

PM 23

55947-78

FILE/023

United States Environmental Protection Agency
Washington, D.C. 20460

Office of
Prevention, Pesticides and
Toxic Substances

OCT 15 1993

Jeff W Popp
SANDOZ AGRO, INC.
1300 EAST TOUHY AVENUE
DES PLAINES IL 60018

Subject: Label Amendment Submission of 06/22/93
in Compliance with WPS Labeling Requirements
EPA Reg No. 55947-78
SOLICAM DF HERBICIDE

Dear Registrant:

The labeling cited above and submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is accepted subject to the comments listed below.

Based on your certification, the Agency has accepted only those changes to your labeling which are necessary to comply with PR Notices 93-7 and 93-11, which reflect the WPS labeling requirements of 40 CFR part 156, subpart K. Any other labeling changes submitted in connection with this amendment application and not directly related to compliance with PR Notice 93-7 or 93-11 have neither been reviewed nor accepted by the Agency. If you wish to make any such changes, you must submit a separate amendment application proposing them. If your product registration is currently suspended, acceptance of this labeling amendment does not affect the suspension in any way.

A copy of your proposed labeling stamped "Accepted with comments" is attached. Make any required changes described in the attached and send three copies of final labeling as soon as it is available to:

Document Processing Desk (FIN-LABEL)

Jet23

Office of Pesticide Programs (H-7504C)
U.S. Environmental Protection Agency
401 M Street SW
Washington, DC 20460-0001

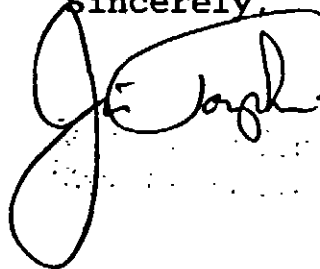
Hand or courier deliveries of final labels may be made to:

Document Processing Desk (FIN-LABEL)
Room 266A Crystal Mall 2
1921 Jefferson Davis Highway
Arlington, VA 22202

Please correct the typographical errors circled on the draft before printing final labeling.

In your final labeling the "Agricultural Use Requirements" text must be contained in a clearly separate box. This box may be set apart by a line, by another graphical device, by a different color background, or in any other way that clearly distinguishes it from surrounding text.

Sincerely,

A handwritten signature in black ink, appearing to read "J. E. Joseph". The signature is written in a cursive style with a large, looping initial "J".

30423

SOLICAM® DF

HERBICIDE FOR CONTROL OF GRASS (MONOCOTYLEDON) AND BROADLEAF (DICOTYLEDON) WEEDS IN TREE FRUITS AND NUTS, CANEBERRIES, GRAPES, ASPARAGUS AND NON-CROP AREAS.

ACTIVE INGREDIENT: norflurazon [4-chloro-5-(methylamino)-2-(alpha, alpha, alpha-trifluoro-m-toyl)-3(2H)-pyridazinone] . . . 78.6% INERT INGREDIENTS. 21.4% 100%

Technical ingredient analysis by isomer specific method AM-0864. Previously 80% by method T-4295.

KEEP OUT OF REACH OF CHILDREN CAUTION PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS (and 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.

STATEMENT OF PRACTICAL TREATMENT

If swallowed: Call physician or a 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. If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists. If in eyes: Flush eyes with plenty of water. Get medical attention if irritation persists.

Personal Protective Equipment: Applicators and other handlers must wear: Long-sleeved shirt and long pants Waterproof gloves Shoes plus socks

ACCEPTED with COMMENTS in EPA Letter Dated

OCT 5 1993

Under the Federal Insecticide, Fungicide, and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 55947-78

BEST AVAILABLE COPY

1 Follow manufacturer's instructions for cleaning/maintaining PPE.
2 If no such instructions for washables, use detergent and hot
3 water. Keep and wash PPE separately from other laundry.

4 **Engineering controls statements:**

5
6
7
8
9

10 **User Safety Recommendations:**
11 Users should:

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

19
20 **Environmental Hazards:** For terrestrial uses, do not apply
21 directly to water or to areas where surface water is present or
22 to intertidal areas below the mean high water mark. Do not apply
23 when weather conditions favor run-off or drift from treated
24 areas. Do not contaminate water when disposing of equipment
25 washwaters.

26 NET WT.: 5 POUNDS
27 U.S. PAT NO. 3,935,210 and 3,834,889
28 EPA Reg. No. 55947-78
29 EPA Est. No. 55618-SC-001

30 SOLICAM[®] is a Registered Trademark of Sandoz Ltd.

31 **I. DIRECTIONS FOR USE**

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

34 Do not apply this product in a way that will contact workers or
35 other persons, either directly or through drift. Only protected
36 handlers may be in the area during application. For any
37 requirements specific to your state or tribe, consult the agency
38 responsible for pesticide regulation.

BEST AVAILABLE COPY

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.

Exception: If the product is soil injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

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
- Waterproof gloves
- Shoes plus socks

BEST AVAILABLE COPY

1 Use Precautions

- 2 o Do not apply to container grown plants
- 3 o Do not apply to chemigation except for citrus
- 4 o Do not apply to nursery stock except for citrus
- 5 o Do not apply when nuts or fruit are on the ground at
- 6 harvest.
- 7 o In the Coachella Valley of California, SOLICAM[®] DF may only
- 8 be applied to asparagus, citrus and apples or non-crop
- 9 areas. Do not use in stone fruits on the western slope of
- 10 Colorado.
- 11 o Do not apply to erodible soil which may wash into the root
- 12 zone of sensitive plants or apply in greenhouses as crop
- 13 injury may occur.
- 14 o Do not use on wine grapes grown in coarse soils in the state
- 15 of Washington.

16 II. GENERAL INFORMATION

17 SOLICAM[®] DF is a preemergence herbicide which controls certain
18 grass (monocotyledon) and broadleaf (dicotyledon) weeds in
19 certain tree fruits and nuts, caneberries, grapes, asparagus and
20 non-crop areas.

21 SOLICAM[®] DF must be moved into the weed seed germination zone to
22 be effective. If no rainfall occurs within 4 weeks after
23 application, the product must be incorporated by flood or
24 sprinkler irrigation. SOLICAM[®] DF has no post-emergence activity
25 and will not control established weeds. Existing weeds must be
26 mechanically removed or controlled by using a suitable
27 postemergence herbicide.

28 Multiple or sequential applications can be made, but the total
29 quantity of SOLICAM[®] DF applied within a year must not exceed the
30 maximum recommended rate (see table section III.B.).

31 A. Rotational Crops

32 Use the following time interval restrictions before planting
33 rotational or replacement crops in land treated with SOLICAM[®] DF.

34 Crops listed on this label

35 Refer to tables of maximum SOLICAM[®] DF rates in each crop section
36 of this label for interval to wait after application before
37 replacement or rotational crop can be planted.

38 Cotton

39 Wait 12 months before replanting to cotton.

40 Crops that do not have a SOLICAM[®] DF use pattern described on

1 this label.
 2 Crops that do not have a SOLICAM[®] DF use pattern listed should
 3 not be planted in SOLICAM[®] DF treated soil until a test planting
 4 or bioassay of the next intended crop shows no sign of
 5 phytotoxicity (loss of pigments (whitening) in the leaf vein) for
 6 4 months after emergence. Test plantings must be done to
 7 determine if the soil is free of residues of SOLICAM[®] DF.

8 Cover crops planted in treated areas must not be harvested,
 9 grazed or fed to livestock.

10 **B. Tank Mixes**

11 SOLICAM[®] DF may be tank mixed with other herbicides and liquid
 12 fertilizer. Some tank mix options for SOLICAM[®] DF are listed in
 13 each crop section. Herbicides used as tank mix partners must be
 14 registered for use on crop where application is intended. When
 15 tank mixing, read and follow the label of each product for
 16 precautionary statements, directions for use, weeds controlled
 17 and geographic and other restrictions.

18 **C. Mixing Instructions**

19 Clean and calibrate the sprayer before preparing spray
 20 suspension. Add SOLICAM[®] DF to the spray tank 3/4 filled with
 21 the required volume of water. This will eliminate or minimize
 22 foaming. Maintain agitation while filling and spraying. If a
 23 by-pass line is used, discharge at the bottom of the tank to
 24 further minimize foaming.

25 Do not allow SOLICAM[®] DF spray mixture to remain in the spray
 26 tank overnight.

27 Predetermine the compatibility of labeled tank mixes with your
 28 source of water by mixing small proportional quantities in
 29 advance.

30 Amount of Herbicide to Add to One Pint of Water
 31 (Assuming Volume is 25 Gallons per Acre)

32	HERBICIDE	LABEL	AMOUNT TO MIX
33	FORMULATION	RATE PER ACRE	(Level
34	Teaspoons)		
35	Dry	1 lb.	1.5
36	Liquid	1 pt.	0.5

37 If herbicide(s) do not ball-up or form flakes, sludge, gels, oily
 38 films, layers or other precipitates, the mix is compatible.
 39 Incompatibility symptoms will usually occur within 5 minutes
 40 after mixing.

1 If components are incompatible, consult with your local
2 agricultural chemical dealer for the use of an acceptable
3 compatibility agent. Rerun the above COMPATIBILITY TEST with a
4 suitable compatibility agent (0.25 teaspoon is equivalent to 2
5 pints per 100 gallons of water).

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

- 8 1. Wettable powders and water dispersible granules.
- 9 Wettable powders should be premixed in a small amount of
- 10 water. Water dispersible granulars should be added during
- 11 filling. Mix thoroughly before other products are added.
- 12 2. Flowable liquids.
- 13 3. Emulsifiable concentrates.
- 14 4. Surfactants.

15 Begin adding wettable powders, flowable liquids, emulsifiable
16 concentrates, and surfactants after the spray tank is 3/4 full.
17 Continue agitation during the addition of all the materials and
18 while filling and spraying.

19 Always predetermine tank mix compatibility by mixing small
20 proportional quantities in a small container. If after vigorous
21 shaking there are large flakes, gel, sludge, or other signs of
22 incompatibility, do not use the combination. Always follow the
23 order of addition given in the mixing instructions given above.

24 **C. Application Equipment**

25 SOLICAM[®] DF should be applied using a carefully calibrated fixed
26 boom sprayer. Filters with screen sizes of 50 mesh or larger
27 should be used. Supplemental applications may be made in citrus
28 using ring drench techniques or chemigation through low volume
29 sprinkler or drip irrigation systems (see Special Directions for
30 tree fruits and nuts, caneberries and grapes in section III.B.1
31 for additional information). Chemigation can only be used in
32 citrus crops.

4/23

1 **Row Treatment Calculation**

2 When applying a row (or banded) treatment of SOLICAM[®] DF, the
3 following formula may be used to calculate the amount per acre:

4	Width of sprayed band			
5	in feet			
6		x	Pounds per acre	Pounds per acre
7	<u>Distance between rows</u>		for broadcast =	for row
8	in feet		treatment	treatment

1 **III. DIRECTIONS FOR TREE FRUITS AND NUTS, CANE BERRIES, GRAPES,**
2 **ASPARAGUS AND NON-CROP AREAS**

3 **A. Weeds Controlled and Suppressed**

4 **SOLICAM[®] DF at recommended rates controls the following weeds:**

5 **Broadleaf Weeds (Dicotyledons)**

6	Black mustard	<i>Brassica nigra</i>
7	Camphorweed*	<i>Heterotheca subaxillaris</i>
8	Carolina (Wild) geranium	<i>Geranium carolinianum</i>
9	Common chickweed	<i>Stellaria media</i>
10	Common ragweed*	<i>Ambrosia artemisiifolia</i>
11	Desert rockpurslane	<i>Calandrinia ciliata</i>
12	(redmaids)	
13	Dogfennel	<i>Eupatoria capillifolium</i>
14	Falsedandelion	<i>Pyrrhopappus carolinianus</i>
15	(smooth cat's ear)	
16	Fiddleneck	<i>Amsinckia intermedia</i>
17	Filaree	<i>Erodium spp.</i>
18	(redstem & whitestem)**	
19	Flixweed	<i>Descurainia sophia</i>
20	Goldenrod*	<i>Solidaga altissima</i>
21	Little mallow	<i>Malva parviflora</i>
22	London rocket	<i>Sisymbrium irio</i>
23	Pineapple weed	<i>Matricaria matricariodes</i>
24	Prostrate spurge	<i>Euphorbia humistrata</i>
25	Puncturevine	<i>Tribulus terrestris</i>
26	Purple cudweed	<i>Gnaphalium purpureum</i>
27	Shepherdspurge	<i>Capsella bursa-pastoris</i>
28	Spreading dayflower*	<i>Commelina diffusa</i>
29	Stinging nettle	<i>Urtica dioica</i>
30	Tumble mustard (Jimhill)	<i>Sisymbrium altissimum</i>
31	Velvetleaf	<i>Abutilon theophrasti</i>
32	Virginia pepperweed	<i>Lepidium virginicum</i>
33	Wild buckwheat	<i>Polygonum convolvulus</i>

34 **Grass and Sedge Weeds (Monocotyledons)**

35	Annual bluegrass	<i>Poa annua</i>
36	Annual sedge	<i>Cyperus compressus</i>
37	Bahiagrass (seedling)	<i>Paspalum notatum</i>
38	Barnyardgrass	<i>Echinochloa crus-galli</i>
39	Bearded sprangletop	<i>Leptochloa fascicularis</i>
40	Broadleaf signalgrass	<i>Brachiaria platyphylla</i>
41	Cheat	<i>Bromus secalinus</i>
42	Crabgrass	<i>Digitaria spp.</i>
43	Crowfootgrass (seedling)*	<i>Dactyloctenium aegyptium</i>
44	Downy brome	<i>Bromus tectorum</i>
45	Fall panicum	<i>Panicum dichotomiflorum</i>
46	Feather fingergrass	<i>Chloris virgata</i>
47	Foxtails	<i>Setaria spp.</i>

1	Goosegrass	<i>Eleusine indica</i>
2	Guineagrass (seedling)*	<i>Panicum maximum</i>
3	Italian ryegrass (annual	<i>Lolium m. iflorum</i>
4	ryegrass)	
5	Johnsongrass (seedling)	<i>Sorghum halepense</i>
6	Natalgrass (seedling)*	<i>Rhynchelytrum repens</i>
7	Pangolagrass (seedling)*	<i>Digitaria decumbens</i>
8	Sandbur (Longspine, Southern	<i>Cenchrus spp.</i>
9	and Field)*	
10	Sixweeks grama	<i>Bouteloua barbata</i>
11	Southwestern curgrass	<i>Eriochloa gracilis</i>
12	Tall fescue	<i>Festuca arundinacea</i>
13	Texas panicum	<i>Panicum texanum</i>
14	Vaseygrass (seedling)*	<i>Paspalum urvillei</i>
15	Wild barley	<i>Hordeum leporinum</i>
16	Wild onion	<i>Allium canadense</i>
17	Witchgrass	<i>Panicum capillare</i>

18 SOLICAM® DF applied at recommended rates suppresses the following
 19 grass and broadleaf weeds:

20	Bermudagrass	<i>Cynodon dactylon</i>
21	Common lambsquarters	<i>Chenopodium album</i>
22	Common Mallow	<i>Malva neglecta</i>
23	Common purslane	<i>Portulaca oleracea</i>
24	Florida pusley*	<i>Richardia scabra</i>
25	Groundsel	<i>Senecio vulgaris</i>
26	Hairy fleabane (flax-leaved	<i>Conyza bonariensis</i>
27	fleabane)	
28	Henbit	<i>Lamium amplexicaule</i>
29	Horseweed (marestail)	<i>Conyza canadensis</i>
30	Johnsongrass (rhizome)	<i>Sorghum halepense</i>
31	Nutsedge	<i>Cyperus spp.</i>
32	Orchardgrass	<i>Dactylis glomerata</i>
33	Pigweeds (redroot, tumble	<i>Amaranthus spp.</i>
34	and green amaranth)	
35	Plaintains (bracted and	<i>Plantago spp.</i>
36	buckhorn)	
37	Poorjoe	<i>Diodia teres</i>
38	Russian thistle	<i>Salsola iberica</i>
39	Quackgrass	<i>Agropyron repens</i>
40	Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
41	Sowthistle, Annual	<i>Sonchus oleracea</i>
42	Torpedograss*	<i>Panicum repens</i>
43	Wirestem muhly (Western	<i>Muhlenbergia frondosa</i>
44	muhly)	

45 *When applied at the higher rates recommended for weed control in Florida
 46 citrus.
 47 **Treat prior to germination and incorporate with water on coarse and medium
 48 soils for adequate control.

12/23

1 **B. Tree fruits and nuts, caneberries and grapes crop directions**

2 SOLICAM® DF should be applied prior to weed seed germination and
3 when rainfall or irrigation is likely to occur within 4 weeks of
4 treatment.

5 The soil should be settled, firm and relatively free of weeds and
6 debris at the time of application. Soil should be free of
7 depressions around trees or grape vines where rain or irrigation
8 water can concentrate.

9 Apply as a directed spray to the soil. Avoid contact with fruit
10 or foliage. Do not apply when nuts or fruits are on the ground at
11 harvest.

12 Loss of pigment (whitening) of leaf veins may occur in almonds,
13 cherries and grapes grown in coarse textured soils when SOLICAM®
14 DF is applied within 3 months after bud break.

15 Multiple or sequential applications can be made, but the total
16 quantity of SOLICAM® DF applied during a year must not exceed the
17 maximum recommended rate for that crop and soil texture. Rainfall
18 or irrigation is necessary to incorporate SOLICAM® DF after each
19 application.

20 SOLICAM® DF is recommended for application using at least 20
21 gallons of water per acre with suitable nozzles and pressure for
22 directed ground application. Applications at less than 20 gallons
23 should use appropriate low volume application equipment.
24 Supplemental applications may also be made in citrus using ring
25 drench techniques or chemigation through low volume sprinkler or
26 drip irrigation systems (see Special Directions for tree fruits
27 and nuts, caneberries and grapes section III-B-1 for additional
28 information). Chemigation can only be used in citrus crops.

29 Read mixing, application and specific crop sections for
30 additional recommendations and precautions. The following table
31 lists the maximum rate of SOLICAM® DF that can be used per year
32 based on crop, soil texture and location of use (Read sections
33 following for addition recommendations and precautions):

1 MAXIMUM SOLICAN® DF RATES (LBS. PRODUCT/TREATED ACRE PER YEAR) BY SOIL TEXTURE

Crop	---Coarse--- Sand, Loamy sand	Sandy loam	--Medium-- Loam, Silt loam, Silt, Sandy clay loam	- Fine--- Sandy clay, Clay loam, Silty clay loam, Silty clay, Clay	Months after planting to first allowed application (West/East of the Mississippi River)	Months after application to planting of replacement or rotational crop (West/East of the Mississippi River)	Special use directions (see list below)
Citrus	2.5 - 5.0	2.5 - 5.0	3.75 - 5.0	5.0	0/0	0/0	2
Irrigated Citrus (Florida and Texas only)	2.5 - 10.0	2.5 - 10.0	3.75 - 10.0	5.0 - 10.0	0/0	0/0	1,2
Apple	2.5	2.5	3.75	5.0	0/0	0/0	3
Avocado	2.5	2.5	3.75	5.0	6/6	12/12	3
Blueberries Filbert							
Asparagus	2.5	2.5	3.75	5.0	12/12	12/12	3,9
Nectarines	2.5	2.5	3.75	5.0	18/6	18/12	3,6
Peach							
Pecan							
Apricot	2.5	2.5	3.75	5.0	18/12	18/12	3,7
Blackberry							
Pear							
Plum							
Prune							
Raspberry							
Walnut							
Almond	1.25	2.5	3.75	5.0	18/18	18/18	3,4,5,8
Cherry	Not recommended	2.5	3.75	5.0	18/18	18/18	3,4
Grape	1.25	2.5	3.75	5.0	24/24	24/24	3,4,5,10

- 5 2) Do not apply to germinating seed beds in which citrus seed has
6 or will be planted, or where citrus is interplanted with palm
7 trees. See following section for ring drench application
8 directions.
- 9 3) Do not apply in nursery situations.
- 10 4) Loss of pigment (whitening) in leaf veins may occur on
11 almonds, cherries or grapes grown in coarse textured soils when
12 SOLICAM[®] DF is applied within 3 months after bud break.
- 13 5) A registered tank mix partner may be required for broad
14 spectrum control.
- 15 6) A higher rate of 3.75 lbs. of SOLICAM[®] DF may be used in
16 coarse textured Coastal Plains soils of the Southeast.
- 17 7) Apply to blackberries and raspberries during the dormant
18 season. Temporary loss of pigment (whitening) in leaf veins may
19 occur with normal use.
- 20 8) See following sections for pre-harvest application directions
21 for almonds.
- 22 9) See Asparagus Use Directions.
- 23 10) Do not apply to wine grapes grown in coarse soil in the state
24 of Washington.

1 B.1. Special Directions for Citrus and Almonds.

2 Almonds - Pre-Harvest Application

3 SOLICAM[®] DF may be used as a soil applied preemergence treatment
4 prior to almond harvest. SOLICAM[®] DF applied in this manner
5 should be incorporated with 0.5 inches of irrigation water prior
6 to weed germination and shaking or nut drop.

7 Citrus - Ring Drench Application (Florida Citrus Only)

8 Apply SOLICAM[®] DF to newly planted (non-bearing) citrus as a ring
9 drench treatment at the rate of 10 lbs. product broadcast per
10 acre. Make only one application per year. Consult the following
11 table for the ounces of SOLICAM[®] DF to add to a 500-gallon water
12 tank for various diameter rings.

13 OUNCES OF SOLICAM[®] DF PER 500 GAL FOR RING DRENCH APPLICATION

	Diameter of ring		
	3 ft.	4 ft.	5 ft.
14 3 gals./tree 15 (167 trees/tank)	4.3	7.6	12.0
16 5 gals./tree 17 (100 trees/tank)	2.6	4.6	7.2
18 7 gals./tree 19 (71 trees/tank)	1.8	3.3	5.2
20 10 gals./tree 21 (50 trees/tank)	1.3	2.3	3.6

160423

1 **Citrus - Chemigation (Citrus Crops Only)**

2 **Low volume sprinkler - 4 to 50 gallons per hour (gph) per**
3 **emitter, drip - 0.5 to 3 gph per emitter. Point of application**
4 **should be above ground.**

5 **Irrigation system should run a sufficient amount of time prior to**
6 **SOLICAM[®] DF injection to have all emitters functioning properly.**
7 **After system is operating properly, length of injection should be**
8 **such that at one period of time during the injection, the first**
9 **and last emitters in the system contain SOLICAM[®] DF treated**
10 **water. Add SOLICAM[®] DF to the supply tank already filled with**
11 **the volume of water required for the injection period (this**
12 **should be at least four (4) gallons for each pound of SOLICAM[®] DF**
13 **used). Maintain proper agitation in SOLICAM[®] DF injection tank.**
14 **SOLICAM[®] DF should be mixed in clean water and injected down-line**
15 **from filters. Following SOLICAM[®] DF injection, system should be**
16 **flushed for a period of time sufficient to clear the line of**
17 **SOLICAM[®] DF. (If SOLICAM[®] DF application is made during a normal**
18 **irrigation cycle, injection should be made during the late**
19 **stage.)**

20 **Apply this product only through low volume sprinkler (micro**
21 **sprinkler) and drip (trickle) irrigation systems. Do not apply**
22 **this product through any other type of irrigation system.**
23 **Crop injury, lack of effectiveness, or illegal pesticide residues**
24 **in the crop can result from non-uniform distribution of treated**
25 **water. If you have questions about calibration, you should**
26 **contact State Extension Service specialists, equipment**
27 **manufacturers or other experts. Do not connect an irrigation**
28 **system used for pesticide application to a public water system**
29 **unless the prescribed safety devices for public water systems are**
30 **in place. A person knowledgeable of the chemigation system and**
31 **responsible for its operation, or under the supervision of the**
32 **responsible person, must shut the system down and make necessary**
33 **adjustments should the need arise.**

34 **Application of SOLICAM[®] DF through irrigation systems should be**
35 **used as a supplemental weed control practice. The addition of**
36 **SOLICAM[®] DF through irrigation systems will help prevent weed**
37 **escapes at the irrigation point when the application is made**
38 **before weed seeds germinate.**

1 Chemigation Calibration (Citrus Crops Only)

2 Calculation of use rate is based on wetted area around emitters -
3 NOT on tree acres. To determine correct amount of SOLICAM[®] DF,
4 use the following formula:

5 1. Treated area per each emitter = A

6 $A = 3.14 \times (\text{radius} \times \text{radius})$

7 *Example: If the average distance from emitter to perimeter of*
8 *wetted area, measured one inch below soil surface is 13 inches,*
9 *then*

10 $A = 3.14 \times (13'' \times 13'')$
11 $A = 3.14 \times (169'')$
12 $A = 530.7 \text{ square inches}$

13 2. The area in square feet wet in each acre = B

14 $B = \frac{A \times \text{emitters/acre}}{144}$
15

16 *Example: If there are 300 emitters per acre, then*
17 $B = \frac{530.7 \times 300}{144} = B = 1105.6 \text{ square feet wetted}$
18 per acre.

19 3. The total area (in square feet) wet by your system = C

20 $C = B \times \text{acres covered by system}$

21 *Example: If the system covers 20 acres, then*

22 $C = 1105.6 \text{ square feet per acre} \times 20 \text{ acres}$

23 $C = 22,112 \text{ square feet wetted by system}$ 4. Amount of SOLICAM[®] DF to
24 inject = S

25 Rate per treated acre of SOLICAM[®] DF = R

26 $S = \frac{C}{43,560} \times R = \text{pounds of SOLICAM}^{\circ} \text{ DF}$
27

28 *Example: If the desired application rate per treated acre is*
29 *2.0 lbs of SOLICAM[®] DF, then*

30 $S = \frac{22,112 \times 2.0}{43,560} = S = 1.02 \text{ pounds of SOLICAM}^{\circ} \text{ DF}$
31 $\text{should be injected into the system.}$

32 (Note: Select the proper rate (R) based on soil texture, weeds
33 to control and length of control required. The total amount of
34 Solicam applied in a season from broadcast, ring drench and/or
35 supplemental chemigation applications cannot exceed the maximum
36 rate stated in section III-C.)

180123

PRECAUTIONS FOR ALL SPRINKLER OR DRIP CHEMIGATION APPLICATIONS

1
2
3 1.The system must contain a functional check valve, vacuum
4 relief valve, and low pressure drain appropriately located on
5 the irrigation pipeline to prevent water source contamination
6 from backflow.

7 2.The pesticide injection pipeline must contain a functional,
8 automatic, quick-closing check valve to prevent the flow of
9 fluid back toward the injection pump.

10 3.The pesticide injection pipeline must also contain a
11 functional, normally closed, solenoid-operated valve located
12 on the intake side of the injection pump and connected to the
13 system interlock to prevent fluid from being withdrawn from
14 the supply tank when the irrigation system is either
15 automatically or manually shut down.

16 4.The system must contain functional interlocking controls to
17 automatically shut off the pesticide injection pump when the
18 water pump motor stops, or in cases where there is no water
19 pump, when the water pressure decreases to the point where
20 pesticide distribution is adversely affected.

21 5.The irrigation line or water pump must include a functional
22 pressure switch which will stop the water pump motor when the
23 water pressure decreases to the point where pesticide
24 distribution is adversely affected.

25 6.Systems must use a metering pump, such as a positive
26 displacement injection pump (e.g., diaphragm pump) effectively
27 designed and constructed of materials that are compatible with
28 pesticides and capable of being fitted with a system
29 interlock.

30 7.Do not apply when wind speed favors drift beyond the area
31 intended for treatment.

32 8.Application when drift may occur, such as from windy
33 conditions, or when system joints and connections are leaking,
34 or when nozzles are not providing uniform distribution, may
35 cause crop injury.

36 9.Application should be directed in such a way that SOLICAM®
37 DF not come into contact with foliage.

19/23

ADDITIONAL PRECAUTIONS FOR CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There must be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.

3. All chemigation systems connected to public water systems must also follow restrictions listed in the preceding section titled "Precautions for All Sprinkler or Drip Chemigation Applications".

B.2. Tank mix recommendations for certain tree fruits and nuts, caneberries and grapes

Tank mixes are usually required to control the entire spectrum of weeds found in a particular grove, orchard or vineyard. Tank mix herbicides must be registered for use on crop where application is intended (Refer to the tank mix section II.B. of this label for specific directions).

Tank mix products for use with SOLICAM[®] DF may include diuron (Karmex), Goal, Gramoxone, bromacil (Hyvar), Krovar I and II, Roundup, simazine (Princep) or Surflan if the herbicide is registered for the intended crop and use pattern. SOLICAM[®] DF tank mix combinations should not include more than one of the following herbicides: diuron, Hyvar, Krovar, or simazine.

Tank mix herbicide(s) must be registered for use on crop where application is intended. The following table summarizes some of the common tank mix options with SOLICAM[®] DF by crop (✓ = tank mix option). If a tank mix is not listed below but both products have that crop individually listed on their label you may use that combination in accordance with the directions for use for each product.

200123

1 **EXAMPLE TANK MIX COMBINATIONS BY CROP**

	diuron	Goal	Gramoxone	Hyvar	Krovar	Prowl	Roundu P	simazine	Sinbar	Surflan
2		✓	✓			✓	✓	✓		✓
3	✓	✓	✓			✓	✓	✓	✓	✓
4		✓	✓			✓	✓			✓
5		✓	✓				✓	✓		✓
6	✓		✓					✓	✓	✓
7	✓		✓					✓	✓	✓
8		✓	✓			✓	✓	✓		✓
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10		✓	✓				✓	✓		✓
11	✓	✓	✓			✓	✓	✓		✓
12		✓	✓			✓	✓			✓
13	✓	✓	✓			✓	✓	✓	✓	✓
14	✓	✓	✓			✓	✓	✓		✓
15	✓	✓	✓				✓	✓	✓	✓
16		✓	✓			✓	✓	✓		✓
17		✓	✓			✓	✓			✓
18	✓		✓					✓	✓	✓
19	✓	✓	✓			✓	✓	✓		✓

20 * For use in non-bearing citrus.

21 Tank mix with a postemergence herbicide such as Gramoxone or
 22 Roundup when emerged weeds are present. Diuron (Karnex), Goal,
 23 Hyvar and Krovar I and Krovar II may provide postemergence
 24 control of certain weeds in addition to their residual
 25 preemergence control. Other herbicides listed for tank mix
 26 combinations will provide only preemergence activity. For control
 27 of additional weeds, products must be applied prior to weed
 28 emergence. Consult the use directions of the tank mix herbicide
 29 for specific weeds controlled.

30 Read and follow the label of each tank mix herbicide used for
 31 precautionary statements, directions for use, weeds controlled,
 32 and geographic and other restrictions.

33 **C. Asparagus Directions**

34 The soil should be settled, firm and relatively free of weeds and
 35 debris at the time of application. Soil should be free of
 36 depressions around asparagus where rain or irrigation water can
 37 concentrate.

38 Apply SOLICAM[®] DF in a minimum of 20 gallons of water per acre as
 39 a broadcast preemergence treatment. Use the rates listed in the

1 following table. Do not apply within 14 days of harvest. SOLICAM[®]
 2 DF should not be applied if crop rotation or replacement is
 3 expected within 12 months (see the Rotational Crop section (II.A)
 4 for additional precautions).

5 Allow newly planted fields (direct seeded, seedlings or crowns)
 6 to become established for one season before application of
 7 SOLICAM[®] DF.

8 Improved results may be obtained if crop debris is incorporated
 9 or removed prior to application.

10 Select the rate of SOLICAM[®] DF to use from the following table:

11 **ASPARAGUS: MAXIMUM SOLICAM[®] DF RATES (LBS. PRODUCT/TREATED ACRE PER YEAR) BY SOIL TEXTURE**

Crop	---Coarse---		--Medium--	---Fine---	Months after planting to first allowed application (West/East of the Mississippi River)	Months after application to planting of replacement or rotational crop (West/East of the Mississippi River)
	Sand, Loosey sand	Sandy loam	Loam, Silt loam, Silt, Sandy clay loam	Sandy clay, Clay loam, Silty clay loam, Silty clay, Clay		
Asparagus	2.5	2.5	3.75	5.0	12/12	12/12

14 **C.1 Tank Mix Recommendations for Asparagus**

15 Tank mix herbicides must be registered for use on crop where
 16 application is intended (Refer to the tank mix section II.B. of
 17 this label for specific directions).

18 SOLICAM[®] DF may be tank mixed with other herbicides registered
 19 for use in asparagus such as BANVEL[®], diuron (Karmex), Gramoxone,
 20 Lorox, Roundup, metribuzin (Sencor, Lexone), simazine (Princep),
 21 trifluralin (Treflan) or 2,4-D(amine) when a broader spectrum of
 22 weeds would be expected. Consult the label(s) of the individual
 23 tank mix product(s) for specific recommendations on rate,
 24 application timing, weed species and crop safety. Follow
 25 directions, restrictions and precautions listed on the respective
 26 tank mix product label.

27 **III.D. Non-Cropland Directions**

28 SOLICAM[®] DF may be used for preemergence weed control in non-
 29 cropland areas including: industrial sites, right-of-way
 30 (highway, pipeline, railroad or utility) and other non-cropland
 31 areas.

32 Apply SOLICAM[®] DF at a rate of 2.5 to 5 pounds of product per
 33 treated acre for non-cropland areas. Higher rates within the
 34 range should be used for finer textured soils and where longer
 35 residual is desired.

1 Since SOLICAM[®] DF is a preemergence herbicide it must be applied
2 to the soil surface before weeds germinate. Existing weeds should
3 be mechanically removed or controlled with a suitable
4 postemergence herbicide. SOLICAM[®] DF must be incorporated into
5 the soil by rainfall or sprinkler irrigation within 4 weeks of
6 application for best weed control.

7 D.1 Tank mix recommendations for non-cropland

8 Tank mix herbicides must be registered for use on non-crop
9 situation where application is intended (Refer to the tank mix
10 section II.B. of this label for specific directions).

11 Tank mix combinations may be desired for broader spectrum
12 preemergence control or postemergence control of emerged weeds or
13 woody shrubs. SOLICAM[®] DF may be tankmixed with Arsenal,
14 atrazine, BANVEL[®], diuron (Karmex), Garlon (amine), Gramoxone,
15 Hyvar, Krovar, Oust, Roundup, Spike, simazine (Princep), Surflan,
16 Telar, Velpar or 2,4-D (amine). Refer to the use directions of
17 the respective tank mix herbicide for additional weeds
18 controlled, rates and precautions.

19 IV. Warranty and Conditions of Sale

20 Limited Warranty And Liability

21 Sandoz Agro, Inc. warrants that the chemical composition of this
22 product conforms to the chemical description on the label and is
23 reasonably fit for the purpose stated on the label when used in
24 accordance with directions under normal conditions of use.
25 Sandoz makes no other warranty, express or implied, concerning
26 the use of this product other than as indicated on the label.
27 Buyer assumes all risks of use, storage or handling of this
28 material not in strict accordance with directions given on the
29 label.

30 V. STORAGE AND DISPOSAL

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

33 **Pesticide Disposal:** Pesticide wastes are toxic. Improper
34 disposal of excess pesticide, spray mixture or rinsate is a
35 violation of Federal law. If waste cannot be disposed of by use
36 of label instructions, contact your state pesticide or
37 environmental control agency or hazardous waste representative at
38 the nearest EPA Regional Office for guidance.

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

- 1 Arsenal[®] is a registered trademark of American Cyanamid Co.
- 2 BANVEL[®] and SOLICAM[®] DF are registered trademarks of Sandoz Ltd.
- 3 Goal[®] is a trademark of Rohm and Haas Co.
- 4 Gramoxone[®] and Gramoxone Super[®] are trademarks of ICI Americas
- 5 Co.
- 6 Hyvar[®], Karmex[®], Krovar I[®] and Krovar II[®], Lexone[®], Lorox[®], Oust[®],
- 7 Telar[®] and Velpar[®] are registered trademarks of E.I. duPont de
- 8 Nemours.
- 9 Princep[®] is a registered trademark of Ciba-Geigy Corp.
- 10 Roundup[®] is a registered trademark of Monsanto Co.
- 11 Sencor[®] is a registered trademark of Bayer AG, Germany.
- 12 Garlon[®], Spike[®], Surflan[®] and Treflan[®] are registered trademarks
- 13 of DowElanco Products Co.