

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Reg # 55947-78

PM-23

18 17

DEC 11 1990

Dr. James S. Fickle
 Sandr Crop Protection
 1300 East Toughey Avenue
 Des Plaines, IL 60018

Dear Dr. Fickle:

Subject: Label Revision(s)
 PATROL - For use on field grown
 nursery and non-cropland
 EPA Registration No. 55947-78
 Your submission dated October 8, 1990

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable provided that you:

A. Make the labeling correction(s) listed below before you release the product for shipment bearing the amended labeling:

1. On page (6) under "Strip or Band Treatment," rewrite the formula properly to read:

Width of strip in feet	X	Pounds per acre for broadcast treatment	=	Pounds per acre for strip treatment
Distance between rows in feet				

2. On page (8) for the Broadleaf Weed, Tumble Mustard correct the spelling of the Latin name to read Sisymbrium altissimum.

CONCURRENCES

SYMBOL	117505C						
SURNAME	S. Khettar						
DATE	12/11/90						

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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- 2 -

A stamped copy of the label is enclosed for your records. Please submit three (3) copies of final printed labeling for the subject product.

Sincerely yours,

Joanne I. Miller
Acting Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

1

CONCURRENCES

SYMBOL	H7505C							
SURNAME	S. Khattar							
DATE	12/11/90							

3 of 17

PATROL®

**Herbicide for control of grass and broadleaf weeds in
field grown nursery stock and non-cropland.**

Not Registered for Use in California

ACTIVE INGREDIENT:

**norflurazon [4-chloro-5-(methylamino)-
2-(alpha, alpha, alpha-trifluoro-m-tolyl)-
3(2H)-pyridazinone].....80.0%**
INERT INGREDIENTS.....20.0%
100.0%

NET WEIGHT: 5 POUNDS

KEEP OUT OF REACH OF CHILDREN

CAUTION

STATEMENT OF PRACTICAL TREATMENT

If in Eyes: Flush eyes with plenty of water. Get medical attention if irritation persists.

If on Skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

If Swallowed: Call a physician or poison control center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

See Additional Precautionary Statement on Side/Back Panel.

**ACCEPTED
with COMMENTS
EPA Letter Dated:**

**E.P.A. reg. No. 55947-78
E.P.A. Est. No. 39578-TX-1**

DEC 13 1990

**Sandoz Crop Protection Corporation
1300 East Touhy Avenue
Des Plaines, Illinois 60018**

**Under the Federal Insecticide,
Fungicide, and Rodenticide Act
as amended, for the purpose of
registered under EPA Reg. No.**

PATROL® is a Registered Trademark of Sandoz Ltd.

55947-78

PATROL (10/4/90)

PRECAUTIONARY STATEMENTS

**HAZARDS TO HUMANS
(& DOMESTIC ANIMALS)**

CAUTION

Harmful if swallowed or absorbed through the skin. Avoid contact with skin, eyes or clothing. In case of skin or eye contact, flush with plenty of water.

ENVIRONMENTAL HAZARDS

Do not apply directly to any body of water. Do not apply when weather conditions favor run-off or drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

STORAGE AND DISPOSAL

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

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

Container Disposal: Completely empty container into application equipment. Then dispose of empty container in a sanitary landfill or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

1 **GENERAL USE DIRECTIONS**

2
3 It is a violation of Federal law to use this product in a manner
4 inconsistent with its labeling.

5
6 Before applying PATROL, read all directions and precautions
7 appearing on the container label and this booklet. Failure to
8 follow all directions and precautions may result in unsatisfactory
9 weed control or crop injury.

10
11 **GENERAL INFORMATION**

12
13 PATROL is a soil active herbicide for control of certain grasses
14 and broadleaf weeds in field grown nursery stock and non-croplands.

15
16 PATROL must be moved into the weed seed germination zone to be
17 effective. If no rainfall occurs within four weeks after
18 application, the product must be activated by flood irrigation or
19 sprinkler irrigation. PATROL alone has no post-emergence activity
20 and will not control established weeds. Existing weeds must be
21 mechanically removed or controlled by using a suitable
22 postemergence herbicide.

23
24 Cover crops planted in treated areas must not be harvested, grazed
25 or fed to livestock.

26
27 **PRECAUTIONS FOR FIELD GROWN NURSERY STOCK**

28
29 1. To avoid plant injury -- do not apply until the fall following
30 the first full season of field growth after transplanting.

31
32 2. Use only on recommended plantings (see following list below)
33 grown on medium and fine textured soils. Do not use on coarse
34 textured soils.

35
36 3. Caution should be taken when application is made to field
37 grown plants when roots are planted bound (i.e. in synthetic
38 or burlap bags, etc.), so that herbicide does not channel
39 directly into the root zone.

40
41 4. Wait at least 12 months before planting cotton or crops listed
42 on this label. Other crops should not be planted in
43 previously treated soil until a bioassay or test planting with
44 the desired crop exhibits growth without chlorosis for 4
45 months after emergence.

46
47 5. Do not apply to erodible soils which may wash into the root
48 zone of sensitive plants.

DIRECTIONS FOR FIELD GROWN NURSERY STOCK APPLICATIONS

Apply PATROL before weeds emerge. If weeds have germinated prior to the application of PATROL, a contact or burndown herbicide must be used (see tank mix instructions below).

The soil should be settled and firm at the time of application.

Apply as a directed spray. Avoid contact with foliage. Make only one application per year.

Do not apply this product through any type of irrigation system, or contaminate irrigation ditches or water used for domestic purposes.

Apply the recommended rate of PATROL in 20 to 100 gallons of water per acre.

Equipment

PATROL should be applied using an accurately calibrated fixed boom sprayer. Filters with screen sizes of 50 mesh or larger should be used.

Mixing Instructions

Clean and calibrate the sprayer. Add PATROL to the spray tank already filled with the required volume of water. This will eliminate or minimize foaming. Maintain agitation while filling and spraying. If a by-pass line is used, discharge at the bottom of the tank to further minimize foaming.

Do not allow PATROL spray mixture to remain in the spray tank overnight, because settling will occur and resuspension will be difficult.

Tank Mix Recommendations for Field Grown Nursery Stock

Tank mix combinations may be desired for broader spectrum preemergence control or postemergence control of emerged weeds. PATROL may be tank mixed with other EPA registered herbicides in accordance with all directions, precautions, limitations, and recommendations on the label of the tank-mix partner, after a compatibility test has shown that no formulation compatibility problem(s) exist, see Compatibility Test section.

Note, PATROL may not always be compatible with formulations of DNA herbicides.

Products should be added to the spray tank in the following order:

1. Wettable powders and water dispersible granules: wettable powders should be premixed in a small amount of water; water

dispersible granules should be added during filling. Allow both to disperse before other products are added. The order of addition is not important.

2. Flowable liquids.

3. Emulsifiable concentrates.

4. Surfactants cleared for application to growing crops. Begin adding wettable powders, flowable liquids, emulsifiable concentrates and surfactants after the spray tank is 3/4 full. Continue agitation during the addition of all the materials and while filling and spraying.

Compatibility Test

Before mixing in the spray tank, it is advisable to test compatibility by mixing all components in a small container in proportionate quantities (see following table).

Amount of Herbicide to Add to One Pint of Spray Carrier
(Assuming Volume is 25 Gallons per Acre)

<u>HERBICIDE FORMULATIONS</u>	<u>RATE PER ACRE</u>	<u>LEVEL TEASPOONS</u>
Dry	1 lb.	1-1/2
Liquid	1 pt.	1/2

If herbicide(s) do not ball-up or form flakes, sludge, gels, oily films or layers, or other precipitates, then the tested spray mix is compatible. Usually incompatibility in any of the above described forms will occur within 5 minutes after mixing.

If components are incompatible, the use of a compatibility agent approved for agricultural use is recommended. Rerun the above COMPATIBILITY TEST with a suitable compatibility agent (1/4 teaspoon is equivalent to 2 pints per 100 gallons of spray carrier).

Broadcast Rates

Apply three (3) pounds of product per acre in the fall or spring.

Strip or Band Treatment

When applying a strip treatment of PATROL , the following formula may be used to calculate the amount per acre:

Width of strip	Pounds per	Pounds per
<u>in feet</u>	x	acre for =acre for
Distance between	broadcast	strip
rows in feet	treatment	treatment

1 RECOMMENDATIONS FOR FIELD GROWN NURSERY STOCK CROPS

2
3 Apply PATROL to these species of trees and shrubs as recommended
4 above:

5		
6	Apple	<u>Malus</u>
7	Blueberry	<u>Vaccinium</u>
8	Citrus	<u>Citrus</u>
9	Crabapple	<u>Malus</u>
10	Cranberry	<u>Viburnum</u>
11	Filbert	<u>Corylus</u>
12	Pear	<u>Pyrus</u>
13	Pecan	<u>Carya</u>
14	Walnut	<u>Juglans</u>
15	Birch, River	<u>Betula nigra</u>
16	Boxwood, Korean	<u>Buxus harlandii</u>
17	Cypress, Bald	<u>Taxodium distichum</u>
18	Dogwood	<u>Cornus</u>
19	Holly,	
20	Green Luster	<u>Ilex crenata</u> 'Green Luster'
21	East Palaka	<u>I. opaca</u> 'East Palaka' American
22	Greenleaf	<u>I. X</u> 'American Greenleaf'
23	Foster	<u>I. X</u> 'Fosteri'
24	Nellie Stevens	<u>I. X</u> 'Nellie Stevens'
25	Savannah	<u>I. X</u> 'Savannah'
26	Juniper,	
27	Andora Creeping	<u>Juniperus horizontalis</u> 'Plumosa'
28	Burki	<u>J. virginiana</u> 'Burki'
29	Fastigata	<u>J. fastigata</u>
30	Magnolia, Southern	<u>Magnolia grandiflora</u>
31	Maple, Red	<u>Acer rubrum</u>
32	Myrtle, Crepe	<u>Lagerstroemia indica</u>
33	Oak,	
34	Pin	<u>Quercus palustris</u>
35	Willow	<u>Q. phellos</u>
36	Poplar, Tulip	<u>Liriodendron tulipifera</u>
37	Redbud, Eastern	<u>Cercis canadensis</u>
38	Sycamore, American	<u>Platanus occidentalis</u>

39
40 'Fruit is not to be used for feed and/or human consumption.
41

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WEEDS CONTROLLED AT FIELD GROWN NURSERY STOCK RATES

PATROL at recommended rate controls the following weeds:

Broadleaf Weeds

Annual Bursage
Black Mustard
Camphorweed
Carolina Geranium
Carpetweed
Common Chickweed
Desert Rockpurslane (Redmaids)
Dogfennel
Falsedandelion
(Smooth Cat's Ear)
Fiddleneck
Filaree*
(Redstem and Whitestem)
Flixweed
Little Mallow (Cheeseweed)
London Rocket
Pigweeds
Pineapple Weed
Prickly Sida
Prostrate Spurge
Puncturevine
Purselane
Purple Cudweed
Russian Thistle
Shepherdspurse
Spurred Anoda
Stinging Nettle
Tropic Croton
Tumble Mustard
Velvetleaf
Virginia Pepperweed
Wild Buckwheat
Wild Geranium

Ambrosia acanthocarpa
Brassica nigra
Heterotheca subaxillaris
Geranium carolinianum
Mullugo verticillata
Stellaria media
Calandrinia ciliata
Eupatorium capillifolium
Pyrrhopappus carolinianus

Amsinckia intermedia
Erodium spp.

Descurainia sophia
Malva parviflora
Sisymbrium irio
Amaranthus spp.
Matricaria matricarioides
Sida spinosa
Euphorbia humistrata
Tribulus terrestris
Portulaca oleracea
Gnaphalium purpureum
Salsola iberica
Capsella bursa-pastoris
Anoda cristata
Urtica dioica
Croton glandulosus
Aayimbrium altissimum
Abutilon theophrasti
Lepidium virginicum
Polygonum convolulus
Geranium carolinianum

*Treat prior to germination and incorporate with water on medium soils ^a necessary for adequate control.

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1	Grass Weeds	
2		
3	Annual Bluegrass	<u>Poa annua</u>
4	Annual Sedge	<u>Cyperus compressus</u>
5	Bahiagrass (seedling)	<u>Paspalum notatum</u>
6	Barnyardgrass	<u>Echinochloa crus-galli</u>
7	Broadleaf Signalgrass	<u>Brachiaria platyphylla</u>
8	Brome	<u>Bromus</u> spp.
9	Cheat	<u>Bromus secalinus</u>
10	Crabgrass	<u>Digitaria</u> spp.
11	Downy Brome	<u>Bromus tectorum</u>
12	Fall Panicum	<u>Panicum dichotomiflorum</u>
13	Feather Fingergrass	<u>Chloris virgata</u>
14	Foxtails	<u>Setaria</u> spp.
15	Goosegrass	<u>Eleusine indica</u>
16	Italian Ryegrass	<u>Lolium multiflorum</u>
17	(Annual Ryegrass)	
18	Johnsongrass (seedling)	<u>Sorghum halepense</u>
19	Sandbur	<u>Cenchrus longispinus</u>
20	Sixweeks Grama	<u>Bouteloua barbata</u>
21	Southwestern Cupgrass	<u>Eriochloa gracilis</u>
22	Tall Fescue	<u>Festuca arundinacea</u>
23	Texas Panicum	<u>Panicum texanum</u>
24	Wild Barley	<u>Hordeum leporinum</u>
25	Wild Onion	<u>Allium canadense</u>
26	Witchgrass	<u>Panicum capillare</u>
27		
28		

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PATROL applied at recommended rates suppresses the following weeds:

1		
2		
3	Bermudagrass	<u>Cynodon dactylon</u>
4	Cocklebur	<u>Xanthium strumarium</u>
5	Coffee Senna	<u>Cassia occidentalis</u>
6	Common Lambsquarters	<u>Chenopodium album</u>
7	Common Ragweed	<u>Ambrosia artemisiifolia</u>
8	Florida pusley	<u>Richardia scabra</u>
9	Goldenrod	<u>Solidago altissima</u>
10	Groundsel	<u>Senecio vulgaris</u>
11	Hairy Fleabane	<u>Conyza bonariensis</u>
12	(Flax-leaved Fleabane)	
13	Hemp Sesbania	<u>Sesbania exaltata</u>
14	Henbit	<u>Lamium amplexicaule</u>
15	Horseweed (Marestail)	<u>Conyza canadensis</u>
16	Johnsongrass (rhizome)	<u>Sorghum halepense</u>
17	Kochia	<u>Kochia scoparia</u>
18	Lanceleaf Sage	<u>Salvia retroflexa</u>
19	Morningglory	<u>Ipomoea spp.</u>
20	Natalgrass (seedling)	<u>Rhynchelytrum repens</u>
21	Nutsedge	<u>Cyperus spp.</u>
22	Pangolagrass (seedling)	<u>Digitaria decumbens</u>
23	Orchardgrass	<u>Dactylis glomerata</u>
24	Pennsylvania Smartweed	<u>Polygonum pennsylvanicum</u>
25	Plaintains	<u>Plantago spp.</u>
26	(Bracted and Buckhorn)	
27	Poorjoe	<u>Diodia teres</u>
28	Quackgrass	<u>Agropyron repens</u>
29	Russian thistle	<u>Salsola iberica</u>
30	Silverleaf Nightshade	<u>Solanum elaeagnifolium</u>
31	(White Horsenettle)	
32	Sowthistle	<u>Sonchus oleracea</u>
33	Spotted Spurge	<u>Euphorbia maculata</u>
34	Vaseygrass	<u>Paspalum urvillei</u>
35	Wirestem Muhly (Western muhly)	<u>Muhlenbergia frondosa</u>
36		
37		

1 **DIRECTIONS FOR NON-CROPLANDS**

2
3 PATROL may be used for preemergence weed control in non-cropland
4 areas including: industrial sites, right-of-way (highway, pipeline,
5 railroad or utility), wasteland and other non-cropland areas. Do
6 not apply to erodible soils which may wash into the root zone of
7 sensitive plants.

8
9 Use PATROL at a rate of 2.5 to 5 pounds of product per treated acre
10 for non-cropland areas. Higher rates within the range should be
11 used for finer textured soils and where longer residual is desired.

12
13 Apply the recommended rate of PATROL in 20 to 100 gallons of water
14 per acre.

15
16 Since PATROL is a preemergence herbicide it must be applied to the
17 soil surface before weeds germinate. Existing weeds should be
18 mechanically removed or controlled with a suitable postemergence
19 herbicide. PATROL must be incorporated into the soil by rainfall or
20 irrigation within 4 weeks of application for best weed control.

21
22 **Tank mix recommendations for non-croplands**

23
24 Tank mix combinations may be desired for broader spectrum
25 preemergence control or postemergence control of emerged weeds or
26 brush. PATROL may be tank mixed with other EPA registered
27 herbicides in accordance with all directions, precautions,
28 limitations, and recommendations on the label of the tank-mix
29 partner, after a compatibility test has shown that no formulation
30 compatibility problem(s) exist, see Compatibility Test section.

31
32 Note, PATROL may not always be compatible with formulations of DNA
33 herbicides.
34

1 WEEDS CONTROLLED AND SUPPRESSED IN NON-CROPLANDS

2
3 PATROL at recommended rates controls the following weeds:

4
5 Broadleaf Weeds

6 Annual Sedge	<u>Cyperus compressus</u>
7 Black Mustard	<u>Brassica nigra</u>
8 Camphorweed	<u>Heterotheca subaxillaris</u>
9 Carolina Geranium	<u>Geranium carolinianum</u>
10 Common Chickweed	<u>Stellaria media</u>
11 Common Ragweed	<u>Ambrosia artemisiifolia</u>
12 Desert Rockpurslane (redmaids)	<u>Calandrinia ciliata</u>
13 Dogfennel	<u>Eupatorium capillifolium</u>
14 Falsedandelion	<u>Pyrrhopappus carolinianus</u>
15 (Smooth Cat's Ear)	
16 Fiddleneck	<u>Amsinckia intermedia</u>
17 Filaree*	<u>Erodium spp.</u>
18 (Redstem and Whitestem)	
19 Flixweed	<u>Descurainia sophia</u>
20 Goldenrod	<u>Solidago altissima</u>
21 Little Mallow (cheeseweed)	<u>Malva parviflora</u>
22 London Rocket	<u>Sisymbrium irio</u>
23 Pineapple Weed	<u>Matricaria matricarioides</u>
24 Prostrate Spurge	<u>Euphorbia humistrata</u>
25 Puncturevine	<u>Tribulus terrestris</u>
26 Purple Cudweed	<u>Gnaphalium purpureum</u>
27 Shepherdspurse	<u>Capsella bursa-pastoris</u>
28 Spreading Dayflower	<u>Commelina diffusa</u>
29 Stinging Nettle	<u>Urtica dioica</u>
30 Tumble Mustard	<u>Sysimbrium altissimum</u>
31 Virginia Pepperweed	<u>Lepidium virginicum</u>
32 Wild Buckwheat	<u>Polygonum convolvulus</u>

33
34 *Treat prior to germination and incorporate with water on medium soils is
35 necessary for adequate control.
36

1	Grass Weeds	
2	Annual Bluegrass	<u>Poa annua</u>
3	Bahiagrass (seedling)	<u>Paspalum notatum</u>
4	Barnyardgrass	<u>Echinochloa crus-galli</u>
5	Bearded Sprangletop	<u>Leptochloa fascicularis</u>
6	Broadleaf Signalgrass	<u>Brachiaria platyphylla</u>
7	Cheat	<u>Bromus secalinus</u>
8	Crabgrass	<u>Digitaria</u> spp.
9	Crowfootgrass (seedling)	<u>Dactyloctenium aegyptium</u>
10	Downy Brome	<u>Bromus tectorum</u>
11	Fall Panicum	<u>Panicum dichotomiflorum</u>
12	Feather Fingergrass	<u>Chloris virgata</u>
13	Foxtails	<u>Setaria</u> spp.
14	Goosegrass	<u>Eleusine indica</u>
15	Guineagrass (seedling)	<u>Panicum maximum</u>
16	Italian Ryegrass	<u>Lolium multiflorum</u>
17	(Annual Ryegrass)	
18	Johnsongrass (seedling)	<u>Sorghum halepense</u>
19	Natalgrass (seedling)	<u>Rhynchelytrum repens</u>
20	Pangolagrass (seedling)	<u>Digitaria decumbens</u>
21	Sandbur	<u>Cenchrus longispinus</u>
22	Sixweeks Grama	<u>Bouteloua barbata</u>
23	Southwestern Cupgrass	<u>Eriochloa gracilis</u>
24	Tall Fescue	<u>Festuca arundinacea</u>
25	Texas Panicum	<u>Panicum texanum</u>
26	Vaseygrass (seedling)	<u>Paspalum urvillei</u>
27	Wild Barley	<u>Hordeum leporinum</u>
28	Wild Onion	<u>Allium canadense</u>
29	Witchgrass	<u>Panicum capillare</u>
30		
31		

1 PATROL applied at recommended rates suppresses the following
2 weeds:

3 Bermudagrass	<u>Cynodon dactylon</u>
4 Common Lambsquarters	<u>Chenopodium album</u>
5 Common Purslane	<u>Portulaca oleracea</u>
6 Florida Pusley	<u>Richardia scabra</u>
7 Groundsel	<u>Senecio vulgaris</u>
8 Hairy Fleabane	<u>Conyza bonariensis</u>
9 (Flax-leaved Fleabane)	
10 Henbit	<u>Lamium amplexicaule</u>
11 Horseweed (Marestail)	<u>Conyza canadensis</u>
12 Johnsongrass (rhizome)	<u>Sorghum halepense</u>
13 Nutsedge	<u>Cyperus</u> spp.
14 Orchardgrass	<u>Dactylis glomerata</u>
15 Pigweeds (Redroot, Tumble and	<u>Amaranthus</u> spp.
16 Green Amaranth)	
17 Plaintains	<u>Plantago</u> spp.
18 (Bracted and Buckhorn)	
19 Poorjoe	<u>Diodia teres</u>
20 Russian Thistle	<u>Salsola iberica</u>
21 Quackgrass	<u>Agropyron repens</u>
22 Silverleaf Nightshade	<u>Solanum elaeagnifolium</u>
23 Sowthistle	<u>Sonchus oleracea</u>
24 Torpedograss	<u>Panicum repens</u>
25 Wirestem Muhly (Western Muhly)	<u>Muhlenbergia frondosa</u>
26	
27	

LIMITED WARRANTY AND LIABILITY

NOTICE: Read this Limited Warranty and Liability before buying or using this product. If the terms are not acceptable, return it at once unopened.

It is critical that this product be used and mixed only as specified on the label. The laws of a State may make some or all of this paragraph inapplicable or may give you rights in addition to your rights hereunder. Except to the extent prohibited by applicable law, the exclusive remedy of the user or buyer and the limit of liability of this Company or any other Seller for any and all losses, personal injuries or damages resulting from the use of this product, shall be the purchase price paid by the user or buyer for the quantity of product involved. Except to the extent prohibited by State law, there is no warranty, and this Company and other Sellers disclaim all liability for losses, personal injury or damages: (i) arising from any use of this product in a manner or for a purpose not recommended in its label directions, or from mixing this product before use with any substance except as recommended by the product's label, (ii) arising from handling or storage in violation of label instructions, (iii) for all indirect, special or consequential damages, (iv) when not reported to this Company within one year of discovery. **THERE ARE NO IMPLIED WARRANTIES AND NO WARRANTIES OR MERCHANTABILITY OR FITNESS.**

PATROL® is a trademark of Sandoz Ltd.

JOE YODER

jb

Patrol.dft