



DuPont™ Hyvar® X-L

herbicide



“..... A Growing Partnership With Nature”

TABLE OF CONTENTS

ACTIVE INGREDIENT	1
PRECAUTIONARY STATEMENTS	1
First Aid	1
Hazards to Humans and Domestic Animals	1
Personal Protective Equipment	1
Engineering Control Statement	1
User Safety Recommendations	1
Environmental Hazards	1
DIRECTIONS FOR USE	2
GENERAL INFORMATION	2
Spray Preparation	2
Environmental Conditions and Biological Activity	2
Weed Resistance Management	2
Integrated Pest Management	2
NON-CROP (INDUSTRIAL SITES)	2
Application Information	2
Application Timing	2
Application Rates	3
Weeds Controlled	3
BRUSH CONTROL	3
Application Information	3
Broadcast Applications	3
Basal (Soil) Applications	3
Undiluted	3
Diluted	3
Application Timing	3
Application Rates	3
Woody Plants Controlled	3
SPECIAL USES	3
Application Information	3
Application Timing	3
Application Rates	4
Weeds Controlled	4
USE PRECAUTIONS	4
SPRAYER CLEANUP	4
SPRAY DRIFT MANAGEMENT	4
STORAGE DISPOSAL	5
NOTICE TO BUYER	5
LIMITATION OF WARRANTY AND LIABILITY	6



DuPont™ HYVAR® X-L

herbicide

Water Soluble Liquid

Active Ingredient	By Weight
*Lithium salt of bromacil (5-bromo-3-sec-butyl-6-methyluracil)	21.9%
Inert Ingredients	78.1%
TOTAL	100%

* Equivalent to 21.4% Bromacil. 1 Gallon
Contains 2 Pounds Bromacil

EPA Reg. No. 352-346

KEEP OUT OF REACH OF CHILDREN CAUTION

FIRST AID

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 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 by mouth to an unconscious person.

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.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-800-441-3637 for medical emergencies involving this product.

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

PERSONAL PROTECTIVE EQUIPMENT

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

Applicators and other handlers must wear:

Long-sleeved shirt and long pants.
Shoes plus socks.

Chemical Resistant Gloves, Category C (such as butyl rubber, neoprene rubber, or nitrile rubber) all ≥ 14 mils.

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, 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.

Users should remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Wash the 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.

PHYSICAL OR CHEMICAL HAZARDS

Combustible. Do not use or store near heat or open flame. Keep container closed when not in use.

DIRECTIONS FOR USE

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

DuPont™ HYVAR® X-L should be used only in accordance with recommendations on this label, or in supplemental DuPont publications.

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.

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

USE RESTRICTIONS - STATE OF FLORIDA

In the state of Florida the use of HYVAR® X-L (bromacil) is prohibited in the counties of Hardee, Highland, Polk, Orange and Lake. For Non-Agricultural Usage in all other areas of the state, do not apply more than 3.2 gallons per acre per year of HYVAR® X-L. This amount corresponds to 6.4 pounds of bromacil, the active ingredient in HYVAR® X-L. The maximum allowable use rate for bromacil is 6.4 pounds per acre per year inclusive of all bromacil formulations.

GENERAL INFORMATION

HYVAR® X-L herbicide is a water soluble liquid to be mixed in water and applied as a spray for weed control in non-crop and industrial sites. It may also be applied either undiluted or diluted with water for the control of various species of brush on industrial sites. HYVAR® X-L is an effective general herbicide providing residual control of many annual weeds at low rates and perennial weeds and brush at higher rates. It is particularly useful for control of perennial grasses.

After mixing with water HYVAR® X-L is non-flammable, non-volatile and non-corrosive to metals, except aluminum. Use with aluminum spray nozzles or equipment is not recommended.

SPRAY PREPARATION

Before spraying, calibrate equipment to determine the quantity of water necessary to uniformly and thoroughly cover the vegetation and soil in a measured area to be treated.

Add the proper amount of HYVAR® X-L into a spray tank as it is being filled with the amount of water to be used.

Continue filling the tank and agitate. After HYVAR® X-L has been thoroughly mixed within the spray tank, agitation of the spray solution is not required. Where applicable, add surfactant and/or anti-foam agent as the last ingredient in the tank.

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

HYVAR® X-L is absorbed through the plant roots. Effects are generally slow to appear and may not become apparent until the chemical has been carried into the root zone of the weeds by rainfall or irrigation. Moisture is required to activate HYVAR® X-L in the soil. Best weed control results are obtained when the soil is moist at application and rainfall or irrigation occurs after application. Where limited rainfall occurs during the period of active weed growth, HYVAR® X-L usually will not provide satisfactory control of hard to kill, deep-rooted perennial weeds, such as, Johnsongrass.

Degree and duration of weed control depend on: rate used, weed spectrum, growing conditions at and following time of treatment, soil texture, organic matter, soil moisture at the time of treatment and precipitation following treatment.

Where a rate range is shown, use the higher range of rates on hard-to-control species, fine textured soils and soils high in organic matter or carbon. Use the lower range of rates on annual weeds and other susceptible species, coarse textured soils and soils low in organic matter or carbon. Refer to the specific use sections of this label for rate ranges.

WEED RESISTANCE MANAGEMENT

When herbicides with the same mode of action are used repeatedly over several years to control the same weed species in the same field or site, naturally-occurring resistant weed biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field or site. These resistant weed biotypes may not be adequately controlled. Cultural practices such as tillage, preventing weed escapes from going to seed, and/or using herbicides with different modes of action can aid in delaying the proliferation and possible dominance of herbicide resistant weed biotypes.

INTEGRATED PEST MANAGEMENT

DuPont recommends the use of Integrated Pest Management (IPM) programs to control pests. This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. Application of this product should be based on IPM principles and practices including 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 or site systems in your area.

NON-CROP (INDUSTRIAL) SITES

APPLICATION INFORMATION

HYVAR® X-L is recommended for use for general weed control on non-crop industrial sites such as railroad, highway and pipeline rights-of-way, petroleum tank farms, lumber yards, storage areas and industrial plant sites.

Apply with a fixed-boom or boom-less power sprayer properly calibrated at a constant speed and rate of delivery. Use sufficient spray volume (a minimum of 25 gallons per acre) to provide thorough and uniform coverage of the area to be treated. Spray booms should be shut off while starting, turning, slowing or stopping to avoid exceeding the prescribed application rates.

Applications may also be made with a handgun sprayer. For small areas, a hand or backpack sprayer may be used. Use sufficient spray volume to insure uniform coverage of the area to be treated.

Application Timing

Apply as a preemergence or early postemergence spray when weeds are actively germinating or growing, or prior to this period. Rainfall following application is required to activate HYVAR® X-L.

Application Rates

Apply DuPont™ HYVAR® X-L at the rates indicated in the table below. Use the lower rates for short-term control or in areas with less than 20 inches of annual rainfall. Use the higher rates for longer-term control or in areas with greater than 20 inches of annual rainfall.

Application rates may vary with soil texture and organic matter content. Use the lower rates on coarse textured soils, such as loamy sand and sandy loam. Use an intermediate rate on medium textured soils, such as loam, silt loam, silt, clay loam and sandy clay loam and the higher rates on fine textured soils, such as silty clay loam, clay loam, sandy clay, silty clay and clay. For soils low in organic matter or carbon use the lower rates and for soils with higher levels of organic matter or carbon use the higher rates.

Lower rates may be used in areas where it is desirable to maintain control of weeds that have been controlled with previous applications of residual herbicides. Use the higher rate as an initial treatment in areas where weeds have not been controlled with previous herbicide applications or in areas where perennial weed pests have become established.

Weeds Controlled

HYVAR® X-L effectively controls the following weeds and grasses when applied at the rates shown.

Annuals—3/4 to 3 gallons per acre

Bromegrass	Lambsquarters	Ryegrass
Cheatgrass	Orchard grass	Turkey mullein
Crabgrass	Puncturevine	Wild Oats
Foxtail	Ragweed	

Perennials—3 to 6 gallons per acre

Aster	Dog fennel	Redtop
Bahiagrass	Goldenrod	Smooth brome
Blue grass	Plantain	Wild carrot
Broomsedge	Purpletop	
Dandelion	Quackgrass	

In areas of high rainfall and lengthy growing seasons repeat applications of 3/4 to 3 gallons per acre of HYVAR® X-L may be needed to maintain season-long control. Make the applications when weeds and grasses begin to reappear on the previously treated areas.

Do not apply more than 6 gallons per acre per year of HYVAR® X-L.

BRUSH CONTROL

APPLICATION INFORMATION

HYVAR® X-L is recommended for the control of undesirable woody plants in non-crop areas such as railroad rights-of-way, storage areas, industrial plant sites and similar areas.

Broadcast Applications

Apply HYVAR® X-L as a course spray using ground equipment only. Use enough water for thorough coverage, usually a minimum of 25 gallons per acre.

Basal (Soil) Applications

Undiluted—Apply HYVAR® X-L undiluted with an exact delivery hand gun applicator. This equipment delivers a thin stream of a predetermined volume when triggered. Apply HYVAR® X-L at the rate of 5 to 10 milliliters for every 2 to 4 inches of basal stem diameter. Direct the treatment to the soil at the base of the brush. When treating large stems and more than one delivery of HYVAR® X-L is needed per stem, make applications on opposite sides of the stem.

Diluted—Mix 1 gallons of HYVAR® X-L in 5 gallons of water. Apply at the rate of 1 to 2 ounces of solution for every 2 to 4 inches of basal stem diameter.

Application Timing

Apply HYVAR® X-L from late winter through summer during the period of active growth or prior to this period. Rainfall following application is required to activate HYVAR® X-L.

Application Rates

Use the higher rate range of HYVAR® X-L for harder to control woody plants and/or in areas where high woody plant infestation levels are known to occur.

When applied at the low rate, HYVAR® X-L provides short-term control of the listed woody plants; when applied at the higher rates, control of woody plants is extended.

Woody Plants Controlled

2 3/4 to 6 gallons per acre

Cottonwood	Maple	Red bud
Elms, (American, winged)	Oaks	Sumac
Hackberry	Pines	Sweetgum
	Poplar	Willow

Do not apply more than 6 gallons of HYVAR® X-L per acre per year.

SPECIAL USES

APPLICATION INFORMATION

In addition to the sites listed previously, HYVAR® X-L may also be applied under pond liners and under asphalt and concrete such as highway shoulders and median strips, except in California.

HYVAR® X-L should only be used in areas that have been prepared according to good construction practices. Use sufficient water to ensure uniform coverage, generally 100 gallons per acre.

Pond liner application (10 to 12 gallons/acre rates) workers may treat a maximum of 10 acres per day.

Application Timing

On moist soils, apply HYVAR® X-L after final grading and immediately before laying the surfacing material.

If moisture is not present, incorporation of HYVAR® X-L is needed for activation. Incorporate to a depth of 4 to 6 inches after application using a rotary tiller or disc. Rainfall or irrigation of 2 inches will also provide uniform incorporation.

Application Rates

Use the higher rate range of DuPont™ HYVAR® X-L for harder to control weeds and/or in areas where high weed infestation levels are known to occur.

When applied at the low rate, HYVAR® X-L provides short-term control of the listed weeds; when applied at the higher rates, weed control is extended.

Weeds Controlled

When applied as directed HYVAR® X-L effectively controls the weeds and grasses in the following table.

Annuals—2 1/2 to 4 gallons per acre

Cheat	Lambsquarters	Turkey mullein
Crabgrass	Puncturevine	Wild oats
Downy brome	Ragweed	
Foxtail	Ryegrass	

Perennials—4 to 6 gallons per acre

Bahiagrass	Goldenrod	Redtop
Broomsedge	Plantain	Smooth brome
Dandelion	Purpletop	Wild carrot
Dogfennel	Quackgrass	

Perennials—10 to 12 gallons per acre*

Bermudagrass	Dogbane	Saltgrass
Bouncingbet	Horsetail	Vaseygrass
Bracken fern	Johnsongrass	
Dallisgrass	Nutsedge	

* This use rate is limited to application under pond liners.

USE PRECAUTIONS

- Injury to or loss of desirable trees or other plants may result if HYVAR® X-L is applied or if equipment is drained or flushed on or near desirable trees or other plants, 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 HYVAR® X-L on frozen soils.
- Do not use HYVAR® X-L in residential areas or around homes in areas such as lawns, driveways or parking lots. Do not use HYVAR® X-L in recreational areas such as bike, jogging or golf cart paths, tennis courts, or in areas where landscape plantings could be anticipated.
- Do not apply this product through any type of irrigation system.
- Do not use in Kern County, California.

SPRAYER CLEANUP

Thoroughly clean all mixing and spray equipment following applications of HYVAR® X-L as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water.
2. Fill the tank with clean water and 1 gallon of household ammonia (contains 3% active) for every 100 gallons of water. Flush the hoses, boom, and nozzles with the cleaning solution. Then add more water to completely fill the tank. Circulate the cleaning solution through the tank and hoses for at least 15 min. Flush the hoses, boom, and nozzles again with the cleaning solution, and then drain the tank.

Equivalent amounts of an alternate-strength ammonia solution or a commercial cleaner can be used in the cleanout procedure. If a commercial cleaner is used, carefully read and follow the individual cleaner instructions.

3. Remove the nozzles and screens and clean separately in a bucket containing cleaning agent and water.
4. Repeat step 2.
5. Rinse the tank, boom, and hoses with clean water.
6. Dispose of the rinsate on a labeled site or at an approved waste disposal facility. If a commercial cleaner is used follow the directions for rinsate disposal on the label.

Notes:

1. **Caution:** Do not use chlorine bleach with ammonia as dangerous gases will form. Do not clean equipment in an enclosed area.
2. Steam-cleaning aerial spray tanks is recommended before performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When HYVAR® X-L is tank mixed with other pesticides, all required cleanout procedures should be examined and the most rigorous procedure should be followed.

SPRAY DRIFT MANAGEMENT

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

AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

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 designed 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 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 effect 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.

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.

STORAGE AND DISPOSAL

STORAGE: Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Keep container closed when not in use.

PRODUCT DISPOSAL: Do not contaminate water, food, or feed by storage or disposal. Wastes resulting from the use of this product may be disposed of on site or at approved waste disposal facility.

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

NOTICE TO BUYER: Purchase of this material does not confer any rights under patents of countries outside of the United States.

The DuPont Oval Logo, DuPont™ and HYVAR® are trademarks or registered trademarks of E. I. duPont de Nemours and Company.

SL - 846 072402 10/21/02

**LIMITATION OF
WARRANTY AND LIABILITY**

NOTICE: Read This Limitation of Warranty and Liability Before Buying or Using This Product. If the Terms Are Not Acceptable, Return the Product at Once, Unopened, and the Purchase Price Will Be Refunded.

It is impossible to eliminate all risks associated with the use of this product. Such risks arise from weather conditions, soil factors, off target movement, unconventional farming techniques, presence of other materials, the manner of use or application, or other unknown factors, all of which are beyond the control of DuPont. These risks can cause: ineffectiveness of the product; crop injury, or; injury to non-target crops or plants.

DuPont does not agree to be an insurer of these risks. **WHEN YOU BUY OR USE THIS PRODUCT, YOU AGREE TO ACCEPT THESE RISKS.**

DuPont warrants that this product conforms to the chemical description on the label thereof and is reasonably fit for the purpose stated in the Directions for Use, subject to the inherent risks described above, when used in accordance with the Directions for Use under normal conditions.

DUPONT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

IN NO EVENT SHALL DUPONT OR SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT. BUYER'S OR USER'S BARGAINED-FOR EXPECTATION IS CROP PROTECTION. THE EXCLUSIVE REMEDY OF THE USER OR BUYER AND THE EXCLUSIVE LIABILITY OF DUPONT OR SELLER, FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY OR CONTRACT, NEGLIGENCE, TORT OR STRICT LIABILITY), WHETHER FROM FAILURE TO PERFORM OR INJURY TO CROPS OR OTHER PLANTS, AND RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT, OR AT THE ELECTION OF DUPONT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

DuPont or its Ag Retailer must have prompt notice of any claim so that an immediate inspection of buyer's or user's growing crops can be made. Buyer and all users shall promptly notify DuPont or a DuPont Ag Retailer of any claims, whether based on contract, negligence, strict liability, other tort or otherwise or be barred from any remedy.

This Limitation of Warranty and Liability may not be amended by any oral or written agreement.

For product information call: 1-888-6-DUPONT

Internet address: <http://cropprotection.dupont.com/>

© 1999-2002 E. I. du Pont de Nemours and Company, Wilmington, Delaware 19898.

All rights reserved.