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OCT 1 1973
EDS IN
DOPS
EPA Reg. 22

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

CAUTION:

Environmental Hazards: Do not apply directly to any body of water. Do not apply when weather conditions favor runoff or drift from treated areas. Do not contaminate water by cleaning of equipment or disposal of wastes.

U.S. PAT. No. 3,644,355 and 3,834,889
EPA Reg. No. 11273-48
EPA Est. No.

NET WT. POUNDS

SOLICAM is a trademark of Sandoz, Ltd.

WEEDS CONTROLLED

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

Grass Weeds:

Annual bluegrass, Annual ryegrass, Annual sedge, Bahiagrass (seedling), Barnyardgrass, Broadleaf signalgrass, Bromus spp., Cheat, Crabgrass, Crowfoot grass,* Fall panicum, Feather fingergrass, Foxtails, Goosegrass, Guinea grass (seedling),* Italian ryegrass, Johnsongrass (seedling), Natalgrass,* Pangolagrass,* Sandspur,* Southwestern cupgrass, Six weeks grama grass, Tall fescue, Texas panicum, Vaseygrass,* Wild barley, Wild onion, Witchgrass.

Broadleaf Weeds:

Annual bursage, Camphorweed,* Carolina geranium, Chickweed, Common ragweed,* Cudweed, Dayflower,* Dog fennel, False dandelion (smooth cat's ear), Fiddleneck, Filaree (redstem and whitestem)**, Goldenrod,* Little mallow (cheeseweed)**, London rocket, Pineapple weed, Prostrate spurge, Puncturevine, Redmaids, Russian thistle, Shepherdspurse, Stinging nettle, Virginia pepperweed, Wild buckwheat, Wild geranium.

SOLICAM DF at recommended rates suppresses the following weeds:

Bermudagrass, Common purslane, Nutsedge, Orchardgrass, Quackgrass, Rhizome johnsongrass, Torpedograss,* Western muhly (wirestem muhly), Common lambsquarters, Florida pusley,* Groundsel, Henbit, Horseweed (marestail), Pigweeds (redroot, tumble and green amaranth), Plaintains (bracted and buckhorn), Poorjoe, Silverleaf nightshade (white horsenettle), Sowthistle, **Flax-leaved fleabane.**

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.

* When applied at the higher rates recommended for weed control in Florida citrus.

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

DIRECTIONS FOR USE

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

GENERAL INFORMATION

SOLICAM DF is a herbicide for control of certain grasses and broadleaf weeds in tree fruit and nut crops, citrus and hops.

SOLICAM DF must be moved into the weed seed germination zone to be effective. If no rainfall occurs within four weeks after application, the product must be activated by flood irrigation or sprinkler irrigation. SOLICAM DF alone has no post-emergence activity and will not control established weeds.

Do not graze livestock on treated areas. Do not feed or graze cover crops grown in treated orchards.

In the following locations, do not use SOLICAM DF in deciduous crops with the exception of apples: Arizona, and the Coachella, Imperial, Palo Verde and Tehachapi Valleys of California. Do not use in stone fruits on the western slope of Colorado.

APPLICATION DIRECTIONS

Apply SOLICAM DF before weeds emerge. The soil surface must be free of weeds and relatively free of plant residues. The soil should be settled and firm at the time of application.

Apply as a directed spray. Avoid contact with fruit or foliage. Make only one application per year unless otherwise indicated. Do not apply when nuts or fruit are on the ground at harvest.

Equipment

Apply accurately with a fixed boom sprayer. Use screen size 50 mesh or larger.

Mixing Instructions

Clean and calibrate the sprayer. Add SOLICAM DF to the spray tank already filled with 1/4 of the required volume of water. Maintain agitation while filling and spraying. If a by-pass line is used, discharge at the bottom of the tank to minimize foaming.

Do not allow SOLICAM DF spray mixture to remain in the spray tank overnight, because settling could occur and resuspension would be difficult.

Tank Mixes

Always predetermine the compatibility of labeled tank mixes by mixing small proportional quantities in advance. 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.

Broadcast Rates

Unless otherwise directed, use 2.5 - 5 lbs. of SOLICAM[®] DF per acre as a directed spray in 75-125 gallons of water.

Use the lower rates on coarse soils. Use the higher rates on medium to fine soils or soils having organic matter content of greater than 3%.

<u>SOIL TEXTURE</u>	<u>SOIL TYPE</u>	<u>SOLICAM DF RATE OF APPLICATION</u>
Coarse	sand, loamy sand, sandy loam	2.5 lbs.
Medium	loam, silt loam, silt, sandy clay loam	3.75 lbs.
Fine	sandy clay, clay loam, silty clay loam, silty clay, clay	5.0 lbs.

Strip or Band Treatment

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

$$\frac{\text{Width of strip in feet}}{\text{Distance between rows in feet}} \times \text{Pounds per acre for broadcast treatment} = \text{Pounds per acre for strip treatment}$$

CROP RECOMMENDATIONS

PERMANENT TREE FRUIT AND NUT CROPS

Apply SOLICAM DF as directed to the soil surface from fall to early spring before weeds emerge, unless otherwise indicated.

Do not use on nursery stock except where uses are indicated.

Almonds, Cherries

Apply SOLICAM DF as directed on sandy loam or finer soil types from fall to early spring, before weeds emerge. For almonds, it is not recommended SOLICAM be applied after bud break on sandy loam soils. In California and the Pacific Northwest, trees must be established at least 18 months in the field. Do not use on coarse-textured soil such as sand, loamy sand, and gravelly sand.

Almonds - Preharvest Application

Apply SOLICAM DF broadcast or band as directed on sandy loam or finer soil types prior to harvest for clean orchard floors. Activate SOLICAM DF with a minimum of one-two inches of irrigation water. Trees must be established at least 18 months in the field. Do not use on coarse-textured soil such as sand, loamy sand, and gravelly sand.

Grapes

Apply SOLICAM DF as directed on sandy loam or finer soil types from fall to early spring. It is not recommended that SOLICAM DF be applied after bud break on sandy loam soils. Vines must be established at least two years in the field. Do not use on nursery stock. In California, do not use in any counties south of Monterey, Kings and Tulare counties. Do not use on coarse-textured soil such as sand, loamy sand, and gravelly sand in all areas except Florida.

Apples and Peaches

Apply SOLICAM DF as directed. The product may be used on newly planted apples. Peaches must be established at least 6 months in the field. However, in California and the Pacific Northwest, peach trees must be established at least 18 months in the field. The soil around the trees should be firm and free of depressions in which rain or irrigation water could accumulate. Higher rates of 2.5 - 4 lbs per acre may be used in Coastal Plains soils of the Southeast.

Apricots, Filberts, Nectarines, Pears,
Plums, Prunes and Walnuts

Apply SOLICAM DF as directed. Trees must be established at least 18 months in the field in California and the Pacific Northwest. Elsewhere, trees must be established at least 12 months in the field.

Pecans

Apply SOLICAM DF as directed to bearing and non-bearing pecans. The product may also be used on newly set pecan trees. Higher rates of 2.5 - 5 lbs. per acre may be used in Coastal Plains soils of the Southeast.

*Blueberries

Apply SOLICAM DF as a directed spray from fall to early spring before weeds emerge. The soil surface must be free of weeds and relatively free of plant residues at the time of application. Make only one application per year. Do not use on nursery stock.

*Raspberries, Blackberries

Apply SOLICAM DF as a directed spray according to label directions from fall to early spring before weeds emerge. Apply when the crop is dormant. The soil surface must be free of weeds and relatively free of plant residues at the time of application. Make only one application per year. Application of SOLICAM DF may result in temporary bleaching or chlorosis of the leaves from which plant will recover. Do not use on nursery stock.

CITRUS CROPS

Apply SOLICAM DF as directed any time during the year according to local practice. SOLICAM DF may be used on bearing and non-bearing citrus. It may also be used on field grown nursery stock. Do not use on germinating citrus seed beds. Do not use where citrus is interplanted with palm trees.

California, Arizona and Texas

Apply 2.5 - 5 lbs. of SOLICAM DF per acre as directed. Higher rates of 3.75-5 lbs. per acre can also be used in coarse-textured soils and incorporated to a depth of not more than 3 to 4 inches for increased activity against less susceptible weeds.

Florida

For oranges, grapefruit, lemons, limes, and tangerines, apply 5-10 lbs. of SOLICAM DF per acre unless otherwise directed. Use the same rate for all coarse-textured soils. In newly planted or established trees SOLICAM DF may be applied up to two times per year. Apply no more than 10 lbs. total SOLICAM DF per acre per year.

Ring Drench Application

Apply SOLICAM DF to newly planted citrus as a ring drench treatment at the rate of 10 lbs. product broadcast per acre. Make only one application per year. Consult the following table for the amount of SOLICAM to add to a 500-gallon water tank for various diameter rings.

	<u>Ounces of SOLICAM per Tank</u>		
	<u>3 ft. ring</u>	<u>4 ft. ring</u>	<u>5 ft. ring</u>
3 gals./tree (167 trees/tank)	4.3	7.6	12.0
5 gals./tree (100 trees/tank)	2.6	4.6	7.2
7 gals./tree (71 trees/tank)	1.8	3.3	5.2
10 gals./tree (50 trees/tank)	1.3	2.3	3.6

Injection into Crop Irrigation Systems

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

Irrigation system should run a sufficient amount of time prior to SOLICAM DF injection to have all emitters functioning properly. After system is operating properly, length of injection should be such that at one period of time during the injection, the first and last emitters in the system contain SOLICAM DF treated water. Maintain proper agitation in SOLICAM DF injection tank. SOLICAM DF should be mixed in clean water and injected down-line from filters. Following SOLICAM DF injection, system should be flushed for a period of time sufficient to clear the line of SOLICAM DF. (If SOLICAM DF application is made during a normal irrigation cycle, injection should be made during the late stage.)

Calibration

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

1. Treated area per each emitter = A

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

Example: If the average distance from emitter to perimeter of wetted area, measured one inch below soil surface = 13 inches then

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

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

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

Example: If there are 300 emitters per acre, then

$$B = \frac{530.7 \times 300}{144} = B = 1105.6 \text{ square feet wetted per acre.}$$

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

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

Example: If the system covers 20 acres, then

$$\begin{aligned} C &= 1105.6 \text{ square feet per acre} \times 20 \text{ acres} \\ &= 22,112 \text{ square feet wetted by system.} \end{aligned}$$

4. Amount of SOLICAM to inject = S

$$S = \frac{C}{43,560} \times 1.5 = \text{pounds of SOLICAM DF}$$

(Note: This will change the a.i. from 1.0 to 1.2 lbs. a.i. per acre.)

$$\text{Example: } S = \frac{22,112}{43,560} \times 1.5 = 0.76 \text{ pounds of SOLICAM DF should be injected into the system.}$$

Application of SOLICAM DF through irrigation systems should be used as a supplemental weed control practice. The addition of SOLICAM DF through irrigation systems should help prevent break-through weeds at irrigation point providing the application is made before weed seeds germinate.

Precautions: 1) Apply only through irrigation systems containing antisiphon and check valves to prevent contamination of well during shutdown and overflow of solution tank. 2) Inject ahead of any right angle turn in the main line to insure adequate mixing. 3) Chemical injection pumps and water pumps must have interlocking controls to insure simultaneous shutoff. 4) Application when drift may occur, such as from windy conditions, or when system joints and connections are leaking, or when nozzles are not providing uniform distribution, may cause crop injury. 5) Application should be directed in such a way that SOLICAM does not come into contact with foliage.

HOPS

Apply SOLICAM as directed to the soil surface in the fall after the hop yards have been worked for the last time, or within one week after stringing in the spring.

Use only on hops that have been established at least 18 months in the field.

SOLICAM DF TANK MIX COMBINATIONS

Some tank mixes as for Solicam 80W

The following tank mix combinations are recommended for improved control of weeds in tree fruit and nut crops, including citrus. No label dosage rates may be exceeded and the more restrictive label limitations and precautions should be observed. Before applying these combinations, read thoroughly all precautionary statements and other information in both labels. Refer to the Mixing Instructions section of this label for specific tank mixing directions. SOLICAM DF may not be tank-mixed with any product containing a prohibition against such mixing.

SOLICAM® DF plus Paraquat CL ✓

This tank mix combination is recommended for kill of existing vegetation and for residual preemergence control of susceptible broadleaf and grassy weeds in all tree crops listed on this label.

Apply 2.5 - 5 lbs. of SOLICAM DF per acre and 1-2 qts. of Paraquat CL per acre in 50-200 gals. of water per acre. Apply to the orchard floor avoiding contact with fruit, foliage, or stems. Add an agriculturally approved nonionic surfactant such as Ortho® X-77 at the rate of 1/2 pint per 100 gallons of spray. Apply when the weeds and grasses are succulent and new growth is 1-6 inches tall. Apply this combination only once per year.

Florida citrus only - Apply 5-10 lbs. of SOLICAM DF per acre and 1-2 qts. of Paraquat CL per acre in 50-200 gals. of water per acre. This combination may be applied up to two times per year. Apply no more than 10 lbs. total SOLICAM DF per acre per year.

Do not spray under windy conditions, and use shield for young trees. Refer to the SOLICAM DF and Paraquat CL labels for further directions, cautions, warnings, precautions, and notes.

SOLICAM DF plus Roundup® ✓

This tank mix combination is recommended for control of existing annual and perennial weeds and for residual preemergence control of susceptible broadleaf and grassy weeds in all tree crops listed on this label.

Apply 2.5 - 5 lbs. of SOLICAM DF per acre as recommended on its label and 1-5 qts. of Roundup per acre as recommended on its label. Apply to the orchard floor in 20-40 gals. of water per acre, avoiding contact with fruit, foliage or other tree parts. Apply when the weeds and grasses are actively growing. Apply this combination only once per year.

Florida citrus only - Apply 5-10 lbs. of SOLICAM DF per acre and 1-5 qts. of Roundup per acre in 20-40 gals. of water per acre. This combination may be applied up to two times per year. Apply no more than 10 lbs. total SOLICAM DF per acre per year.

Do not apply under windy conditions and use a shield for young trees. Use extreme care when applying this combination. Refer to the SOLICAM and Roundup labels for further directions, cautions, warnings, precautions, and notes.

SOLICAM DF plus Princep® Caliber® 90,
Princep® 80W or Registered Simazine 80W or 90 Products ✓

This tank mix combination is recommended for improved control of broadleaf weeds, and more specifically the following: Clover, Cutleaf Eveningprimrose, Dandelion, Henbit, Horseweed (marestail), Lambsquarters, Pigweeds, Puncturevine.

This combination may be used in the following crops: Almonds, Apples, Cherries, Filberts, Grapefruit, Lemons, Oranges, Peaches, Pears, Pecans, Plums, Walnuts.

Apply the appropriate rates in the following table as a tank mix in 20-100 gals. water per acre. Apply as a directed spray to the soil surface before weeds emerge, avoiding contact with fruit, foliage, or stems.

Soil Type	SOLICAM	Pounds Product per Acre	
		Princep Caliber 90	Simazine 80W
Medium	2.5	1.125	1.25
Fine	3.75	2.25	2.5

Do not use this combination in coarse soils. Use only in those crops and locations specified in both the SOLICAM DF and Simazine 80W labels.

Florida only (grapefruit and oranges) - Apply 4-5 lbs. of SOLICAM DF per acre and 3.6 - 4.5 lbs. Princep Caliber 90 or 4-5 lbs. Simazine 80W per acre in 20-100 gallons of water per acre. Use the same rates in all coarse-textured soils. Apply this combination only once per year.

SOLICAM DF plus Simazine plus Paraquat CL ✓

1-2 qts. of Paraquat CL may be added to the SOLICAM DF plus Simazine tank mix combinations to kill existing vegetation. Add an agriculturally approved nonionic surfactant such as Ortho X-77 at the rate of 1/2 pint per 100 gallons of spray. Refer to directions for the SOLICAM DF plus Simazine combinations for recommended crops, application rates and restrictions.

Apply to the orchard floor in at least 50 gals. of water per acre, avoiding contact with fruit, foliage or stems. Apply when the weeds and grasses are succulent and new growth is 1-6 inches tall.

Do not spray under windy conditions and use a shield for young trees. Refer to the product labels for further directions, warnings, precautions, and notes.

SOLICAM DF plus Simazine plus Roundup® ✓

1-5 qts. of Roundup may be added to the SOLICAM DF plus Simazine tank mix combinations to control existing annual and perennial weeds. Refer to directions for the SOLICAM DF plus Simazine combinations for recommended crops, application rates and restrictions.

Apply in 20-40 gals. of water per acre, avoiding contact with fruit, foliage or stems. Apply when the weeds are actively growing. Use extreme care when applying this combination. Refer to the individual product labels for further directions, warnings, precautions, and notes.

SOLICAM DF plus Goal® ✓

This tank mix combination is recommended for control of certain existing weeds, including malva and filaree, and improved residual control of annual broadleaf weeds.

This combination may be used in the following crops: Almonds, Apricots, Cherries, Grapes (California only), Nectarines, Peaches, Pears, Plums, Prunes, Walnuts.

Apply 2.5 - 5 lbs. of SOLICAM DF per acre and 2-4 qts. of Goal 2E or 2.5 - 5 qts. of Goal 1.6F per acre in at least 50 gals. of water per acre. Add an agriculturally approved nonionic surfactant such as Triton[®] AG-98 or Ortho X-77 at the rate of 1 quart per 100 gallons of spray. Apply to the orchard floor avoiding contact with fruit, foliage or other tree parts. Refer to the Goal label for directions regarding application timing. Do not apply under windy conditions.

Apply this combination only once per year. Use only in those locations specified in both SOLICAM DF and Goal labels.

SOLICAM DF plus Surflan[®] pl. Paraquat CL ✓

This tank mix combination is recommended for kill of existing vegetation and improved residual control of certain broadleaf weeds, including Purslane, Lambsquarters, and Pigweeds.

This combination may be used in the following crops: Apples, Almonds, Cherries, Filberts, Grapefruit, Lemons, Oranges, Peaches, Pears, Plums, English Walnuts.

Apply 2.5 - 5 lbs. of SOLICAM DF per acre, 1-2 qts. of Paraquat CL per acre, and 2-4 qts. of Surflan A.S. or 2 2/3 - 5 1/3 lbs. of Surflan 75W per acre in at least 50 gals. of water. Add an agriculturally approved nonionic surfactant such as Ortho X-77 at the rate of 1/2 pint per 100 gallons of spray. Apply to the orchard floor avoiding contact with fruit, foliage or stems. Apply when the weeds and grasses are succulent and new growth is 1-6 inches tall.

Do not spray under windy conditions and use a shield for young trees. Refer to the SOLICAM DF, Paraquat and Surflan labels for further directions, warnings, precautions, and notes.

SOLICAM DF plus Karmex[®] ✓
or Other Diuron 80WP Products

There may be instances where the combination with Diuron will improve overall weed control in sandy loam, medium or fine soils. SOLICAM DF at labeled rates is safe in citrus crops in all soil types when used alone.

This combination may be used in the following crops: Apples, Citrus, Peaches, Pears, Pecans, Walnuts.

Apply of the appropriate rates in the following table as a tank mix in 20-100 gals. water per acre. Apply as directed to the soil surface before weeds emerge, avoiding contact with fruit, foliage and stems.

<u>Soil Type</u>	<u>Pounds Product Per Acre</u>	
	<u>SOLICAM DF</u>	<u>Diuron 80WP</u>
Sandy loam	1.75	1
Medium	2.5	1.5
Fine	3.75	2

In California and Arizona use this combination in citrus only. Do not use this combination on sand, loamy sand, gravelly soils or exposed subsoils, or in soils with less than 1% organic matter (0.5% for pecans). Use only in those crops and locations specified in both the SOLICAM DF and Diuron labels.

Roundup is a trademark of Monsanto Co.

Goal, Triton are trademarks of Rohm and Haas Co.

Ortho X-77 is a trademark of Chevron Chemical Co.

Surflan is a trademark of Elanco Products Co.

Princep, Caliber are trademarks of CIBA-GEIGY Corp.

Karmex is a trademark of Dupont.