RESTRICTED USE PESTICIDE

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DUPONT®

DuPont™ Hyvar® X

herbicide

Department of Agriculture
STATE OF HAWAII
LICENSED
PERIOD 2009-2011 LIC. NO.

Department of Agriculture
STATE OF HAWAII
LICENSED
PERIOD 2012-2014 LIC. NO.

Department of Agriculture
STATE OF HAWAII
LICENSED
PERIOD 2015-2017 LIC. NO.
9200.9

RECEIVED
JUN 14 2010
Pesticides Branch

RESTRICTED USE PESTICIDE

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DuPont™ Hyvar® X

herbicide

Wettable Powder

Active Ingredient	By Weight
Bromacil (5-bromo-3-sec-butyl-6-methyluracil)	80%
Other Ingredients	20%
TOTAL	100%

EPA Reg. No. 352-287 EPA Est. No. _____

Nonrefillable Container

Net: _____

OR

Refillable Container

Net: _____

KEEP OUT OF REACH OF CHILDREN

CAUTION

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

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 (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.
Shoes plus socks.
Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinylchloride.

Mixers and Loaders must also wear:

A non-powered air purifying respirator equipped with a N, R, or P 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.

Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on 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 or rinsate.

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.

PRODUCT INFORMATION

DuPont™ HYVAR® X herbicide is a wettable powder 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. HYVAR® X is an effective general herbicide that controls many annual weeds at lower rates and perennial weeds and brush at the highest rates allowed by this label. It is particularly useful for the control of perennial grasses

Moisture is necessary to move the herbicide into the root zone 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 after application. Weed control symptoms are slow to appear and may not become apparent until the herbicide 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, soil texture, rainfall, and other soil and water management practices.

USE PRECAUTIONS AND RESTRICTIONS

HYVAR® X is not to be used in any recreational areas or in or around homes.

Injury to or loss of desirable trees or other plants may result from failure to observe the following: Do not apply (except as specified for crop use), 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 on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of dry powder or spray to desirable plants. Keep from contact with fertilizers, insecticides, fungicides, and seeds. Thoroughly clean all traces of HYVAR® X 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).

Do not apply this product through any type of irrigation system.

Do not graze cattle in treated areas.

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.

Note:

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Assure accurate measurement of pesticides by all operation employees.
- Mix only enough product for the job at hand.
- Avoid over-filling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field/grove or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates/uses.
- Avoid storage of pesticides near well sites.

TANK MIXTURES

HYVAR® X may be tank mixed with other suitable herbicides registered for agricultural and non-agricultural use. Refer to the tank mixture partner label(s) for any additional use information or restrictions. Follow the label guidelines that are the most restrictive.

NOTE: HYVAR® X is a wettable powder formulation and care must be taken to ensure the product is fully suspended in the spray tank carrier (water, liquid fertilizer) before adding any other herbicide or spray adjuvant. If there is no prior use experience with the tank mixture combination, a small compatibility test should be performed prior to adding the products into the spray tank. See ADDITIONAL INSTRUCTIONS FOR AG AND NON-AG USES section of the label for further information.

When using HYVAR® X alone or in combination, thoroughly re-agitate the spray tank contents if allowed to settle.

CROP ROTATION BIOASSAY

In arid climates (10 inches of rainfall or less) or areas where drought conditions have prevailed for one or more years, a field bioassay should be completed prior to planting any desired crop(s). The results from this bioassay may require the two-year crop rotation interval to be extended. A successful field bioassay means growing to maturity a test strip of the crop(s) intended for production. The test strip should cross the entire field including knolls and low areas.

RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. 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 that can include 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.

DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling. DuPont™ HYVAR® X must only be used in accordance with directions on this label. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

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.

AGRICULTURAL USES

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.

APPLICATION INFORMATION

Apply HYVAR® X using a properly calibrated fixed-boom power sprayer. All use rates of HYVAR® X 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 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. Agitate spray tank contents by mechanical or hydraulic means. If a by-pass or return line is used, it should terminate at a bottom of tank to minimize foaming. Do not use air agitation.

Spray booms must be shut off while starting, turning, slowing or stopping as injury to the crop or successive crops may result. Nozzle screens should be 50 mesh or larger.

WEEDS CONTROLLED (annuals)

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

WEEDS CONTROLLED (perennials)

Bahiagrass	*Paspalum notatum*
Bermudagrass	*Cynodon dactylon*
Johnsongrass	*Sorghum halepense*
Nutsedge	*Cyperus spp.*
Pangolagrass	*Digitaria decumbens*
Paragrass	*Panicum purpurascens*
Torpedograss	*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 or else effectiveness of the treatment may be reduced.

CITRUS

Apply HYVAR® X as a band or broadcast treatment beneath and/or between trees. Avoid contact of foliage and fruit with spray or mist.

Temporary yellowing of citrus leaves may occur following treatment. As injury to citrus trees may result, do not use on soils with less than 1% organic matter. Do not use on poorly drained soils, gravelly soils or thinly covered or exposed subsoils.

Do not treat trees planted in irrigation furrows. Do not treat diseased or stressed trees. 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 per acre per year.

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

FLORIDA

DuPont™ HYVAR® X controls many annual weeds, and at the highest rates allowed on this label, it controls certain perennial weeds. It is particularly useful for control of perennial grasses.

Apply HYVAR® X 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. 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. Best results are obtained if moisture is supplied by rainfall or sprinkler irrigation within two weeks after application. Multiple applications may improve control of "hard-to-kill" weeds. The degree and duration of control will vary with the amount of herbicide applied, soil texture, rainfall and other conditions. It is non-corrosive to equipment, non-flammable and non-volatile.

PRECAUTIONS AND USE RESTRICTIONS

The use of HYVAR® X (bromacil) 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 include soils unnamed and characteristic 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	

Do not use HYVAR® X in recreational areas or around homes. Prevent drift of dry powder or spray to desirable plants.

Injury to or loss of desirable trees or other plants may result from failure to observe the following: Do not apply (except as specified for crop use), 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 on lawns, walks, driveways, tennis courts, or similar areas. Do not apply directly to water, or to areas where surface water is present, or to inter-tidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash water. Keep from contact with fertilizer, insecticides, fungicides, and seeds. Thoroughly clean all traces of HYVAR® X 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.)

Temporary yellowing of citrus leaves may occur following treatment. Because injury to citrus trees may result, do not use on soils with less than 1.0% organic matter or on poorly drained soils.

Do not treat trees planted in irrigation furrows.

Do not treat diseased or stressed trees.

Do not use in citrus groves inter-planted 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 this product through any type of irrigation system.

In areas where drought conditions have prevailed for one or more years, a field bioassay should be completed prior to planting any desired crop(s). The results from this bioassay may require the two-year crop rotation interval to be extended. A successful field bioassay means growing to maturity a test strip of the crop(s) intended for production. The test strip should cross the entire field including knolls and low areas.

APPLICATION INSTRUCTIONS

Apply HYVAR® X as a band treatment only using a properly calibrated fixed-boom power sprayer. **Do not use Trunk to Trunk.** All use rates of HYVAR® X 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 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.

Because injury to citrus trees may result, do not use on soils low in organic matter (less than 1%).

Avoid contact of foliage and fruit with spray or mist.

Do not apply more than 8 pounds product (6.4 pounds active ingredient) per treated acre per year. The maximum allowable use rate for bromacil is 6.4 pounds active ingredient per treated acre per year inclusive of all bromacil formulations.

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

Allow an interval of 60 days between application of HYVAR® X.

Do not graze cattle in treated areas.

Trees Established Up to Three Years: For control of annual weeds, apply 2-3 pounds of HYVAR® X per treated acre as needed to maintain weed control. Do not apply more than 6 pounds 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 2-4 pounds of HYVAR® X 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 per treated acre per year.

WEEDS CONTROLLED (Annuals)

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

WEEDS CONTROLLED (Perennials)

Bahiagrass	Pangolagrass
Bermudagrass	Paragrass
Johnsongrass	Torpedograss
Nutsedge	

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 DuPont™ HYVAR® X. 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.

TEXAS

For the control of the annual weeds listed above, apply 2-3 pounds of HYVAR® X per acre. Use the lower rate for 1 to 2 year old trees and the higher rate for trees more than 2 years old. Do not apply more than 3 pounds HYVAR® X per acre per year.

U.S. (EXCEPT FLORIDA and TEXAS)

Trees Established for Four Years or More

Annual Weeds--Including barnyardgrass (watergrass), crabgrass, crowfootgrass, Florida pusley, henbit, lambsquarters, mustard, natalgrass (red top), puncturevine, purslane, sandspur, sedge (annual), sprangletop, Texas panicum (Colorado grass), and turkey mullein, apply 2 to 4 pounds per acre. Apply anytime of the year, preferably shortly before or after weed growth begins when adequate moisture is available.

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 progressing over a period of several months.

Make a single application per year during the period from winter to early summer; use at the following rates:

Soil Texture	Pounds HYVAR® X Per Acre
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 HYVAR® X 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.

HYVAR® X controls the following:

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

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.

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--For control of seedling weeds such as amaranthus, balsamapple, chloris, crabgrass, Floras paintbrush, foxtail, goosegrass (wiregrass), and Hialoa, apply 2 to 6 pounds per acre broadcast before the planting material begins to grow. 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 trashmulch 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 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 per acre broadcast immediately after planting and before planting material begins to grow.

NON-AGRICULTURAL USES

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 Part170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Non-crop weed and brush control are not within the scope of the Worker Protection Standard.

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 (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 8 pounds per acre per year of HYVAR® X. This amount corresponds to 6.4 pounds of bromacil, the active ingredient in HYVAR® X. The maximum allowable use rate for bromacil is 6.4 pounds per acre per year inclusive of all bromacil formulations.

APPLICATION INFORMATION

HYVAR® X is labeled for control of undesirable vegetation for extended periods of time in non-crop areas as follows: uncultivated non-agricultural areas (such as, airports, highway, railroad and utility rights-of-way, sewage disposal areas); uncultivated agricultural areas (non-crop producing, which includes: farmyards, fuel storage areas, fence rows, barrier strips); industrial sites (outdoor, such as, lumberyards,

pipeline and tank farms). Do not apply to open water (such as lakes, reservoirs, rivers, streams, creeks, salt water bays or estuaries) nor while water is present in fresh water wetlands (such as marshes, swamps, bogs or potholes) nor to salt water marshes within tidal areas nor to ditches, banks along waterways or impervious substrates, nor to areas near desirable plants where roots of these plants may extend.

Apply DuPont™ HYVAR® X using a properly calibrated fixed-boom power sprayer. Use 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 HYVAR® X are expressed for broadcast treatments. For band treatments, use proportionately less.

Note: Applications may also be made using a handgun sprayer. Use a spray volume of at least 40 gallons per acre to insure uniform coverage. For small areas, a hand sprayer or sprinkling may be used.

APPLICATION TIMING

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

APPLICATION RATES

Apply HYVAR® X at the rates indicated by weed type. When applied at lower rates, HYVAR® X provides short-term control of weeds listed; when applied at higher rates, weed control is extended.

WEEDS CONTROLLED

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

Annual Broadleaf Weeds and Grasses -- 3-6 pounds per acre

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

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 -- 7-15 pounds per acre

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

In areas with low or seasonal rainfall, rates as low as 5 pounds per acre control many perennial weeds and grasses.

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

NOTE: Use the higher levels of the dosage ranges on adsorptive soils (those high in organic matter or carbon).

Retreating--Apply 2 to 6 pounds per acre when annual weeds and grasses reappear on sites where weed growth has been controlled. Do not apply HYVAR® X at more than 15 pounds per acre per year per site.

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

Small Areas--1/4 cupful of HYVAR® X per 200 sq. ft. is approximately 15 pounds per acre.

BRUSH CONTROL

To control undesirable woody plants on non-cropland areas such as RAILROAD RIGHT-OF-WAYS, STORAGE AREAS, and INDUSTRIAL PLANT SITES.

Apply 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 1/2 pounds in 5 gals. 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.

SPECIAL USES

UNDER ASPHALT AND CONCRETE PAVEMENT

APPLICATION INFORMATION

DuPont™ HYVAR® X may be used in combination with DuPont™ OUST® XP to control weeds under asphalt and concrete pavement, such as that used in parking lots, highway shoulders, median strips, roadways, and other industrial sites.

HYVAR® X should only be used in an area that has been prepared according to good construction practices. Use sufficient water to insure uniform coverage, generally 100 gal per acre. Agitate the tank continuously to keep HYVAR® X in suspension.

APPLICATION TIMING

HYVAR® X 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 HYVAR® X at 6 to 15 pounds per acre. Use a higher rate on hard to control weeds and/or for longer term weed control.

Important Precautions--Under Asphalt Only

- Do not use HYVAR® X 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.

TANK MIXTURES

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

ADDITIONAL INSTRUCTIONS FOR AG AND NON-AG USES

SPRAY PREPARATION

Mixing in water - Fill tank 1/2 full with water. Start agitation system, add HYVAR® X and continue adding water. Add separately each additional component of any tank-mix while adding water. Continue agitation throughout.

Mixing in liquid fertilizer (citrus only) - A fertilizer solution may be used in the spray mixture. Small quantities should be tested for compatibility by the following procedures before full scale mixing.

1. Put 1 pint fertilizer solution in a quart jar.
2. Mix 2 teaspoons HYVAR® X with 2 tablespoonfuls of water; mix thoroughly and add to fertilizer solution.
3. Close jar and shake well.
4. If other herbicides are used in the mixture, premix 2 teaspoonfuls of dry materials or 1 teaspoonful of liquids with 2 tablespoons of water; add to HYVAR® X/ fertilizer solution mixture.
5. Close jar and shake well.
6. Watch mixture for several seconds; check again in 30 minutes.
7. If mixture does not separate, foam, gel or become lumpy, it may be used.

Provided the above procedure shows the mixture to be compatible, prepare the tank mixture as follows: add the fertilizer solution to the spray tank first, mix the required amount of HYVAR® X with water to form a slurry, with the agitator running, slowly add the slurry and mix thoroughly.

Mixing with other herbicides: Determine the tank mixture partner(s) compatibility with HYVAR® X by following the directions above. For Step 1 above, use 1 pint of water instead of the liquid fertilizer. Provided the above procedure shows the mixture to be compatible, HYVAR® X may be used in this tank mixture.

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 specified 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.

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).

SPRAY TANK CLEAN OUT

Thoroughly clean all traces of DuPont™ HYVAR® X 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.

STORAGE AND DISPOSAL

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

PESTICIDE STORAGE: Store product in original container only. Store in a cool, dry place.

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

CONTAINER HANDLING: Refer to the Net Contents section of this product's labeling for the applicable "Nonrefillable Container" or "Refillable Container" designation.

Nonrefillable Plastic and Metal Containers (Capacity Equal to or Less Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. 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. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities

Nonrefillable Plastic and Metal Containers (Capacity Greater Than 50 Pounds): Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Plastic and Metal Containers, e.g., Intermediate Bulk Containers [IBC] (Size or Shape Too Large to be Tipped, Rolled or Turned Upside Down): Nonrefillable container. Do not reuse or refill this container. Clean container promptly after emptying the contents from this container into application equipment or mix tank and before final disposal using the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Nonrefillable Paper or Plastic Bags, Fiber Sacks including Flexible Intermediate Bulk Containers (FIBC) or Fiber Drums With Liners: Nonrefillable container. Do not reuse or refill this container. Completely empty paper or plastic bag, fiber sack or drum liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer for recycling if available or dispose of empty paper or plastic bag, fiber sack or fiber drum and liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

Refillable Fiber Drums With Liners: Refillable container (fiber drum only). *Refilling Fiber Drum:* Refill this fiber drum with DuPont™ HYVAR® X containing bromacil only. Do not reuse this fiber drum for any other purpose. Cleaning before refilling is the responsibility of the refiller. Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. *Disposing of Fiber Drum and/or Liner:* Do not reuse this fiber drum for any other purpose other than refilling (see preceding). Cleaning the container (liner and/or fiber drum) before final disposal is the responsibility of the person disposing of the container. Offer the liner for recycling if available or dispose of liner in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. If drum is contaminated and cannot be reused, dispose of it in the manner required for its liner. To clean the fiber drum before final disposal, completely empty the fiber drum by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application or manufacturing equipment. Then offer the fiber drum for recycling if available or dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances.

All Other Refillable Containers: Refillable container. *Refilling Container:* Refill this container with DuPont™ HYVAR® X containing bromacil only. Do not reuse this container for any other purpose. Cleaning before refilling is the responsibility of the refiller. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. If damage is found, do not use the container, contact DuPont at the number below for instructions. Check for leaks after refilling and before transporting. If leaks are found, do not reuse or transport container, contact DuPont at the number below for instructions. *Disposing of Container:* Do not reuse this container for any other purpose other than refilling (see preceding). Cleaning the container before final disposal is the responsibility of the person disposing of the container. To clean the container before final disposal, use the following pressure rinsing procedure. Insert a lance fitted with a suitable tank cleaning nozzle into the container and ensure that the water spray thoroughly covers the top, bottom and all sides inside the container. The nozzle manufacturer generally provides instructions for the appropriate spray pressure, spray duration and/or spray volume. If the manufacturer's instructions are not available, pressure rinse the container for at least 60 seconds using a minimum pressure of 30 PSI with a minimum rinse volume of 10% of the container volume. Drain, pour or pump rinsate into application equipment or rinsate collection system. Repeat this pressure rinsing procedure two more times. Then, for Plastic Containers, offer for recycling if available or puncture and dispose of in a sanitary landfill, or by incineration. Do not burn, unless allowed by state and local ordinances. For Metal Containers, offer for recycling if available or reconditioning if appropriate, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

Outer Foil Pouches of Water Soluble Packets (WSP): Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available or, dispose of the empty outer foil pouch in the trash as long as WSP is unbroken. If the outer pouch contacts the formulated product in any way, the pouch must be triple rinsed with clean water. Add the rinsate to the spray tank and dispose of the outer pouch as described previously.

Do not transport if this container is damaged or leaking. If the container is damaged, leaking or obsolete, or in the event of a major spill, fire or other emergency, contact DuPont at 1-800-441-3637, day or night.

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SL - 1579 060710 06-01-10

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

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