



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY  
AND POLLUTION PREVENTION

August 15, 2019

Michael Kellogg  
Regulatory Consultant  
Alligare, LLC  
c/o Pyxis Regulatory Consulting Inc.  
4110 136th St. Ct. NW  
Gig Harbor, WA 98332

Subject: Notification per PRN 98-10 – Add referral statement language for first aid  
Product Name: Bromacil 80  
EPA Registration Number: 81927-4  
Application Date: Dec 21, 2018  
Decision Number: 552235

Dear Mr. Kellogg:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Registration Division (RD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

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

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

Sincerely,

A handwritten signature in blue ink that reads "Emily Schmid".

Emily Schmid, Acting Product Manager 25  
Herbicide Branch  
Registration Division (7505P)  
Office of Pesticide Programs

**NOTIFICATION**

81927-4

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

8/15/2019

[Note to reviewer: [Text] in brackets indicates optional text].

**BROMACIL 80**

*[Alternate brand name: Hyvar® X IVM Herbicide]*

<b>ACTIVE INGREDIENT:</b>	<b>By Weight</b>
Bromacil: (5-bromo-3-sec-butyl-6-methyluracil).....	80.0%
<b>OTHER INGREDIENTS:</b> .....	20.0%
<b>TOTAL:</b> .....	100.0%

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

<b>FIRST AID</b>	
<b>If swallowed:</b>	<ul style="list-style-type: none"> <li>• Call a poison control center or doctor immediately for treatment advice.</li> <li>• Have person sip a glass of water if able to swallow.</li> <li>• Do not induce vomiting unless told to do so by the poison control center or doctor.</li> <li>• Do not give anything by mouth to an unconscious person.</li> </ul>
<b>If on skin or clothing:</b>	<ul style="list-style-type: none"> <li>• Take off contaminated clothing.</li> <li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If in eyes:</b>	<ul style="list-style-type: none"> <li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li> <li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li> <li>• Call a poison control center or doctor for treatment advice.</li> </ul>
<b>If inhaled:</b>	<ul style="list-style-type: none"> <li>• Move person to fresh air.</li> <li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible.</li> <li>• Call a poison control center or doctor for further treatment advice.</li> </ul>
<b>HOT LINE NUMBER</b>	
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.	

[See [inside] [label] [booklet] [for] [First Aid], [additional] [Precautionary Statements], [and] [Directions for Use] [including Storage and Disposal] [instructions]]. See inside label booklet for additional PRECAUTIONARY STATEMENTS

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

Harmful if absorbed through skin or swallowed. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

**EPA Reg. No. 81927-4**

**EPA Est. No.**

Manufactured for:  
Alligare, LLC  
13 North 8<sup>th</sup> Street  
Opelika, AL 36801

Ph: 888-255-4427

**Net Weight:**

**PERSONAL PROTECTIVE EQUIPMENT (PPE)**

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

**Applicators and other handlers must wear:**

- Long-sleeved shirt and long pants
- Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinylchloride
- Shoes plus socks

**Mixers and loaders must wear:**

A non-powered air purifying respirator equipped with a N, R, P, or HE series filter (NIOSH approved number prefix 84A) for mixing and loading.

Discard clothing or other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

**ENGINEERING CONTROL STATEMENT**

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

**User Safety Recommendations**

Users should:

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

**ENVIRONMENTAL HAZARDS**

Do not apply directly to water, or 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.

Bromacil is known to leach through soil and has been found in ground water as a result of normal field use. Users are advised not to apply in areas where soils are permeable, particularly where ground water is used for drinking water. Consult with the pesticide state lead agency for information regarding soil permeability and aquifer vulnerability in your area.

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**DIRECTIONS FOR USE**

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It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

### **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 such as polyethylene or polyvinylchloride
- Shoes plus socks

### **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.

Do not enter or allow others to enter the treated area until sprays have dried.

### **STORAGE AND DISPOSAL**

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

**PESTICIDE STORAGE:** Store product in original container only.

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

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

### **GENERAL INFORMATION**

Bromacil 80 is to be mixed in water and applied as a spray for non-selective weed and brush control in non-cropland areas and for selective weed control in certain crops. Bromacil 80 controls many annual weeds at lower rates and perennial weeds and brush at the highest rates allowed by this label. Bromacil 80 also may be used for control of perennial grasses. It is non-corrosive to equipment, non-flammable and non-volatile.

*As this product must be absorbed through the root system of weeds, best results are obtained if treatment is made to moist soil and moisture is supplied by rainfall or sprinkler irrigation within two weeks of application. Weed control symptoms are slow to appear and may not become*

apparent until the chemical has been carried into the root zone of the weeds by moisture. The degree and duration of control will vary with the amount of herbicide applied, rainfall, soil texture, and other soil and water management practices.

## **USE PRECAUTIONS AND RESTRICTIONS**

To avoid injury to or loss of desirable trees or other plants, observe the following use guidelines:

- Do not apply this product through any type of irrigation system.
- Except as recommended, do not apply or drain or flush equipment on or near desirable trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use in any recreational areas or in or around homes, on lawns, walks, tennis courts, driveways, or other similar areas.
- Do not allow dry powder or spray to drift to desirable plants.
- Keep from contact with fertilizers, insecticides, fungicides, and seeds.
- Do not graze cattle in treated areas.
- Thoroughly clean all traces of Bromacil 80 from application equipment immediately after use. Flush tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens; clean these parts separately.
- Treated areas may be planted to citrus or pineapple one year after last application. Do not replant to other crops within two years after last application as injury may result.

### **When Preparing for Use:**

- Calibrate sprayers only with clean water away from well sites.
- Regularly inspect spray equipment.
- Mix only enough Bromacil 80 for the specific application.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Ensure accurate measurement of pesticides.
- Avoid over-filling of spray tank.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.

### **Tank Mixture Specific Guidelines:**

- Bromacil 80 may be tank mixed with other suitable herbicides registered for agricultural and non-agricultural use. Refer to the label(s) of the other products being added to the tank mix for any additional use information or restrictions. *Follow the most restrictive label guidelines.*
- When tank mixing with Bromacil 80, completely mix the product in the spray tank carrier (water, liquid fertilizer) before adding any other herbicide or spray adjuvant. A small compatibility test (see below) should be performed prior to adding the products into the spray tank using a combination of products not previously used. Refer to the ADDITIONAL INSTRUCTIONS FOR AG AND NON-AG USES section of this label for further information.
- The spray tank contents must be thoroughly re-agitated if they are allowed to settle for any period of time.

## APPLICATION INFORMATION

Follow the application guidelines below:

- Apply using a properly calibrated fixed-boom power sprayer.
- Bromacil 80 use rates listed on this label are expressed for broadcast treatments. For band treatments, use proportionately less.
- Use sufficient spray volume (minimum of 10 gallons per acre) to provide uniform coverage of the treated areas and to allow proper dispersion and suspension of the product in the spray tank.
- Continuous agitation in the spray tank is required to keep the product in suspension. Agitate spray tank contents by mechanical or hydraulic means. If a by-pass or return line is used, it should terminate at the bottom of the tank to minimize foaming. *Do not use air agitation.*
- Spray booms must be shut off while starting, turning, slowing or stopping. Over application of the herbicide may result in injury to the crop or successive crops.
- Nozzle screens should be 50 mesh or larger.

## SPRAY PREPARATION

**Mixing in Water** – Fill tank half full with water. Start agitation system and while continuing to add water, add Bromacil 80 and each additional component of any tank-mix separately. Be sure to agitate the entire time.

**Mixing with Other Herbicides** - Determine the tank mixture partner(s) compatibility with Bromacil 80 by following the directions below. If the testing procedure shows the mixture to be compatible, Bromacil 80 may be used in the tank mixture.

1. Put 1 pint of water into a quart jar with a tightly sealing lid.
2. In a separate container, combine 2 teaspoons of Bromacil 80 with 2 tablespoonfuls of water; mix thoroughly and add to the water.
3. Close the jar and shake well.
4. If additional herbicides are to be used in the mixture, follow steps two and three above for each additional herbicide.
5. Once all components of the tank mix are combined in the test jar, watch the mixture for several seconds and then check again in 30 minutes. If mixture does not separate, foam, gel or become lumpy, it may be used.

**Mixing in Liquid Fertilizer (citrus only)** – A fertilizer solution may be used in the spray mixture *only when applying to citrus*. Use the procedure above to test for compatibility before full-scale mixing, but in Step 1, in lieu of water, use the liquid fertilizer.

If the above procedure indicates the desired mixture will be compatible, prepare the tank mixture as follows:

1. Add the fertilizer solution to the spray tank first.
2. In a separate container, mix the required amount of Bromacil 80 with water to form a slurry that can be poured.
3. With the agitator running, slowly add the slurry to the tank and mix thoroughly.



## **SPRAY TANK CLEAN OUT**

Thoroughly clean all traces of Bromacil 80 from application equipment immediately after use. Flush the tank, pump, hoses, and boom with several changes of water after removing nozzle tips and screens (clean these parts separately). Dispose of the equipment wash water by applying it to a use-site listed on this label.

## **VERIFICATION OF SAFE ROTATIONAL USE IN ARID CLIMATES**

In arid climates (areas that experience 10 inches of rainfall or less in a year) or areas that have experienced drought conditions for one or more years, a field bioassay should be conducted prior to planting any desired crop(s). The bioassay may consist of a test strip of the crop and should cross the entire field, including high and low lying portions. If a test strip of the crop(s) intended for production is not successfully grown to maturity, it may be necessary for the two-year crop rotation interval to be extended.

## **WEED RESISTANCE TO HERBICIDES**

Weeds may become resistant to any herbicide if an herbicide is used in the same field repeatedly over several years. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product with a different mode of action.

The following suggestions will assist in managing herbicide resistance:

- It may be necessary to change cropping practices within and between crop seasons. For example, using a combination of tillage, retreatment, tank-mixtures and/or sequential herbicide applications that have different modes of action.
- Preventing weeds from going to seed (by mowing, tilling, etc.) will prevent the spread of resistant plants.
- Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide recommendations available in your area.

## **INTEGRATED PEST MANAGEMENT**

This product may be used as part of an Integrated Pest Management (IPM) program such as biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop systems in your area.

## **SPRAY DRIFT MANAGEMENT**

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

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops. These requirements do not apply to forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outer most nozzles on the boom must not exceed  $\frac{3}{4}$  the length of the wingspan or rotor.

2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they should be observed.

### **IMPORTANCE OF DROPLET SIZE**

The most effective way to reduce drift potential is to apply large droplets (>150-200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. **APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS.** See **Wind, Temperature and Humidity**, and **Surface Temperature Inversions** sections of this label.

#### **Controlling Droplet Size – General Techniques**

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. **WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER-CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.**
- **Nozzle Type** – Use a nozzle type that is designated for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low-drift nozzles.

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

- **Number of Nozzles** – Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** – Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

### **BOOM LENGTH AND HEIGHT**

- **Boom Length (aircraft)** – The boom length should not exceed  $\frac{3}{4}$  of the wing length, using shorter booms decreases drift potential. For helicopters, use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** – Application more than 10 ft. above the canopy increases the potential for spray drift.
- **Boom Height (ground)** – Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

### **WIND**

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. **AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.**

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



## TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## SENSITIVE AREAS

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

## SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

## WEEDS CONTROLLED BY BROMACIL 80

### Annual Weeds Controlled

Barnyardgrass	<i>Echinochloa crus-galli</i>
Crabgrass	<i>Digitaria</i> spp.
Crowfootgrass	<i>Dactyloctenium aegyptium</i>
Henbit	<i>Lamium amplexicaule</i>
Lambsquarter, common	<i>Chenipodium album</i>
Mullien, turkey	<i>Eremocarpus setigerus</i>
Mustard	<i>Brassica</i> spp.
Natalgrass (red top)	<i>Rhynchelytrum repens</i>
Panicum, Texas	<i>Panicum texanum</i>
Puncturevine, common	<i>Tribulus terrestris</i>
Purslane, common	<i>Portulaca oleracea</i>
Purslane, horse	<i>Trianthema portulacastrum</i>
Pusley, Florida	<i>Richardia scraba</i>
Sandbur (sandspur)	<i>Cenchrus</i> spp.
Sedge, annual	<i>Cyperus compressus</i>
Sprangletop	<i>Leptochloa</i> spp.

### Perennial Weeds Controlled

Bahiagrass	<i>Paspalum notatum</i>
Bermudagrass	<i>Cynodon dactylon</i>
Johnsongrass	<i>Sorghum halepense</i>
Nutsedge	<i>Cyperus</i> spp.

Pangolagrass  
Paragrass  
Torpedograss

*Digitaria decumbens*  
*Panicum purpurascens*  
*Panicum repens*

**Note:** Partial control of perennials usually occurs with a single treatment; repeat applications are required to control perennials. Control of perennials may be improved by cultivation prior to treatment; otherwise, avoid working the soil as long as weed control continues otherwise effectiveness of the treatment may be reduced. Multiple applications may improve control of hard-to-kill weeds.

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## AGRICULTURAL USES

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NOTE: Bromacil 80 use rates listed on this label are for broadcast treatments. For band treatments, use proportionately less.

### CITRUS

Bromacil 80 may be applied as a broadcast or band treatment beneath and/or between trees. Avoid contact of foliage and fruit with spray or mist.

Important considerations for use of Bromacil 80 on Citrus:

- Following treatment, temporary yellowing of citrus leaves may occur.
- Do not use on soils with less than 1% organic matter as injury to citrus trees may result.
- Do not use on poorly drained soils, gravelly soils or thinly covered or exposed subsoils.
- Do not use on diseased or stressed trees.
- Do not use on trees planted in irrigation furrows.
- Do not use in citrus groves interplanted with other desirable trees or plants or in areas where roots of desirable trees or plants may extend as injury to desirable trees or plants may result.
- Do not use in home citrus plantings.
- Do not apply more than 8 pounds product (6.4 pounds active ingredient), inclusive of all bromacil formulations, per treated acre per year.
- When making multiple applications in a single growing season, do not apply at less than 60 day intervals.
- Bromacil 80 may be applied at any time of the year provided rainfall or overhead irrigation is available to activate the herbicide, preferably just before or just after weeds have germinated

**U.S. (EXCEPT FLORIDA and TEXAS, see below for state specific instructions)**

**NOTE: THE FOLLOWING APPLIES TO TREES THAT ARE FOUR OR MORE YEARS OLD**

**For Control of Annual Weeds** – Apply 2 to 4 pounds of Bromacil 80 per acre. Apply anytime of the year, preferably shortly before or after weed growth begins when adequate moisture is available.

**For Control of Perennial Weeds** – Best results are obtained if application is made shortly before or shortly after weed growth begins; if dense growth is present, remove tops and spray the ground. Effects on perennial weeds are slow to appear, usually taking place over a period of several months.

Make a single application per year using the rates listed below during the period from winter to early summer:

<b>Soil Texture</b>	<b>Pounds of BROMACIL 80 per Acre</b>
Sand, Loamy Sand	4 to 5
Sandy Loam	5 to 6
Silt Loam, Clay Loam	6 to 8

Alternatively, except for Texas, make two applications of 3 to 4 pounds Bromacil 80 per acre per year. In Texas and Louisiana, apply in spring and summer; in California and Arizona, apply in fall and spring.

**Note:** Partial control usually occurs with a single treatment; repeat applications are required to control perennials. Control of perennials may be improved by cultivation prior to treatment; otherwise, avoid working the soil as long as weed control continues or else effectiveness of the treatment may be reduced.

Bromacil 80 controls the following:

Bermudagrass	All areas of the U.S.
Johnsongrass	Texas
Nutsedge	Texas, California

### **Texas**

In Texas, do not apply more than 3 pounds Bromacil 80 per acre per year.

For control of the annual weeds listed above, apply 2-3 pounds of Bromacil 80 per acre. Use the lower rate for 1 to 2 year old trees and the higher rate for trees more than 2 years old.

For best results in the control of perennial weeds make two applications, the first in spring and the second in the summer.

### **Florida**

The use of Bromacil 80 is prohibited for weed control in non-bedded citrus groves located on any permeable, better drained soil identified in the intended site of application. Permeable, better drained soils which occur in citrus producing areas of the state including unnamed soils and soils with characteristics of quartzipsamments, and the following soil series classifications:

Adamsville	Dade	Orsino
Archbold	Florahome	Palm Beach
Astatula	Fort Meade	Paola
Bahiahonda	Gainesville	Satellite
Broward	Lake	St. Augustine
Canaveral	Lakewood	St. Lucie
Candler	Neilhurst	Tavares
Cocoa	Orlando	

Treated areas may be planted to citrus trees one year after the last Bromacil 80 application. Do not replant to other crops within two years after the last Bromacil 80 application as plant injury may result.

**Application Instructions**

*Apply Bromacil 80 as a band treatment **only** using a properly calibrated fixed-boom power sprayer. Do not use Trunk to Trunk.*

Use sufficient spray volume (minimum of 10 gallons per acre) to provide uniform coverage of the treated area and to allow proper dispersion and suspension of the product in the spray tank. Continuous agitation in the spray tank is required to keep the product in suspension.

Avoid contact of foliage and fruit with spray or mist.

**NOTE:** All use rates of Bromacil 80 are expressed for broadcast treatments. For band treatments as required in Florida, use proportionately less.

**Trees Established Up to Three Years:** For control of annual weeds, apply 2 to 3 pounds of Bromacil 80 per treated acre as needed to maintain weed control. Do not apply more than 6 pounds of Bromacil 80 per treated acre within any 6 month period, or more than 8 pounds per treated acre per year.

**Trees Established Three or More Years:** For control of annual weeds, apply 2 to 4 pounds of Bromacil 80 per treated acre as needed to maintain weed control. Do not apply more than 4 pounds per treated acre in any one application. Do not use more than 8 pounds of Bromacil 80 per treated acre per year.

**Annual Weeds Controlled**

- Barnyardgrass
- Crabgrass
- Crowfootgrass
- Florida pusley
- Henbit
- Lambsquarter
- Mustard
- Natalgrass (red top)
- Puncturevine
- Purslane
- Sandspur
- Sedge (annual)
- Sprangletop
- Texas panicum
- Turkey mullein

### **Perennial Weeds Controlled**

Bahiagrass  
Bermudagrass  
Johnsongrass  
Nutsedge  
Pangolagrass  
Paragrass  
Torpedograss

**Note:** Use the highest rates allowed by this label for best control of perennial weeds listed on this label. Partial control of perennial weeds can result with only a single treatment of Bromacil 80. Repeat applications are required (in season and/or annually) for best control of the perennial weeds on this label. Control of perennials may be improved by cultivation prior to treatment, otherwise, avoid working the soil as long as weed control continues or else effectiveness of the treatment may be reduced.

### **Application Timing**

Allow a minimum interval of 60 days between applications of Bromacil 80.

### **PINEAPPLE**

Treated areas may be planted to citrus or pineapple one year after last application. Do not replant to other crops within two years after last application as injury may result.

When making multiple applications, do not apply at less than 60 day intervals.

**Hawaii and Florida** – Apply 2 to 6 pounds per acre broadcast before the planting material begins to grow for control of seedling weeds such as amaranthus, balsamapple, chloris, crabgrass, Floras paintbrush, foxtail, goosegrass (wiregrass), and Hialoa. Use the lower rates in low rainfall areas (5 to 10 inches annually) and on clean-culture fields; use the higher rates in high rainfall areas (above 10 inches annually) and for transmulch fields. Follow with either 2 to 4 pounds per acre as a directed interline spray as needed prior to differentiation or apply 2 pounds per acre broadcast as needed up to differentiation. Do not apply more than 10 pounds of Bromacil 80 total per acre per plant crop.

For ratoon crop, apply 1 to 4 pounds per acre broadcast after harvesting plant crop but before differentiation. Do not apply more than 4 pounds total per acre per ratoon crop.

**Puerto Rico** – For control of seedling weeds such as crabgrass, goosegrass, jungle rice, pigweed, and purslane, apply 2 to 4 pounds Bromacil 80 per acre broadcast immediately after planting and before planting material begins to grow.

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### **NON-AGRICULTURAL USES**

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#### **Use Restrictions – State of Florida**

***In Florida, the use of Bromacil 80 is prohibited in Hardee, Highland, Polk, Orange and Lake counties.*** For Non-Agricultural Usage in all other areas of the state, do not apply more than 8 pounds of Bromacil 80 (or 6.4 pounds of bromacil) per acre per year, including all formulations of bromacil.

## Recommendations for Non-Agricultural Uses for Bromacil 80

Bromacil 80 is recommended for control of undesirable vegetation for extended periods of time in non-crop areas such as railroads, highway and pipeline rights-of-way, petroleum tank farms, lumberyards, storage areas and industrial plant sites.

Do NOT apply this product to:

- Open water (such as creeks, estuaries, lakes, reservoirs, rivers, streams or salt water bays);
- When water is present in fresh water wetlands (such as bogs, marshes, potholes or swamps);
- Saltwater marshes within tidal areas;
- Ditches, banks along waterways or impervious substrates; or,
- Areas near desirable plants where roots of these plants may extend.

### Application Information

Apply Bromacil 80 using a properly calibrated fixed-boom power sprayer with sufficient spray volume to provide uniform coverage of the treated area and to allow proper dispersion and suspension of the product in the spray tank. All use rates of Bromacil 80 are expressed for broadcast treatments. For band treatments, use proportionately less.

### Notes for Non-Agricultural Uses:

For small areas, a hand sprayer or sprinkling can be used. When preparing to spray a small area, ¼ cup of Bromacil 80 per 200 sq. ft. is approximately 15 pounds per acre.

Use a spray volume of at least 40 gallons per acre to ensure uniform coverage.

### Application Timing

Apply Bromacil 80 as a preemergence spray prior to or during the rainy season when weeds are actively germinating or growing. Moisture is required to move Bromacil 80 into the root zone of weeds for preemergence control. For best preemergence weed control, apply prior to rainfall and weed germination.

### Application Rates

Apply Bromacil 80 at the rates indicated by weed type in the tables below. When applied at lower rates, Bromacil 80 provides short-term control of the weeds listed; when applied at higher rates, weed control is extended.

**Note:** Use the higher levels of the dosage ranges listed when applying on adsorptive soils (for example, those high in organic matter or carbon).

#### Annual Broadleaf Weeds and Grasses – 3 to 6 pounds per acre

Brome, downy	<i>Bromus tectorum</i>
Cheat	<i>Bromus secalinus</i>
Crabgrass	<i>Digitaria</i> spp.
Foxtails	<i>Setaria</i> spp.
Lambsquarter, common	<i>Chenopodium album</i>
Mullein, turkey	<i>Eremocarpus setigerus</i>
Oat, wild	<i>Avena fatua</i>
Puncturevine, common	<i>Tribulus terrestris</i>
Ragweed, common	<i>Ambrosia artemisiifolia</i>
Ryegrass, Italian	<i>Lolium multiflorum</i>



When applied just prior to or just after emergence of annuals, rates as low as 2 pounds per acre control many annual weeds and grass in low rainfall areas and gives short term control in higher rainfall areas.

**Perennial Broadleaf Weeds and Grasses – 7 to 15 pounds per acre**

Bahiagrass	<i>Paspalum notatum</i>
Bermudagrass	<i>Cynodon dactylon</i>
Bluegrass	<i>Poa</i> spp.
Brome, smooth	<i>Bromus inermis</i>
Broomsedge	<i>Andropogon virginicus</i>
Carrot, wild	<i>Caudus carota</i>
Dandelion, common	<i>Taraxacum officinale</i>
Dogfennel	<i>Eupatorium capaillifolium</i>
Goldenrod	<i>Solidago</i> spp.
Johnsongrass	<i>Sorghum halepense</i>
Natalgrass (redtop)	<i>Rhynchelytrum repens</i>
Nutsedge	<i>Cyperus</i> spp.
Plantain	<i>Plantago</i> spp.
Purpletop	<i>Verbena bonariensis</i>
Quackgrass	<i>Agropyron repens</i>

Application rates as low as 5 pounds per acre will control many perennial weeds and grasses in areas with low or seasonal rainfall.

Where limited rainfall (usually less than 4 inches) occurs during the active growth period, such as some areas of the West, Bromacil 80 may not provide satisfactory control of hard-to-kill, deep-rooted perennial weeds such as johnsongrass.

**Retreating** – Apply 2 to 6 pounds of Bromacil 80 per acre when annual weeds and grasses reappear on sites where weed growth has been controlled. Do not apply Bromacil 80 at more than 15 pounds per acre per year per site.

NOTE: Do not apply at less than 60 day intervals when making multiple applications.

**BRUSH CONTROL**

To control undesirable woody plants on non-cropland areas such as railroad rights-of-way, storage areas, and industrial plant sites, apply Bromacil 80 in spring or summer as a broadcast or basal (spot) treatment. Do not use where marketable timber or other desirable trees or shrubs are immediately adjacent to the treated area.

**Broadcast Treatment** – Apply 7 to 15 pounds per acre to control brush such as oak, pine, sweet gum, and willow. Use the higher rates on adsorptive soils (those high in organic matter or carbon).

**Basal (Spot) Treatment** – Mix 2 ½ pounds in 5 gallons of water and apply at the rate of 1 to 2 fl. oz. per stem 2” to 4” in basal diameter; wet base of stem to run-off. Treatment controls woody plants such as cottonwood, hackberry, maple, oak, poplar, red bud, sweet gum, wild cherry, willow and winged elm.

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## SPECIAL USES

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### UNDER ASPHALT AND CONCRETE PAVEMENT

#### Important Precautions when Applying Under Asphalt

- Do not use Bromacil 80 under pavement in residential properties such as driveways, or in recreational areas, including jogging or bike paths, tennis courts, or golf cart paths.
- Desirable plants may be injured if their roots extend into treated areas or if planted in treated areas.

#### Application Information

Bromacil 80 may be used in combination with Oust® XP to control weeds under asphalt and concrete pavement such as parking lots, highway shoulders, median strips, roadways and other industrial sites.

Bromacil 80 should only be used in an area that has been prepared according to good construction practices. Use sufficient water to ensure uniform coverage, generally 100 gallons per acre. Agitate the tank continuously to keep Bromacil 80 in suspension.

#### Application Timing

Bromacil 80 should be applied immediately before paving to avoid lateral movement of the herbicide as a result of soil movement due to rainfall or mechanical means.

#### Application Rates

Apply Bromacil 80 at 6 to 15 pounds per acre. Use a higher rate on hard to control weeds and/or for longer term weed control.

#### Tank Mixtures

To control a broader spectrum of weeds, or for an extended period of weed control, a tank mixture of Bromacil 80 at 6 to 15 pounds per acre plus Oust® or Oust® XP at 4 to 8 ounces per acre may be used.

### CONDITION OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

To the extent consistent with applicable law, upon purchase or use of this product, purchaser and user agree to the following terms:

**Warranty:** Alligare, LLC (the Company) warrants that this product conforms to the chemical description on the label in all material respects and is reasonably fit for the purpose referred to in the directions for use, subject to the exceptions noted below, which are beyond the Company's control. To the extent consistent with applicable law, the Company makes no other representation or warranty, express or implied, concerning the product, including no implied warranty of merchantability or fitness for a particular purpose. To the extent consistent with applicable law, no such warranty shall be implied by law, and no agent or representative is authorized to make any such warranty on the Company's behalf.

**Terms of Sale:** The Company's directions for use of this product must be followed carefully. It is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, and the manner of use or application (including failure to adhere to label directions), all of which are beyond the Company's control. To the extent consistent with applicable law, all such risks are assumed by the user.

**Limitation of Liability:** To the extent consistent with applicable law, the exclusive remedy against the Company for any cause of action relating to the handling or use of this product is a claim for damages, and in no event shall damages or any other recovery of any kind exceed the

price of the product which caused the alleged loss, damage, injury or other claim. To the extent consistent with applicable law, under no circumstances shall the Company be liable for any special, indirect, incidental or consequential damages of any kind, including loss of profits or income. Some states do not allow the exclusion or limitation of incidental or consequential damages.

The Company and the seller offer this product, and the purchaser and user accept this product, subject to the foregoing warranty, terms of sale and limitation of liability, which may be varied or modified only by an agreement in writing signed on behalf of the Company by an authorized representative.

Hyvar® is a registered trademark of Amvac Chemical Corporation

Oust® is a registered trademark of E.I. du Pont de Nemours and Company.

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