352-645 C 08-02-2011 C

1/14

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460-0001

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Mr. J.H. Cain
E.I. DuPont de Nemours & Company
DuPont Crop Protection
Stine-Haskell Research Center
P.O. Box 30
Newark, DE 19714-0300

AUG 2 2011

Subject: Amended Reregistration Label (Chlorsulfuron Reregistration)
Product Name: DuPont Landmark XP Herbicide
EPA Registration Number: 352-645
Label Submitted: July 28, 2011

Dear Mr. Cain:

The Agency, in accordance with the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, has completed reviewing all of the information submitted with your application to support the reregistration of the above referenced product in connection with the Chlorsulfuron RED, and has concluded that your submission is acceptable.

NOTE: This product is **not** being reregistered under sections 3(c)5 and 4(g) of FIFRA at this time because this product contains an additional active ingredient which is pending a RED amendment.

Please note that the record for this product currently contains the Confidential Statements of Formulation (CSFs) dated 08/28/08. Any previously dated CSFs are superseded.

A copy of your label stamped "Accepted" is enclosed along with copies of the acute toxicity and product chemistry reviews completed for the subject product. Products shipped after 12 months from the date of this amendment or the next printing of the label whichever occurs first, must bear the new revised label. Your release for shipment of the product bearing the amended label constitutes acceptance of these conditions. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e).

If you have any questions about this letter, please contact Maggie Rudick at (703) 347-0257 or via email at rudick.maggie@epa.gov.

Sincerely,

Kable Bo Davis
Herbicide Branch
Registration Division (7505P)

DUPONT®

DuPont™ Landmark® XP

herbicide

Dispersible Granules

Active Ingredient	*By Weight*
Sulfometuron methyl {Methyl 2-[[[[(4,6-dimethyl-2-pyrimidinyl)amino]-carbonyl]amino] sulfonyl]benzoate}	50%
Chlorsulfuron 2-Chloro-N-[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)aminocarbonyl] benzenesulfonamide	25%
Other Ingredients	25%
TOTAL	100%

EPA Reg. No. 352-645 EPA Est. No. _____

Nonrefillable Container
Net: _____
OR
Refillable Container
Net: _____

E. I. duPont de Nemours and Company
1007 Market Street
Wilmington, DE 19898

KEEP OUT OF REACH OF CHILDREN

CAUTION

FIRST AID

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

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 five minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF ON SKIN OR CLOTHING: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call poison control center or doctor for treatment advice.

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

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

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

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are polyethylene and polyvinylchloride. If you want more options, follow the instructions for category A on an EPA chemical-resistant category selection chart.

All mixers, loaders, 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 polyvinyl chloride.

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.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Engineering Control Statement: When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in 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 PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If no such instructions for washables exist, use detergent and hot water.

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 by cleaning of equipment or disposal of equipment washwaters or rinsate.

DIRECTIONS FOR USE

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

DuPont™ LANDMARK® XP must be used only in accordance with instructions on this label or separately published DuPont labeling.

DuPont will not be responsible for losses or damages resulting from the use of this product in any manner not specified by DuPont. User assumes all risks associated with such unspecified use.

Do not exceed a rate of 8.0 ounces of LANDMARK® XP per acre per year.

Do not apply more than 6.0 ounces (0.375 pounds active) active ingredient sulfometuron methyl per acre per year when using this product or any other product containing sulfometuron methyl.

Do not apply more than 2.0 ounces active ingredient (0.125 pounds active) chlorsulfuron per acre per year. Do not make more than three applications of chlorsulfuron per year.

Do not use on food or feed crops.

Do not use on sod farms.

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 in your State responsible for pesticide regulation.

PRODUCT INFORMATION

LANDMARK® XP herbicide is a dispersible granule that is mixed in water and applied as a spray.

LANDMARK® XP controls many annual and perennial grasses and broadleaf weeds in rangeland restoration and in non-crop sites. LANDMARK® XP may be used for general weed control on terrestrial non-crop sites and for selective weed control in certain types of unimproved turf grasses on these same sites. LANDMARK® XP can be tank mixed with other herbicides registered for use in non-crop sites; when tank mixing, use the most restrictive limitations from the labeling of both products.

LANDMARK® XP controls weeds by both preemergence and postemergence activity. The best results are obtained when the application is made at or before the early stages of weed growth; before weeds develop an established root system. Moisture is required to move LANDMARK® XP into the root zone of weeds for preemergence control.

This product may be applied on terrestrial sites that contain areas of temporary surface water caused by collection of water in equipment ruts, or in other depressions created by management activities. It is permissible to treat intermittently flooded low lying areas, seasonal dry flood plains and transitional areas between upland and lowland areas when no water is present. It is also permissible to treat marshes, swamps and bogs after water has receded, as well as seasonally dry flood deltas. DO NOT make applications to natural or man-made bodies of water such as lakes, reservoirs, ponds, streams and canals.

A drift control agent may be used at the manufacturer's listed rate in the application of LANDMARK® XP.

LANDMARK® XP is noncorrosive, nonflammable, nonvolatile and does not freeze.

For best postemergence results, apply LANDMARK® XP to young, actively growing weeds. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment
- soil pH, soil moisture, and soil organic matter

ENVIRONMENTAL CONDITIONS AND BIOLOGICAL ACTIVITY

When applied as a spray, LANDMARK® XP is absorbed by both the roots and foliage of plants, rapidly inhibiting the growth of susceptible weeds. When applied on dry fertilizer, LANDMARK® XP is absorbed primarily by the roots. Two to three weeks after application to weeds, plant growth slows, and the growing points turn reddish-purple. Within 4 to 6 weeks of application, leaf veins and leaves become discolored, and the growing points subsequently die.

Warm, moist conditions following application accelerate the herbicidal activity of LANDMARK® XP; cold, dry conditions delay the herbicidal activity. In addition, weeds hardened-off by drought stress are less susceptible to LANDMARK® XP. Moisture is needed to move LANDMARK® XP into the soil for preemergence weed control.

INVASIVE SPECIES MANAGEMENT

This product may be considered for use on public, private, and tribal lands to treat certain weed species infestations that have been determined to be invasive, consistent with the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) National Early Detection and Rapid Response (EDRR) System for invasive plants. Effective EDRR systems address invasions by eradicating the invader where possible, and controlling them when the invasive species is too established to be feasibly eradicated. Once an EDRR assessment has been completed and action is recommended, a Rapid Response needs to be taken to quickly contain, deny reproduction, and if possible eliminate the invader. Consult your appropriate state extension service, forest service, or regional multidisciplinary invasive species management coordination team to determine the appropriate Rapid Response provisions and allowed treatments in your area.

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.

PREPARING FOR USE - Site Specific Considerations

Understanding the risks associated with the application of DuPont™ LANDMARK® XP is essential to aid in preventing off-site injury to desirable vegetation and agricultural crops. The risk of off-site movement both during and after application may be affected by a number of site specific factors such as the nature, texture and stability of the soil, the intensity and direction of prevailing winds, vegetative cover, site slope, rainfall, drainage patterns, and other local physical and environmental conditions. A careful evaluation of the potential for off-site movement from the intended application site, including movement of treated soil by wind or water erosion, must be made prior to using LANDMARK® XP. This evaluation is particularly critical where desirable vegetation or crops are grown on neighboring land for which the use of LANDMARK® XP is not labeled. If prevailing local conditions may be expected to result in off-site movement and cause damage to neighboring desirable vegetation or agricultural crops, do not apply LANDMARK® XP.

Before applying LANDMARK® XP the user must read and understand all label directions, precautions and restrictions completely, including these requirements for a site specific evaluation. If you do not understand any of the instructions or precautions on the label, or are unable to make a site specific evaluation yourself, consult your local agricultural dealer, cooperative extension service, land managers, professional consultants, or other qualified authorities familiar with the area to be treated. If you still have questions regarding the need for site specific considerations, please call 1-888-6-DUPONT.

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 4 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.

RANGELAND RESTORATION WEST OF THE MISSISSIPPI RIVER

PRODUCT INFORMATION

LANDMARK® XP herbicide is a dispersible granule that is mixed in water and applied as a spray. A restoration management program that includes LANDMARK® XP herbicide may be used when rangeland has become severely infested with invasive weed species, and deteriorated to where it is no longer suitable for grazing or forage production. To reclaim these lands, the invasive weed species must first be controlled to either allow native grasses to reestablish or to be replanted where practical with other desirable perennial grasses. The grasses must be allowed time to reestablish before grazing or forage production is resumed. A typical restoration management program will take one to two years.

In order to establish and/or release desirable, perennial grass species for rangeland restoration, DuPont™ LANDMARK® XP may be used to control the undesirable grasses and broadleaf weeds listed in the Weeds Controlled section of this label. The residual activity of LANDMARK® XP will also help prevent the reemergence of many of these weeds while desirable grasses are being reestablished.

At the higher rates, any remaining rangeland perennial grasses in the treated area may exhibit a temporary chlorosis following application of LANDMARK® XP. The use of an adjuvant with LANDMARK® XP may increase perennial grass injury.

RESTORATION PROGRAM

An effective restoration program may include one or more of the following steps (A through E):

A. Identifying and inventorying the weed infestation and desired grass densities.

B. Consulting and planning the entire program with personnel experienced in herbicide programs and range restoration.

C. Making applications of LANDMARK® XP prior to soil freeze up or after spring thaw. All label instructions, precautions, and restrictions on this label or in separately published DuPont labeling must be followed.

D. Planting grass seed as needed to improve the site, per the Grass Replant Interval section of this label.

- Planting to obtain the highest possible grass stand establishment.
- Planting a selected grass mixture to improve the desired stand.
- Using a properly fitted drill to help ensure correct seed placement and depth is suggested.
- Seeding in late fall to best ensure moisture for seed germination. Seeding in the spring has the highest risk ofstand failure.
- Consulting with a knowledgeable grass seed supplier to select the best-suited varieties for your area.

E. Treating for second year forbs control (if necessary):

- Treat with DuPont™ TELAR® XP (0.25 to 1 ounce per acre)+ bromoxynil (1 pint per acre). Make applications to small, early growth stage weeds.
- 2,4-D amine or ester (0.5 to 1 pint per acre of 4 pound active ingredient product) added as a safener.

GRASS REPLANT INTERVALS

The replant intervals listed below are for soils with a pH of less than 7.5. Soils having a pH greater than 7.5 will require longer intervals. The specified intervals are for applications made in the spring. Because LANDMARK® XP degradation is slowed by cold or frozen soils, applications made in the fall must consider the replant intervals as beginning in the spring following treatment.

Following a treatment with LANDMARK® XP at use rates up to 2.25 ounces of product per acre, the following grasses may be replanted at least 3 months after a spring application:

Brome, meadow	*Bromus erectus*
Needlegrass, green	*Stipa viridula*
Rye, Russian wild	*Elymus sp.*
Switchgrass	*Panicum virgatum*

The following grasses may be replanted at least 6 months after a spring application:

Brome, smooth	*Bromus invermis*
Fescue, alta	*Festuca arundinacea*
Fescue, sheep	*Festuca ovina*
Foxtail, meadow	*Alopecurus pratensis*
Orchardgrass	*Dactylis glomerata*
Wheatgrass, western	*Agropyron smithii*

Testing has indicated that there is considerable variation in response among species and types of grasses when seeded into areas treated with LANDMARK® XP. If species other than those listed above are to be planted into areas treated with LANDMARK® XP either a bioassay must be performed, or previous experience may be used to determine the feasibility of replanting treated areas. To conduct a field bioassay, grow to maturity test strips of the grass species you plan to grow the following year. The test strips must cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the grass species grown in the test strips.

APPLICATION RATES AND TIMING

Apply LANDMARK® XP at 0.75 to 2.25 ounces per acre in the fall or spring, prior to moisture expectation and plant growth. Do not apply when soil is frozen. For residual activity, moisture is required to activate LANDMARK® XP herbicide.

WEEDS CONTROLLED

When applied at 0.75 ounce per acre, LANDMARK® XP controls the following weeds:

BROADLEAF WEEDS

Chamomile, false	*Matricaria maritima*
Falseflax, smallseed	*Camelina microcarpa*
Fleabane	*Conyza sp.*
Lambsquarter, common	*Chenopodium album*
Mustard, tumble (Jim Hill)	*Sisymbrium altissimum*
Mustard, blue	*Chorispora tenella*
Pennycress, field	*Thlaspi arvense*
Pigweed, redroot	*Amaranthus retroflexus*
Purslane, common	*Portulaca oleracea*
Tansymustard	*Descurainia pinnata*
Tarweed, common	*Archillea millefolium*

GRASSES

Bluegrass, bulbous	*Poa bulbosa*
Brome, downy (cheatgrass)	*Bromus tectorum*
Cheat	*Bromus secalinus*

When applied at 1.5 ounces per acre, LANDMARK® XP controls the following additional weeds:

BROADLEAF WEEDS

Buckwheat, wild	*Polygonum convolvulus*
Buttercup	*Petasites hybridus*
Carrot, wild	*Daucus carota*
Chickweed, common	*Stellaria media*
Clover	*Trifolium sp.*
Cocklebur	*Xanthium sp.*
Cockle, cow	*Vaccaria pyramidata*
Coontail, prickly	*Ceratophyllum echinatum*
Dandelion	*Taraxacum officinale*
Dyer's woad	*Isatis tinctoria*
Eveningprimrose, cutleaf	*Oenothera laciniata*
Fiddleneck	*Amsinckia lycopsoides*
Filaree, whitestem	*Erodium moschatum*
Flixweed	*Descurainia sophia*
Geranium, carolina	*Geranium carolinianum*
Goldenrod	*Solidago sp.*
Groundsel, common	*Senecio vulgaris*
Henbit	*Lamium amplexicaule*
Knotweed, erect	*Polygonum erectum*
Marestail/horseweed	*Conyza canadensis*
Morningglory	*Ipomoea sp.*
Mustard, hill	*Bunias orientalis*
Mustard, wild	*Sinapis arvensis*
Pigweed, spiny	*Amaranthus spinosus*
Plantain, buckhorn	*Plantago lanceolata*
Rocket, London	*Sisymbrium irio*
Sesbania, hemp	*Sesbania exaltata*
Shepherd's purse	*Capsella bursa-pastoris*
Sicklepod	*Cassia obtusifolia*
Sida, prickly	*Sida spinosa*
Sowthistle, annual	*Sonchus oleraceus*
Speedwell, common	*Veronica officinalis*
Spikeweed, common	*Hemizonia pungens*
Sunflower, common	*Helianthus annuus*
Teasel, wild	*Dipsacus fullonum*
Thistle, musk	*Carduus nutans*
Velvetleaf	*Abutilon theophrasti*
Vetch, hairy	*Vicia villosa*

GRASSES

Barley, foxtail	*Hordeum jubatum*
Barley, little	*Hordeum pusillum*
Barnyardgrass	*Echinochloa crus-galli*
Bluegrass, annual	*Poa annua*
Brome, Japanese	*Bromus japonicus*
Foxtails (except green)	*Setaria sp.*
Goatgrass, jointed	*Aegilops cylindrical*
Medusahead	*Taeniatherum caput-medusae*
Oats, wild	*Avena fatua*
Rye (volunteer)	*Secale cereale*
Ryegrass, annual	*Lolium sp.*
Signalgrass, broadleaf	*Brachiaria platyphylla*
Wheat (volunteer)	*Triticum aestivum*
Witchgrass	*Panicum capillare*

USE PRECAUTIONS AND RESTRICTIONS
RANGELAND RESTORATION

- Do not graze treated sites or cut for forage or hay for a minimum of 1 year after application. Allow newly emerged grasses sufficient time to become established prior to any grazing. Where practical, fencing or other measures are to be used to prevent early grazing of re-established sites to help promote active grass restoration.
- In order to reduce the potential for off-site movement of DuPont™ LANDMARK® XP from wind or water related soil erosion do not burn, disk, or otherwise disturb treated sites between the time of application and reseeding or reestablishment of native grasses.

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 produce agricultural plants on farms, forests, nurseries, or greenhouses. Use on noncrop sites and turf (unimproved) are not within the scope of the Worker Protection Standard.

Do not enter or allow worker entry into treated areas until sprays have dried.

NON-AGRICULTURAL SITES

APPLICATION INFORMATION

LANDMARK® XP is labeled for general weed control on private, public and military lands as follows: nonagricultural areas (including airports, highway, railroad and utility rights-of-way (ROW), sewage disposal areas); uncultivated agricultural areas--non-crop producing (including farmyards, fuel storage areas, fence rows, barrier strips); industrial sites--outdoor (including lumberyards, pipeline and tank farms).

LANDMARK® XP is not labeled for use on recreation areas, sod farms or for direct application to paved areas (surfaces).

Apply to non-agricultural areas by ground only, with the exception of rights-of-way which may be treated by helicopter. Applications may also be made as otherwise directed by Supplemental or Special Local Need Labeling.

APPLICATION TIMING

Apply LANDMARK® XP as a preemergence or early postemergence spray before or during the rainy season when weeds are actively germinating or growing.

APPLICATION RATES

Apply LANDMARK® XP at 4.5 to 8.0 ounces of product per year. When applied at lower rates, LANDMARK® XP provides short-term control of weeds listed; when applied at higher rates, weed control is extended.

Note: Use the higher level of listed dosage ranges under the following conditions:

- heavy weed growth
- soils with high organic matter
- high soil moisture areas, such as along road edges or railroad shoulders

WEEDS CONTROLLED

LANDMARK® XP effectively controls the following broadleaf weeds and grasses when applied at the rates shown.

When applied at 4.5 ounces of product per acre, LANDMARK® XP controls the following weeds:

BROADLEAF WEEDS

Annual sowthistle	*Sonchus oleraceus*
Bedstraw	*Galium sp.*
Black medic	*Medicago lupulina*
Black mustard	*Brassica nigra*
Blue mustard	*Chorispora tenella*
Bouncingbet	*Saponaria officinalis*
Buckhorn plantain	*Plantago lanceolata*
Burclover	*Medicago sp.*
Buttercup	*Petasites hybridus*
Canada thistle	*Cirsium arvense*
Carolina geranium	*Geranium carolinianum*
Clover	*Trifolium sp.*
Cocklebur	*Xanthium sp.*
Common chickweed	*Stellaria media*
Common groundsel	*Senecio vulgaris*
Common lambsquarter	*Chenopodium album*
Common mallow	*Malva neglecta*
Common purslane	*Portulaca oleracea*
Common ragweed	*Ambrosia elatior*
Common speedwell	*Veronica officinalis*
Common spikeweed	*Hemizonia pungens*
Common sunflower	*Helianthus annuus*
Common tarweed	*Madia sp.*
Common vetch	*Vicia sativa*
Common yarrow	*Achillea millefolium*
Cow cockle	*Vaccaria pyramidata*
Crimson clover	*Trifolium incarnatum*
Curly dock	*Rumex crispus*
Cutleaf eveningprimrose	*Oenothera laciniata*
Dandelion	*Taraxacum officinale*
Dogfennel	*Eupatorium capillifolium*
Dyer's woad	*Isatis tinctoria*
Erect knotweed	*Polygonum erectum*
False chamomile	*Matricaria maritima*
Fiddleneck	*Amsinckia lycopsoides*
Field pennycress	*Thlaspi arvense*
Fireweed	*Epilobium angustifolium*
Fleabane	*Conyza sp.*
Flixweed	*Descurainia sophia*
Goldenrod	*Solidago sp.*
Hairy vetch	*Vicia villosa*
Hemp	*Cannabis sp.*
Hemp sesbania	*Sesbania exaltata*
Henbit	*Lamium amplexicaule*
Hill mustard	*Bunias orientalis*
Hoary cress (whitetop)	*Cardaria draba*
Houndstongue	*Cynoglossum officinale*
London rocket	*Sisymbrium irio*
Marestail/horseweed	*Conyza canadensis*
Musk thistle	*Carduus nutans*
Ox-eye daisy	*Chrysanthemum leucanthemum*
Pepperweed	*Lepidium sp.*
Perennial pepperweed	*Lepidium latifolium*
Prairie groundsel	*Senecio plattensis*
Prickly coontail	*Ceratophyllum echinatum*
Prickly sida	*Sida spinosa*
Prostrate knotweed	*Polygonum aviculare*
Puncturevine	*Tribulus terrestris*
Redroot pigweed	*Amaranthus retroflexus*
Redstem filaree	*Erodium cicutarium*
Salsify	*Tragopogon sp.*
Scotch thistle	*Onopordum acanthium*
Seaside heliotrope	*Heliotropium curassavicum*
Shepherd's purse	*Capsella bursa-pastoris*
Sicklepod	*Cassia obtusifolia*
Smallseed falseflax	*Camelina microcarpa*
Spanish needles	*Bidens bipinnata*
Spiny pigweed	*Amaranthus spinosus*
Spreading orach	*Atriplex patula*
Sweetclover	*Melilotus sp.*
Tansymustard	*Descurainia pinnata*
Tansy ragwort	*Senecio jacobaea*
Tumble mustard (Jim Hill)	*Sisymbrium altissimum*
Tumble pigweed	*Amaranthus albus*
Turkey mullein	*Eremocarpus setigerus*
Velvetleaf	*Abutilon theophrasti*
Whitestem filaree	*Erodium moschatum*
Whitetop	*Cardaria sp.*
Wild buckwheat	*Polygonum convolvulus*
Wild carrot	*Daucus carota*
Wild garlic	*Allium vineale*
Wild parsnip	*Pastinaca sativa*
Wild teasel	*Dipsacus fullonum*

* Certain biotypes of marestail are less sensitive to DuPont™ LANDMARK® XP and may be controlled with a tank mixture of diuron, DuPont™ HYVAR® X or DuPont™ KROVAR® I DF.

GRASSES (UP TO 6-12" TALL)

Alta fescue	*Festuca arundinacea*
Annual bluegrass	*Poa annua*
Annual ryegrass	*Lolium sp.*
Bahiagrass	*Paspalum notatum*
Barnyardgrass	*Echinochloa crus-galli*
Bulbous bluegrass	*Poa bulbosa*
Cheat	*Bromus secalinus*
Crabgrass	*Digitaria sp.*
Downy brome (cheatgrass)	*Bromus tectorum*
Foxtails (except green)	*Setaria sp.*
Foxtail barley	*Hordeum jubatum*
Foxtail fescue	*Vulpia myuros*
Italian ryegrass	*Lolium multiflorum*
Itchgrass	*Rottboellia cochinchinensis*
Jointed goatgrass	*Aegilops cylindrica*
Little barley	*Hordeum pusillum*
Medusahead	*Taeniatherum caput-medusae*
Red brome	*Bromus rubens*
Red fescue	*Festuca rubra*
Ripgut brome	*Bromus diandrus*
Rye (volunteer)	*Secale cereale*
Seashore saltgrass	*Distichlis spicata*
Signalgrass (broadleaf)	*Brachiaria platyphylla*
Sprangletop (annual)	*Leptochloa sp.*
Wheat (volunteer)	*Triticum aestivum*
Wild oats	*Avena fatua*
Witchgrass	*Panicum capillare*
Yellow indiangrass	*Sorghastrum nutans*

When applied at 8.0 ounces of product per acre, LANDMARK® XP also controls the following additional weeds:

BROADLEAF WEEDS

Aster	*Aster sp.*
Carpetweed	*Mollugo verticillata*
Catsear	*Hypocheris sp.*
Common cinquefoil	*Potentilla canadensis*
Common knapweed (black)	*Centaurea nigra*
Common mullein	*Verbascum thapsus*
Horestail	*Equisetum sp.*
Morningglory	*Ipomoea sp.*
Russian knapweed	*Acroptilon repens*
St. Johnswort	*Hypericum perforatum*
White snakeroot	*Eupatorium rugosum*
Yellow rocket	*Barbarea vulgaris*
Yellow starthistle	*Centaurea solstitalis*

GRASSES

Broadleaf panicum	*Panicum novemnerve*
Green foxtail	*Setaria viridis*
Johnsongrass	*Sorghum halepense*
Junglerice	*Echinochloa colonum*

SPECIFIC WEED PROBLEMS NON-CROP SITES

Kochia, Russian Thistle, and Prickly Lettuce

Since biotypes of kochia, Russian thistle, and prickly lettuce are known to be resistant to LANDMARK® XP, tank mixture combinations with herbicides having different modes of action, such as DuPont™ KARMEX® XP, HYVAR® X or KROVAR® I DF, must be used. In areas where resistance is

known to exist, these weeds must be treated postemergence with other herbicides registered for their control, such as 2,4-D or dicamba.

Kochia and Russian Thistle - Apply a tank mixture of DuPont™ LANDMARK® XP herbicide at 4.5 ounces per acre plus DuPont™ KARMEX® XP at 10 pounds per acre or DIREX® 4L at 2 gallons per acre.

Do not tank mix LANDMARK® XP with DuPont™ HYVAR® X-L herbicide.

UNDER ASPHALT AND CONCRETE PAVEMENT

APPLICATION INFORMATION

LANDMARK® XP may be used to control weeds under asphalt and concrete pavement, such as that used in parking lots, highway shoulders, median strips, roadways, and other non-crop sites. LANDMARK® XP may not control tubers, rhizomes, woody vegetation such as small trees, brush or woody vines.

LANDMARK® XP must only be used in an area that has been prepared according to good construction practices. Use sufficient water to ensure uniform coverage.

APPLICATION TIMING

Apply LANDMARK® XP immediately before paving to avoid lateral movement of the herbicide as a result of soil movement due to weather or mechanical operations.

APPLICATION RATE

Apply LANDMARK® XP at 8.0 ounces of product per acre.

USE PRECAUTIONS AND RESTRICTIONS UNDER ASPHALT AND CONCRETE

- Do not use LANDMARK® XP under pavement in residential properties such as driveways, or in recreational areas, including jogging or bike paths, tennis courts, or golf cart paths.

INDUSTRIAL TURFGRASS

BERMUDAGRASS AND CENTIPEDEGRASS RELEASE

APPLICATION INFORMATION

LANDMARK® XP may be used to control weeds in industrial turfgrass, roadsides, or other non-crop sites where the turfgrass is well established as a ground cover. Applications may temporarily suppress turfgrass growth and inhibit seedhead formation (chemical mowing).

APPLICATION TIMING AND RATE

Apply LANDMARK® XP at 0.9 ounces of product per acre to established grasses after they have broken dormancy, usually 30 days after initial spring flush. If an additional application is necessary, apply LANDMARK® XP again at 0.9 ounces of product per acre during late spring to early summer. On established weeds, apply LANDMARK® XP one to two weeks after mowing for the best results.

LANDMARK® XP may also be applied in late fall or early winter.

WEEDS CONTROLLED

When applied at 0.9 ounces of product per acre, LANDMARK® XP controls the following weeds:

Annual bluegrass	*Poa annua*
Black mustard	*Brassica nigra*
Bulbous bluegrass	*Poa bulbosa*
Cheat	*Bromus secalinus*
Cocklebur	*Xanthium sp.*
Common chickweed	*Stellaria media*
Common lambsquarter	*Chenopodium album*
Common purslane	*Portulaca oleracea*
Common tarweed	*Madia sp.*
Common yarrow	*Achillea millefolium*
Dandelion	*Taraxacum officinale*
False chamomile	*Matricaria maritima*
Field pennycress	*Thlaspi arvense*
Fleabane	*Conyza sp.*
Flixweed	*Descurainia sophia*
Hill mustard	*Bunias orientalis*
Jointed goatgrass	*Aegilops cylindrica*
London rocket	*Sisymbrium irio*
Marestail/horseweed*	*Conyza canadensis*
Redroot pigweed	*Amaranthus retroflexus*
Shepherd's purse	*Capsella bursa-pastoris*
Smallseed falseflax	*Camelina microcarpa*
Tansymustard	*Descurainia pinnata*
Tumble mustard (Jim Hill)	*Sisymbrium altissimum*
Velvetleaf	*Abutilon theophrasti*
Wheat (volunteer)	*Triticum aestivum*
Wild mustard	*Sinapis arvensis*
Wild oats	*Avena fatua*

USE PRECAUTIONS AND RESTRICTIONS INDUSTRIAL TURFGRASS

- Excessive injury to turfgrass may result if a surfactant is used with LANDMARK® XP applications made to actively growing turfgrass. The user assumes all responsibility for turfgrass injury if a surfactant is used with LANDMARK® XP treatments applied to actively growing turfgrass.
- LANDMARK® XP may temporarily discolor or cause top kill of turfgrass. Applications made while turfgrass is dormant may delay green-up in the spring.
- LANDMARK® XP application on turfgrass that is under stress from drought, insects, disease, cold temperatures or late spring frost, may result in injury.
- Application of LANDMARK® XP to turfgrass less than 1 year old may cause unacceptable turf injury.
- For broadcast applications, do not exceed 2 applications of 0.9 ounces of product per acre LANDMARK® XP within a 12 month period.
- Annual retreatments may reduce turfgrass vigor.

NON-CROPLAND RESTORATION

APPLICATION INFORMATION

LANDMARK® XP may be used to control downy brome (cheatgrass), cheat, jointed goatgrass, medusahead and certain broadleaf weeds on non-agricultural sites, to allow for the restoration of desirable perennial grass species.

Note: In order to reduce the potential for off-site movement of LANDMARK® XP from wind or water related soil erosion do not burn, disk, or otherwise disturb treated sites between the time of application and reseeding or reestablishment of native grasses.

APPLICATION TIMING AND RATES

Apply DuPont™ LANDMARK® XP at 0.75 to 2.25 ounces of product per acre in the fall, within 6 weeks before the expected date when the soil freezes, or in the Spring within 6 weeks after the soil thaws. When applied at lower rates, LANDMARK® XP provides short-term control of weeds listed; when applied at higher rates, weed control spectrum is broadened and extended.

When applied at 0.75 to 2.25 ounces of product per acre, LANDMARK® XP controls the following weeds:

BROADLEAF WEEDS

Blue mustard	*Chorispora tenella*
Common lambsquarter	*Chenopodium album*
Common purslane	*Portulaca oleracea*
Common tarweed	*Madia sp.*
Common yarrow	*Archillea millefolium*
False chamomile	*Matricaria maritima*
Field pennycress	*Thlaspi arvense*
Fleabane	*Conyza sp.*
Redroot pigweed	*Amaranthus retroflexus*
Smallseed falseflax	*Camelina microcarpa*
Tansymustard	*Descurainia pinnata*
Tumble mustard (Jim Hill)	*Sisymbrium altissimum*

GRASSES

Bulbous bluegrass	*Poa bulbosa*
Cheat	*Bromus secalinus*
Downy brome (cheatgrass)	*Bromus tectorum*

When applied at 1.5 to 2.25 ounces of product per acre, LANDMARK® XP controls the following additional weeds:

BROADLEAF WEEDS

Annual sowthistle	*Sonchus oleraceus*
Buckhorn plantain	*Plantago lanceolata*
Buttercup	*Petasites hybridus*
Carolina geranium	*Geranium carolinianum*
Clover	*Trifolium sp.*
Cocklebur	*Xanthium sp.*
Common chickweed	*Stellaria media*
Common groundsel	*Senecio vulgaris*
Common speedwell	*Veronica officinalis*
Common spikeweed	*Hemizonia pungens*
Common sunflower	*Helianthus annuus*
Cow cockle	*Vaccaria pyramidata*
Cutleaf eveningprimrose	*Oenothera laciniata*
Dandelion	*Taraxacum officinale*
Dyer's woad	*Isatis tinctoria*
Erect knotweed	*Polygonum erectum*
Fiddleneck	*Amsinckia lycopsoides*
Flixweed	*Descurainia sophia*
Goldenrod	*Solidago sp.*
Hairy vetch	*Vicia villosa*
Hemp sesbania	*Sesbania exaltata*
Henbit	*Lamium amplexicaule*
Hill mustard	*Bunias orientalis*
London rocket	*Sisymbrium irio*
Marestail/horseweed	*Conyza canadensis*
Morningglory	*Ipomoea sp.*
Musk thistle	*Carduus nutans*
Prickly coontail	*Ceratophyllum echinatum*
Prickly sida	*Sida spinosa*
Shepherd's purse	*Capsella bursa-pastoris*
Sicklepod	*Cassia obtusifolia*
Spiny pigweed	*Amaranthus spinosus*
Velvetleaf	*Abutilon theophrasti*
Whitestem filaree	*Erodium moschatum*
Wild buckwheat	*Polygonum convolvulus*
Wild carrot	*Daucus carota*
Wild mustard	*Sinapis arvensis*
Wild teasel	*Dipsacus fullonum*

GRASSES

Annual bluegrass	*Poa annua*
Annual ryegrass	*Lolium sp.*
Barnyardgrass	*Echinochloa crus-galli*
Foxtails (except green)	*Setaria sp.*
Foxtail barley	*Hordeum jubatum*
Japanese brome	*Bromus japonicus*
Jointed goatgrass	*Aegilops cylindrical*
Little barley	*Hordeum pusillum*
Medusahead	*Taeniatherum caput-medusae*
Rye (volunteer)	*Secale cereale*
Signalgrass (broadleaf)	*Brachiaria platyphylla*
Wheat (volunteer)	*Triticum aestivum*
Wild oats	*Avena fatua*
Witchgrass	*Panicum capillare*

When applied at 2.25 ounces of product per acre, LANDMARK® XP controls the following additional weeds:

BROADLEAF WEEDS

Bedstraw	*Galium sp.*
Black mustard	*Brassica nigra*
Common vetch	*Vicia sativa*
Hemp	*Cannabis sp.*
Hoary cress (whitetop)	*Cardaria draba*
Pepperweed	*Lepidium sp.*
Prairie groundsel	*Senecio plattensis*
Salsify	*Tragopogon sp.*
Spanish needles	*Bidens bipinnata*
Spreading orach	*Atriplex patula*
Sweet clover	*Melilotus sp.*
Tansy ragwort	*Senecio jacobaea*
Tumble pigweed	*Amaranthus albus*
Wild garlic	*Allium vineale*

GRASSES

Crabgrass	*Digitaria sp.*
Foxtail fescue	*Vulpia myuros*
Green foxtail	*Setaria viridis*
Red brome	*Bromus rubens*
Ripgut brome	*Bromus diandrus*

GRASS REPLANT INTERVALS

Following a treatment with LANDMARK® XP at use rates up to 2.25 ounces of product per acre, the following grasses may be replanted at least 3 months after a spring application:

Green needlegrass	*Stipa viridula*
Meadow brome	*Bromus erectus*
Russian wild rye	*Elymus sp.*
Switchgrass	*Panicum virgatum*

The following grasses may be replanted at least 6 months after a spring application:

Alta fescue	*Festuca arundinacea*
Meadow foxtail	*Alopecurus pratensis*
Orchardgrass	*Dactylis glomerata*
Smooth brome	*Bromus invermis*
Sheep fescue	*Festuca ovina*
Western wheatgrass	*Agropyron smithii*

The intervals, 3 and 6 months, are for soils with a pH of less than 7.5 and only for applications made in the spring. Soils having a pH greater than 7.5 will require longer replant intervals.

Because LANDMARK® XP degradation is slowed by cold or frozen soils, applications made in the fall must consider the intervals as beginning in the spring following treatment.

Testing has indicated that there is considerable variation in response among species and types of grasses when seeded into areas treated with LANDMARK® XP. If species other than those listed above are to be planted into areas treated

with DuPont™ LANDMARK® XP either a field bioassay must be performed, or previous experience may be used to determine the feasibility of replanting treated areas.

To conduct a field bioassay, grow to maturity test strips of the grass(es) you plan to grow the following year. The test strips must cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the grass(es) grown in the test strips.

ADDITIONAL INSTRUCTIONS, PRECAUTIONS AND RESTRICTIONS FOR AGRICULTURAL AND NON-AGRICULTURAL USES

- Injury to or loss of desirable species may occur if equipment is drained or flushed 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.
- Treatment of powdery, dry soil or light, sandy soil when there is little likelihood of rainfall soon after treatment may result in off target movement and possible damage to susceptible crops when soil particles are moved by wind or water. Injury to crops may result if treated soil is washed, blown, or moved onto land used to produce crops. Exposure to LANDMARK® XP may injure or kill most crops. Injury may be more severe when the crops are irrigated. Do not apply LANDMARK® XP when these conditions are identified and powdery, dry soil or light or sandy soil are known to be prevalent in the area to be treated.
- Applications made where runoff water flows onto agricultural land may injure crops. Applications made during periods of intense rainfall, to soils saturated with water, surfaces paved with materials such as asphalt or concrete, or soils through which rainfall will not readily penetrate may result in runoff and movement of LANDMARK® XP.
- Do not treat frozen soil.
- Leave treated soil undisturbed to reduce the potential for LANDMARK® XP movement by soil erosion due to wind or water.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas.
- Keep from contact with fertilizers, insecticides, fungicides, and seeds.
- Do not apply in or on irrigation ditches or canals including their outer banks.
- Do not apply through any type of irrigation system.
- Do not use this product in the following counties of Colorado: Saguache, Rio Grande, Alamosa, Costilla and Conejos.
- If non-crop sites treated with LANDMARK® XP are to be converted to a food, feed, or fiber agricultural crop, or to a horticultural crop, do not plant the treated sites for at least one year after the LANDMARK® XP application. A field bioassay must then be completed before planting to crops.

FIELD BIOASSAY

To conduct a field bioassay, grow to maturity test strips of the crop(s) you plan to grow the following year. The test strips should cross the entire field including knolls and low areas. Crop response to the bioassay will indicate whether or not to plant the crops(s) grown in the test strips. In the case of suspected offsite movement of LANDMARK® XP to cropland, soil samples may be quantitatively analyzed for LANDMARK® XP or any other herbicide which could be having an adverse effect on the crop, in addition to conducting the above-described bioassay.

TANK MIX COMBINATIONS

Combination with other herbicides broadens the spectrum of weeds controlled. In addition, total vegetation control can be achieved with higher rates of LANDMARK® XP plus residual type companion herbicides. To improve postemergence control of weeds, add surfactant at 0.25% by volume or at the manufacturer's labeled rate based on spray area.

LANDMARK® XP may be applied with the listed rates of other herbicides registered for this use. For application method and other use specifications, use the most restrictive directions for the intended combination.

Do not tank mix LANDMARK® XP with DuPont™ HYVAR® X-L herbicide.

SPRAY EQUIPMENT

Low rates of LANDMARK® XP can kill or severely injure most crops. Following a LANDMARK® XP application, the use of spray equipment to apply other pesticides to crops on which LANDMARK® XP or its active ingredients are not registered may result in their damage. The most effective way to reduce this crop damage potential is to use dedicated mixing and application equipment.

APPLICATION

Use a sufficient volume of water to ensure thorough coverage when applying LANDMARK® XP as a broadcast or directed spray. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern. Be sure the sprayer is calibrated before use. Avoid overlapping and shut off spray booms while starting, turning, slowing, or stoping to avoid injury to desired species.

MIXING INSTRUCTIONS

1. Fill spray tank 1/2 full of water.
2. With the agitator running, add the proper amount of LANDMARK® XP.
3. If using a companion product, add the directed amount.
4. For postemergent applications, add the proper amount of spray adjuvants.
5. Add the remaining water.
6. Agitate the spray tank thoroughly.

DuPont™ LANDMARK® XP spray preparations are stable if they are pH neutral or alkaline and stored at or below 100° F.

SPRAYER CLEANUP

Thoroughly clean all mixing and spray equipment following applications of LANDMARK® XP as follows:

1. Drain tank; thoroughly rinse spray tanks, boom, and hoses with clean water.
2. Fill the tank with clean water and 1 gal of household ammonia (contains 3% active) for every 100 gal 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-clean aerial spray tanks before performing the above cleanout procedure to facilitate the removal of any caked deposits.
3. When LANDMARK® XP is tank mixed with other pesticides, all required cleanout procedures must be examined and the most rigorous procedure 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 drift management strategy is to apply the largest droplets which are consistent with pest control objectives. 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.

A droplet size classification system describes the range of droplet sizes produced by spray nozzles. The American Society of Agricultural and Biological Engineers (ASABE) provide a Standard that describes droplet size spectrum categories defined by a number of reference nozzles (fine, coarse, etc.). Droplet spectra resulting from the use of a specific nozzle may also be described in terms of volume mean diameter (VMD). Coarser droplet size spectra have larger VMD's and lower drift potential.

CONTROLLING DROPLET SIZE - GROUND TECHNIQUES

- **Nozzle Type** - Select a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. The use of low-drift nozzles will reduce drift potential.
- **Pressure** - The lowest spray pressures recommended for the nozzle produce the largest droplets. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, using a higher-capacity nozzle instead of increasing pressure results in the coarsest droplet spectrum.
- **Flow Rate/Orifice Size** - Using the highest flow rate nozzles (largest orifice) that are consistent with pest control objectives reduces the potential for spray drift. Nozzles with higher rated flows produce coarser droplet spectra.

CONTROLLING DROPLET SIZE - AIRCRAFT

- **Nozzle Type** - Solid stream, or other low drift nozzles produce the coarsest droplet spectra.
- **Number of Nozzles** - Using the minimum number of nozzles with the highest flow rate that provide uniform coverage will produce a coarser droplet spectrum
- **Nozzle Orientation** - Orienting nozzles in a manner that minimizes the effects of air shear will produce the coarsest droplet spectra. For some nozzles such as solid stream, pointing the nozzles straight back parallel to the airstream will produce a coarser droplet spectrum than other orientations.
- **Pressure** – Selecting the pressure that produces the coarsest droplet spectrum for a particular nozzle and airspeed reduces spray drift potential. For some nozzle types such as solid streams, lower pressures can produce finer droplet spectra and increase drift potential

BOOM LENGTH (AIRCRAFT) AND APPLICATION HEIGHT

- **Boom Length (aircraft)** - Using shorter booms decreases drift potential. Boom lengths are expressed as a percentage of an aircraft's wingspan or a helicopter's rotor blade diameter. Shorter boom length and proper positioning can minimize drift caused by wingtip or rotor vortices.
- **Application Height (aircraft)** - Applications made at the lowest height that are consistent with pest control objectives and the safe operation of the aircraft will reduce the potential for spray drift.
- **Application Height (ground)** - Applications made at the lowest height consistent with pest control objectives, and that allow the applicator to keep the boom level with the application site and minimize bounce, will reduce the exposure of spray droplets to evaporation and wind, and reduce spray drift potential.

WIND

Drift potential is lowest when applications are made in light to gentle sustained winds (2-10 mph), which are blowing in a constant direction. Many factors, including droplet size and equipment type also determine drift potential at any given wind speed. AVOID GUSTY OR WINDLESS CONDITIONS.

Local terrain can also influence wind patterns. Every applicator is expected to be familiar with local wind patterns and how they affect spray drift.

TEMPERATURE AND HUMIDITY

Setting up equipment to produce larger droplets to compensate for droplet evaporation can reduce spray drift potential. Droplet evaporation is most severe when conditions are both hot and dry.

SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which may cause 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. Mist or fog may indicate the presence of an inversion in humid areas. Inversions may also be identified by producing smoke and observing its behavior. Smoke that remains close to the ground, or moves laterally in a concentrated cloud under low wind conditions indicates a surface inversion. 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 minimizing drift potential, and not interfering with uniform deposition of the product.

AIR ASSISTED (AIR BLAST) FIELD CROP SPRAYERS

Air assisted field crop sprayers carry droplets to the target via a downward directed air stream. Some may reduce the potential for drift, but if a sprayer is unsuitable for the application and/or set up improperly, high drift potential can result. It is the responsibility of the applicator to determine that a sprayer is suitable for the intended application, that it is configured properly, and that drift potential has been minimized.

Note: Air assisted field sprayers can affect product performance by affecting spray coverage and canopy penetration. Read the specific crop use and application equipment instructions to determine if an air assisted field crop sprayer can be used.

SENSITIVE AREAS

Making applications when there is a sustained wind moving away from adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is an effective way to minimize the effect of spray drift.

DRIFT CONTROL ADDITIVIES

Using product compatible drift control additives can reduce drift potential. When a drift control additive is used, read and carefully observe cautionary statements and all other information on the additive's label. If using an additive that increases viscosity, ensure that the nozzles and other application equipment will function properly with a viscous spray solution. Preferred drift control additives have been certified by the Chemical Producers and Distributors Association (CPDA).

SPRAY DRIFT RESTRICTIONS

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

AERIAL APPLICATIONS

- Use a nozzle type according to manufacturers specifications that is designed for the intended application and produces a Coarse to Very Coarse or greater droplet size spectrum (ASABE S572-1) under application conditions.
- Do not exceed the nozzle manufacturer's recommended pressures.
- Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
- Applicators are required to use swath displacement, and displacement distance must increase with increasing drift potential.
- The boom length must not exceed 75% of the wing span or 90% of the rotor blade diameter.
- Applications with wind speeds greater than 10 miles per hour are prohibited.
- Applications into temperature inversions are prohibited.
- Make applications no higher than 10 feet above the top of the target vegetation, unless a greater height is required for aircraft safety

GROUND APPLICATIONS

- Use a nozzle type according to manufacturers specifications that is designed for the intended application and produces a Coarse to Very Coarse or greater droplet size spectrum (ASABE S572-1) under application conditions.
- Do not exceed the nozzle manufacturer's recommended pressures.
- Applications with wind speeds greater than 10 miles per hour are prohibited.
- Applications into temperature inversions are prohibited
- Do not apply with a nozzle height greater than 4 feet above the ground or target vegetation unless necessitated by the application equipment.

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 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™ LANDMARK® XP containing sulfometuron methyl and chlorsulfuron 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 LANDMARK® XP containing sulfometuron methyl and chlorsulfuron 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 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 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 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.

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

D - 1449 072811

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. 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.

TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, DUPONT MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS OR OF MERCHANTABILITY OR ANY OTHER EXPRESS OR IMPLIED WARRANTY. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, 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. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, 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.

To the extent consistent with applicable law that allows such requirement, 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 [1-888-638-7668]
Internet address: http://cropprotection.dupont.com/