and mix the tank mix ingredients in the required order and their relative proportions. Invert the jar containing the mixture several times and observe the mixture for approximately 1/2 hour. If the mixture balls-up, forms flakes, sludges, jels, oily films or layers, or other precipitates, it is not compatible and the tank mix combination should not be used.

Tank Mixing Instructions

Fill spray tank with water to 1/2 to 3/4 of the required spray volume. Start agitation. Add different formulation types in the order indicated, allowing time for complete mixing and dispersion after addition of each.

1. Add dry flowables; wettable powders; aqueous suspensions, flowables or liquids.
2. Maintain agitation and fill spray tank to 3/4 of total spray volume and then add WideMatch and other emulsifiable concentrates and any solutions.

Finish filling the spray tank. Maintain continuous agitation during mixing, final filling and throughout application. If spraying and agitation must be stopped before the spray tank is empty, the materials may settle to the bottom. Settled materials must be resuspended before spraying is resumed. A sparger agitator is particularly useful for this purpose. Settled material may be more difficult to resuspend than when originally mixed.

Application Directions

Application Timing

Apply to actively growing weeds. Extreme growing conditions such as drought or near freezing temperatures prior to, at or following application may reduce weed control and increase the risk of crop injury at all stages of growth. Only weeds that have emerged at the time of application will be affected. If foliage is wet at the time of application, control may be decreased. Applications of Boomer are rainfast within 6 hours after application.

Effect of Temperature on Herbicidal Activity

Herbicidal activity of Boomer is influenced by weather conditions. Optimum activity requires active plant growth. The temperature range for optimum herbicidal activity is 55°F to 75°F. Reduced activity will occur when temperatures are below 45°F or above 85°F. **Frost before application (3 days) or shortly after (3 days) may reduce weed control and crop tolerance.**

Application Rates

Application rates at the lower end of the labeled rate range will be satisfactory for young, succulent growth of susceptible weed species. For less sensitive species, perennials, and under conditions where control is more difficult (plant stress conditions such as drought or extreme temperatures, dense weed stands and/or larger weeds), the higher rates within the rate range will be needed. Weeds in fallow land or other areas where competition from crops is not present will generally require higher rates for control or suppression. Apply Boomer at the full labeled rate found within the crop specific use directions. Make only one application per crop season, except for grass grown for seed (see specific use directions).

Use of Surfactants

The addition of wetting and/or penetration agents is not usually necessary when using Boomer. However, the addition of an adjuvant may optimize herbicidal activity when applications are made a) at lower carrier volumes, b) under conditions of cooler temperatures, low relative humidity or drought or c) to small, heavily pubescent kochia. If a surfactant will be added to the spray solution, use a non-ionic surfactant suitable for use in growing crops of at least 80% active ingredient and **do not exceed** 4 pints per 100 gallons of spray solution (0.5% v/v). Use of a surfactant in the spray mixture may reduce crop safety, particularly under conditions of plant stress.

Spray Coverage

Use sufficient spray volume to provide thorough coverage and a uniform spray pattern. Do not broadcast apply in less than 2 gallons of total spray volume per acre. For best results and to minimize spray drift, apply in a spray volume of 10 gallons or more per acre. As vegetative canopy and weed density increase, spray volume should be increased to obtain equivalent weed control. Use only nozzle types and spray equipment designed for herbicide application. To reduce spray drift, follow precautions under Avoiding Injury to Non-target Plants.

Use with Sprayable Liquid Fertilizer Solutions

Boomer is compatible with most non-pressurized liquid fertilizer solutions; however, a compatibility test (jar test) should be made prior to mixing. Jar tests are particularly important when a new batch of fertilizer or pesticide is used, when the water source changes, or when tank mixture ingredients or concentrations are changed. A compatibility test is performed by mixing the spray components (in the desired order and proportions) into a clear glass jar before mixing in the spray tank. Use of a compatibility aid such as Unite or Compex may help obtain and maintain a uniform spray solution during mixing and application. Agitation in the spray tank must be vigorous to compare with jar test agitation. For best results, liquid fertilizer should not exceed 50% of the total spray volume. Premix Boomer with water and add to the liquid fertilizer/water mixture while agitating contents of the spray tank. Apply the spray the same day it is prepared while maintaining continuous agitation. **Note:** Foliar-applied liquid fertilizers can cause yellowing or leaf burn of crop foliage.

Spot Treatments

To prevent misapplication, it is recommended that spot treatments be applied only with a calibrated boom or with hand sprayers according to directions provided below.

Broadleaf Weeds Controlled

alfalfa, volunteer (from seed only)*
beans, volunteer
bedstraw (cleavers) (2)
beggarticks
bindweed, field (seedling)
bindweed, hedge (seedling)
buckwheat, wild (3)
burdock, common
chickweed
clover, hop
clover, sweet
clover, white
cocklebur (1)
coffeeweed
dock, curly (from seed only)
dragonhead mint
flax, volunteer
galinsoga
groundsel, common

hemp dogbane
hempnettle
jimsonweed (1)
kochia (4)
lambsquarters, common
lentils, volunteer
lettuce, prickly
locoweed, lambert
mallow, Venice
marshelder (1)
morningglory
mustard (except blue)
peas, volunteer
pepperweed, field
pigweed, prostrate
pigweed, redroot
pigweed, smooth
pigweed, tumble

plantain, buckhorn (seedling)
poison hemlock
puncturevine
purslane, common
ragweed, common (1)
ragweed, giant (1)
rocket, yellow
shepherdspurse
sicklepod
sowthistle, annual
soybean, volunteer
sunflower (1)
thistle, Russian
velvetleaf
white locoweed
wild radish
wild sage
witchweed

Broadleaf Weeds Suppressed

buffalobur* (5)
buttercup, corn
buttercup, creeping
buttercup, hairy
canola, volunteer
chamomile, false*
chamomile, mayweed (dogfennel)*
clover, black medic*
clover, red*

hawkweed, orange*
hawkweed, yellow*
horseweed (maretail)
horseweed, field*
Jerusalem artichoke* (1)
knapweed, diffuse*
knapweed, Russian
knapweed, spotted*
knotweed

pineappleweed*
potato, volunteer
salsify, meadow (goatsbeard)*
smartweed
sorrel, red*
sowthistle, perennial
starthistle, yellow*
teasel, common*
Texas blueweed

Hand-Held Sprayers: Hand-held sprayers may be used for spot applications. Care should be taken to apply the spray uniformly and at a rate equivalent to a broadcast application. Application rates in the table are based on an area of 1000 sq ft. Mix the amount of Boomer (fl oz or ml) corresponding to the broadcast rate in 1 or more gallons of spray. To calculate the amount of Boomer required for larger areas, multiply the table value (fl oz or ml) by the area to be treated in "thousands" of square feet, e.g., if the area to be treated is 3500 sq ft, multiply the table value by 3.5 (calc. $3500 \div 1000 = 3.5$). An area of 1000 sq ft is approximately 10.5 x 10.5 yards (strides) in size.

Amount of Boomer per Gallon of Spray to Equal Specified Broadcast Rate	
1.5 pt/acre	2.0 pt/acre
0.57 fl oz (17 ml)	0.75 fl oz (22 ml)

† 1 fl oz = 29.6 (30) ml

Broadleaf Weeds Suppressed (Cont.)

cornflower (bachelor button)*
 cress, hoary
 daisy, oxeye*
 dandelion
 devilsclaw
 field horseweed
 hawksbeard, narrowleaf*

ladythumb (5)
 mallow, common
 mustard, blue
 nightshade, black* (5)
 nightshade, cutleaf* (5)
 nightshade, hairy* (5)

thistle, bull*
 thistle, Canada* (6)
 thistle, musk*
 vetch*
 wild carrot
 wormwood, biennial*

* To obtain control of these weeds, tank mix Boomer with Stinger™ herbicide. See the Crop Specific section for information about proper tank mix use rates of Stinger herbicide.

- (1) For best control or suppression, apply up to 5 leaf state of growth
- (2) For best control, apply in the 1-4 leaf "whorl" stage of growth
- (3) For best control, apply in the 1-3 leaf stage of growth, before vining
- (4) Includes herbicide tolerant or resistant biotypes. Best control is achieved when weeds are at least 1 inch tall
- (5) For best control or suppression, apply at the 2-4 leaf stage of growth
- (6) For best control or suppression, apply from rosette to bud (pre-flower) stage of growth

Uses

Wheat (including Durum), Barley and Oats

Application Timing

Apply Boomer in the spring to actively growing wheat, barley or oats once 3 leaves have unfolded on the main stem up to the boot stage. To control or suppress listed weeds, make application after maximum emergence of the target weeds but before they exceed 4 inches in height or diameter (for rosettes). Only weeds emerged at time of application will be controlled.

Restrictions

- Do not apply between the jointing and boot stages of growth unless the risk of injury is acceptable.
- Do not apply after the boot stage.

Application Rate

(Numbers in parentheses (-) refer to footnotes following table.)

Weed Size or Species (1)	Application Rate (pt/acre)
susceptible broadleaf weed seedlings less than 4 inches tall (2)	1.5
susceptible broadleaf weed seedlings less than 8 inches tall or vining; dicamba tolerant kochia biotypes	2.0
volunteer potatoes (suppression only)	2.0

1. See Weeds Controlled or Suppressed section for a complete listing of weeds controlled or suppressed.
2. A rate of 1.5 pints per acre will provide satisfactory control of kochia seedlings less than 4 inches tall (including ALS resistant biotypes). However, when conditions for control are less favorable, such as under drought or cool temperatures, a rate of 2.0 pints per acre will provide more consistent control of kochia seedlings 1 to 4 inches tall. Control of small kochia will be more consistent if kochia is at least 1 inch tall. A rate of 2.0 pints per acre should be used for optimal control of dicamba tolerant kochia populations (see Herbicide Resistance Management section above).

Note: Application of Boomer following a spring postemergence treatment with 2,4-D or MCPA may increase the risk of crop injury.

Tank Mixtures

Boomer may be applied in tank mix combination with other products registered for postemergence application in wheat, barley, and oats and approved for tank mixing. See Tank Mixing Directions under Mixing Instructions. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Tank Mixing with Stinger Herbicide for added weed control

Boomer can be tank mixed with Stinger herbicide in order to increase control of weeds (see Weeds Controlled/Weeds Suppressed section above). Mix the specified rates of Stinger herbicide with the specified rates of Boomer in order to achieve the level of control desired.

Rate of Boomer	1.5 pt/acre	2.0 pt/acre
Rate of Stinger to mix *	2.5 – 3.75 fluid ounces/acre	2.0 – 3.25 fluid ounces/acre

* When mixed with the specified rates of Boomer, the low rate of Stinger herbicide specified above will provide season long control of biennial and perennial weeds (initial top growth and inhibit regrowth during growing season). When mixed with the specified rates of Boomer, the high rate of Stinger herbicide specified above may cause a reduction in shoot growth in the season following application; however, plant response may be inconsistent due to inherent variability in shoot regrowth from perennial root systems.

Specific Use Precautions:

- Tank mix Boomer with 2,4-D or dicamba may cause crop injury.

Specific Use Restrictions:

- Do not apply if the cereal crop is underseeded with a legume
- Do not apply more than 2.0 pints of Boomer per acre per year
- Do not exceed two applications per season.
- Do not apply more than 0.25 lb ae/acre of fluroxypyr containing products per growing season

- Do not apply more than 0.12 lb ae/acre of clopyralid containing products per growing season
- Do not apply more than 0.75 lb ae/acre of MCPA containing products per growing season.
- **Preharvest Interval:** Do not apply closer than 14 before cutting of hay or 40 days before harvesting of grain and straw.
- Do not allow dairy animals or meat animals being finished for slaughter to forage or graze treated areas within 7 days after application.

Grasses Grown for Seed

Application Timing

Apply only to established grasses before the boot stage of growth. Applications in the boot stage and beyond will result in increased potential for injury. Do not apply to bentgrass unless injury can be tolerated.

Application Rate

(Numbers in parentheses (-) refer to footnotes following table.)

Weed Size or Species (1)	Application Rate* (pt/acre)
susceptible broadleaf weed seedlings less than 4 inches tall (2)	1.5
susceptible broadleaf weed seedlings less than 8 inches tall or vining; dicamba tolerant kochia biotypes	2.0
volunteer potatoes	2.0

1. See Weeds Controlled or Suppressed section for a complete listing of weeds controlled or suppressed.
2. A rate of 1.5 pints per acre will provide satisfactory control of kochia seedlings less than 4 inches tall (including ALS resistant biotypes). However, when conditions for control are less favorable, such as under drought or cool temperatures, a rate of 2.0 pints per acre will provide more consistent control of kochia seedlings 1 to 4 inches tall. Control of small kochia will be more consistent if kochia is at least 1 inch tall. A rate of 2.0 pints per acre should be used for optimal control of dicamba tolerant kochia populations (see Herbicide Resistance Management section above).

* The potential for crop injury exists due to the MCPA component of this product and must be balanced against the benefits of improved weed control. Potential for crop injury increases with higher rates.

Tank Mixtures

Boomer may be applied in tank mix combination with labeled rates of other products registered for postemergence application in grasses grown for seed. See Tank Mixing Directions under Mixing Instructions. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

Tank Mixing with Stinger Herbicide for added weed control

Boomer can be tank mixed with Stinger herbicide in order to increase control of weeds (see Weeds Controlled/Weeds Suppressed section above). Mix the specified rates of Stinger herbicide with the specified rates of Boomer in order to achieve the level of control desired.

Rate of Boomer	1.5 pt/acre	2.0 pt/acre
Rate of Stinger to mix *	2.5 – 9.0 fluid ounces/acre	2.0 – 8.5 fluid ounces/acre

* When mixed with the specified rates of Boomer, the low rate of Stinger herbicide specified above will provide season long control of biennial and perennial weeds (initial top growth and inhibit regrowth during growing season). When mixed with the specified rates of Boomer, the high rate of Stinger herbicide specified above may cause a reduction in shoot growth in the season following application; however, plant response may be inconsistent due to inherent variability in shoot regrowth from perennial root systems.

Specific Use Restrictions:

- Do not apply more than 3.0 pints of Boomer per acre per year.
- Do not make more than 2 applications per year with a minimum retreatment interval of 21 days.
- Do not apply more than 1.5 lb ae/acre of MCPA containing products per year.
- **Grazing restrictions:** Do not allow livestock to graze treated areas within 7 days of application.
- **Harvest restrictions:** Do not harvest grass for hay or silage from treated areas within 7 days of application.
- **Slaughter restrictions:** Meat animals must be withdrawn from treated forage at least 2 days before slaughter.

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