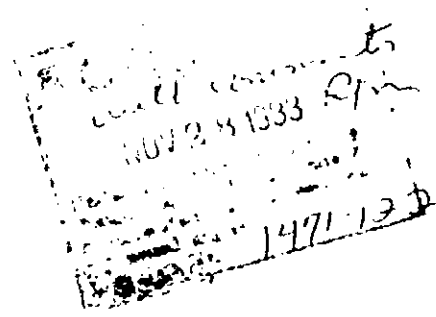


ELANCO

ID 5036



SONALAN® E.C. Herbicide

A selective herbicide for preemergence control
of certain annual grasses and broadleaf weeds.

Complete Directions for Use, Use Warnings, Precautions
and Special Precautions, Tank Mix Recommendations

Elanco Products Company
A Division of Eli Lilly and Company
740 South Alabama Street
Indianapolis, Indiana 46285, USA

SONALAN® - the registered trademark for Elanco Products Company ethalfluralin

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SONALAN® E.C.

E.P.A. Reg. No. 1471-

Active Ingredient:

ethalfluralin: N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4-

(trifluoromethyl)benzenamine-----35.1%

INERT INGREDIENTS:-----64.9%

Contains 3 pounds active ingredient per gallon.

Precautionary Statements

KEEP OUT OF REACH OF CHILDREN

WARNING

Hazards to Humans and Domestic Animals:

SONALAN E.C. formulation is irritating to the eyes and skin. Avoid breathing vapors. Avoid contact with skin, eyes, or clothing. Do not contaminate foodstuffs or feed. Harmful if swallowed or absorbed through the skin. Use protective clothing when handling or using this product.

First Aid:

In case of contact, immediately flush eyes or skin with plenty of water. For eyes, call a physician. Remove and wash contaminated clothing before reuse.

Environmental Hazards:

This pesticide is toxic to fish. Do not apply directly to any body of water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. Runoff or erosion from treated areas may be hazardous to fish in neighboring areas.

Storage:

Avoid freezing. Store above 40°F (5°C). If frozen, poor weed control may result. Do not use or store near heat or open flame.

Pesticide Disposal Directions:

Pesticide, spray mixture, or rinse water that cannot be used according to label instructions must be disposed of according to applicable federal, state or local procedures. Do not contaminate water, food or feed by storage or disposal. Waste resulting from use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal Directions:

Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

General Agricultural Precaution:

Poor weed control and/or crop injury may result if directions are not followed. Uneven application, overapplication or improper incorporation can result in erratic weed control or injury to the treated or rotational crops.

✓ Do not graze or forage crop grown in treated soil or cut for hay or silage.

Do not apply SONALAN to soils which are wet, cloddy, or subject to prolonged periods of flooding because poor weed control or crop injury may result.

Do not apply to any area not specified on the label.

Rotational Restrictions:

In case of crop failure, replant only crops listed on this label. In California and Arizona, do not plant sugar beets, red beets, spinach or oats within eight (8) months following an application of three (3) pints per acre or more of SONALAN.

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SONALAN Performance Guarantee
Disclaimer of Warranties
Limitation of Damages
Inherent Risks of Use

DIRECTIONS FOR USE

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

SONALAN is a preemergence herbicide that controls many annual grasses and broadleaf weeds. SONALAN controls weeds as they germinate. SONALAN will not control established weeds.

MIXING AND APPLICATION DIRECTIONS

SONALAN Alone

Start with a clean spray tank. Fill sprayer one-third (1/3) to one-half (1/2) full with clean water or liquid fertilizer. Start agitation. Add correct quantity of SONALAN, continue agitation and finish filling the tank.

SONALAN Tank Mix

Vigorous, continuous agitation is required for all tank mixes. Sparger pipe agitators generally provide the best agitation in spray tanks. To prevent foaming, avoid stirring or splashing air into the mixture during filling by placing the end of the fill pipe below the surface of the water in the spray tank. Do not allow the mixture to siphon back into the water source.

Mixing order: Fill the tank one-fourth (1/4) to one-third (1/3) full with clean water or liquid fertilizer. (See next section for additional liquid fertilizer mixing instructions). Start the agitation. Add in the following order: dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (F), or liquids (L) to the water and agitate until the product(s) are completely dispersed. Allow additional mixing and dispersion time when using dry flowable products. Continue agitation and fill tank to three-fourths (3/4) full, add the SONALAN or other emulsifiable concentrates (EC) and mix thoroughly. Then add any solution (s) formulations, agitate and finish filling. Maintain agitation during filling and through application. If spraying and agitation must be stopped before the tank is empty, the material may settle to the bottom. In this case, it is important to resuspend all of the material in the bottom of the tank before continuing the spray application. A sparger agitator is particularly useful for this purpose. Sometimes it is more difficult to resuspend settled material than it is to suspend it originally.

Read and carefully follow all label instructions for each material added to the tank. For using dry and flowable formulations with water (slurrying) and pouring the slurry through a 20 or 35 mesh wetting screen in the top of the tank will help assure good initial dispersion in the tank. Fine screens in the tank should be no finer than 75 mesh (100 mesh is finer than 50 mesh).

If a buildup of material on the walls of the spray tank is observed, wash the tank with soapy water between fillings. Rinse and continue the spraying operation. Clean the tank, lines, and screens thoroughly after use. Check the sprayer daily to ensure proper calibration and uniform application. Do not apply SONALAN when the wind can cause drifting of spray particles which can result in non-uniform application.

APPLICATION

Apply SONALAN in at least five (5) gallons of water or liquid fertilizer per acre (broadcast basis), using any properly calibrated, low pressure herbicide sprayer that will apply the spray uniformly.

APPLICATION WITH LIQUID FERTILIZERS

SONALAN may be mixed with most liquid fertilizer materials. Combinations of SONALAN with solutions and suspension type fertilizers have provided weed and grass control equal to the same rates of SONALAN applied in water. Follow SONALAN label recommendations regarding rates per acre, crops, incorporation directions, special instructions, cautions and special precautions.

Individual state regulations relating to liquid fertilizer mixing, registration, labeling and applications are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

LIQUID FERTILIZER MIXING DIRECTIONS

SONALAN In Liquid Fertilizer

Emulsifiable concentrates, such as SONALAN can be mixed with liquid fertilizers. In all cases, continuous agitation is required to prevent the SONALAN from rising to the surface as an oily layer. When necessary, (see Liquid Fertilizer Compatibility Test below), a compatibility agent can be used to ensure that the SONALAN emulsifies properly (i.e., has a milky appearance rather than an oily layer). The use of compatibility agents is especially important when mixing emulsifiable concentrates (EC) with dry flowables, wettable powder (WP), flowables (F), liquids (L), aqueous suspensions (AS), or suspensions in liquid fertilizer. If the emulsion is not properly formed, material rises to the surface of the fertilizer as an oil ("oils out"), the oil then combines with the wettable powder, flowable, or suspension to form an oil emulsion which is difficult to disperse.

Any one of the compatibility agents listed below is helpful in causing emulsifiable concentrates to form non-oiling mixtures with liquid fertilizers. These compatibility agents can be used at rates as low as one and one-half (1 1/2) to two (2) pints per ton of liquid fertilizer and should be mixed well with the fertilizer before adding the emulsifiable concentrate.

Read the label on the compatibility agent and follow the directions.

1. Sponto 168D (Witco Chemicals Co., Chicago, IL)
2. Compat (Farm Chemicals, Inc., Aberdeen, NC)
3. Unite (Hopkins Ag Chemical, Madison, WI)
4. T-Mulz 734-2 (Thompson-Hayward Chemical Co.)
5. Rigo Compatibility Agent (Rigo Company, Buckner, KY)
6. Amoco Spray Mate* (Amoco Oil Co., Chicago, IL)
7. Kem-Link (Universal Coop, Minneapolis, MN)

Each of the above is a phosphate ester type surfactant designed to be used with liquid fertilizers. They usually do not work well as compatibility agents in tank mixtures in water.

Testing for Tank Mix Compatibility in Liquid Fertilizers:

Emulsifiable concentrates alone or in tank mixture with dry flowables, wettable powders (WP), liquids (L), flowables (F), aqueous suspensions (AS), or solutions (S), may not combine properly with some fluid fertilizer materials. Small quantities should always be tested before full-scale mixing. This will determine whether a compatibility agent is needed, and which agent does the best job. The seven (7) agents listed above have been thoroughly tested. There are many other surfactants on the market which were not designed for use with liquid fertilizers.

Use the following test to select the correct agent for your mixture:

1. Put one pint of the liquid fertilizer in a quart jar.
2. Add one pint or less (depending on the recommended rate per acre) of the dry flowable, WP, L, F, or AS material to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the material does not disperse well, it may be necessary to stir the mixture in water before adding to the fertilizer.

3. After dispersing the materials (Step 2), add three (3) to four (4) teaspoonfuls of the SONALAN to the jar and shake well. Add solution herbicides to the mixture last and agitate. Observe the jar for about 10 minutes. If the materials rise to the surface and form a thick layer (oily curds) which will not disperse when agitated, a compatibility agent is needed. If the mixture is easily dispersed to its original state with slight agitation, no agent is needed, but good agitation must be provided in the fertilizer spray tank.
4. If the need for a compatibility agent is shown in Step 3, using a clean quart jar, start at Step 1 above, add one-half (1/2) teaspoonful of the compatibility agent to the liquid fertilizer, mix well, then repeat Steps 2 and 3.

An effective compatibility agent will cause the mixture to remain uniformly mixed with little or no separating or oil rising to the surface for one-half (1/2) hour or longer. If slight separation does occur, two (2) to three (3) inversions of the jar should give a uniform remix. If oily curds form which will not disperse, more agent or another agent should be tried.

Use a clean jar for each test. The compatible mixture will have a uniform appearance and will be relatively easy to keep mixed with gentle agitation of the jar.

APPLICATION WITH DRY BULK FERTILIZER

Dry bulk fertilizer may be impregnated or coated with SONALAN. Application of dry bulk fertilizer impregnated with SONALAN has provided weed and grass control equal to the same rates of SONALAN applied in liquid carriers.

Follow SONALAN label recommendations regarding rates per acre, crops, incorporation directions, special instructions, cautions and special precautions.

Individual state regulations relating to dry bulk fertilizer blending, registration, labeling and application are the responsibility of the individual and/or company selling the fertilizer and chemical mixture.

Limitations: Apply a minimum of 200 pounds per acre of dry fertilizer impregnated with SONALAN at the recommended rate. Most dry fertilizers can be used for SONALAN impregnation. When coated ammonium nitrate and/or limestone are used alone, do not impregnate with SONALAN. These materials will not absorb the herbicide. Blends containing mixtures of these materials can be impregnated.

Impregnation: For ammonium sulfate, urea, nitrate or other commonly used dry bulk fertilizer blends, sprinkle equal parts of SONALAN onto the fertilizer and mix thoroughly. For urea or ammonium nitrate, add water to the SONALAN to make a thick slurry and add about 1/2 cup of slurry per ton of fertilizer.

SONALAN -- PREPLANT INCORPORATED APPLICATION

WEEDS CONTROLLED BY SONALAN

SONALAN applied preplant soil incorporated will control the following weeds:

Grasses:

Annual bluegrass	(Poa annua)
Barnyardgrass	(Echinochloa crus-galli)
Crabgrass (Large crabgrass) (Smooth crabgrass)	(Digitaria spp.)
Foxtail (Giant foxtail) (Green foxtail) (Foxtail millet) (Pigeongrass) (Yellow foxtail)	(Setaria spp.)
Goosegrass	(Eleusine indica)
Johnsongrass (iron seed)	(Sorghum halepense)
Jungle rice	(Echinochloa colonum)
Oat, wild ¹	(Avena fatua)
¹ SONALAN will provide wild oat control except those germinating below the SONALAN treated zone.	
Panicum, fall	(Panicum dichotomiflorum)
Panicum, Texas (Buttalgrass) (Colorado grass)	(Panicum texanum)
Ryegrass, Italian (Annual ryegrass)	(Lolium multiflorum)

Broadleaf Weeds:

Buckwheat, wild	(Polygonum convolvulus)
Carpetweed	(Mollugo verticillata)
Catchfly, conical	(Silene conica)
Chickweed, common	(Stellaria media)
Fiddleneck tarweed	(Amsinckia lycopsoides)
Groundcherry ²	
(Lanceleaf groundcherry)	(Physalis lanceifolia)
² (Wright's groundcherry)	(Physalis Wrightii)
² (See page ____ for special instructions for control in bean.)	
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Lambsquarters, common	(Chenopodium album)
Nightshade ² (annual)	(Solanum spp.)
(Black nightshade)	
(Eastern black nightshade) ³	
² Hairy nightshade	
² (See page ____ for special instructions for control in bean).	
³ (See page ____ for special instructions for partial control in soybean).	
Pigweed	(Amaranthus spp.)
(Prostrate pigweed)	
(Redroot pigweed)	
(Smooth pigweed)	
(Tumble pigweed)	
Purslane, common	(Portulaca olerace)
(Redroot pigweed)	(Richardia scabra)
(Redroot pigweed)	(Galinsoga quadrifida)
(Redroot pigweed)	(Sida acuta)

SOIL PREPARATION -- GENERAL DIRECTIONS

For crops other than cucurbits, SONALAN should be mixed uniformly into the top two (2) to three (3) inches of soil. For cucurbits, SONALAN should be used only as a surface application. See surface application directions beginning on page ____.

Factors that influence uniform application and incorporation of SONALAN are:

Crop Residues or Existing Weeds: Ground cover, such as crop residues or existing weeds, can interfere with the incorporation of SONALAN into the soil. A manageable level of such ground cover will allow the SONALAN to be uniformly mixed into the top two (2) to three (3) inches of soil. If the level of the ground cover is such that this cannot be done, the soil must be tilled prior to the application of SONALAN.

Roughness: The soil surface should be smooth enough so that you can operate a sprayer and incorporation equipment efficiently and at speeds which ensure a uniform application and incorporation of SONALAN.

General Soil Conditions: To assure uniform incorporation of SONALAN, soil moisture conditions should be such that large clods can be broken up during the incorporation process.

INCORPORATION DIRECTIONS

Use incorporation equipment that thoroughly and uniformly mixes SONALAN into the top two (2) to three (3) inches of the seedbed, or erratic weed control and/or crop injury may result.

Incorporation Before Planting

Apply SONALAN up to three (3) weeks prior to planting. SONALAN should be thoroughly and uniformly mixed into the top two (2) to three (3) inches of the seedbed within two (2) days after application.

Incorporation In Bedded Culture

Application prior to bedding: Apply SONALAN and mix thoroughly into the top two (2) to three (3) inches of soil. The bedding operation provides additional mixing. Do not expose untreated soil during post-bedding operations.*

Application after bedding: Backfill to planting depth before applying SONALAN. Apply SONALAN and mix thoroughly with equipment that will maintain the bed shape. Do not expose untreated soil exposed.*

*If soil is removed from the seedbed during the planting operation, it would expose untreated soil, which weeds to germinate in the seedbed.

CULTIVATION AFTER PLANTING

Soil treated with SONALAN may be shallowly cultivated without reducing the weed control activity of SONALAN. Do not cultivate deeper than the treated soil since this may bring untreated soil to the surface and poor weed control may result.

RATE RECOMMENDATIONS

SOIL TEXTURE GUIDE

The amount of SONALAN applied will vary with the soil texture and organic matter. A fine textured soil will require more SONALAN per acre than a coarse soil. Choose the proper rate based on the following soil texture group and specific crop recommendations. Do not exceed recommended rates.

<u>Soil Texture Group</u>	<u>Soil Classification</u>
Coarse soils: (Light)	Sand, loamy sand, sandy loam
Medium soils:	Loam, silty clay loam*, silt loam, silt, sandy clay loam*
Fine soils: (Heavy)	Clay, clay loam, silty clay loam*, silty clay, sandy clay, sandy clay loam*

*Silty clay loam and sandy clay loam soils are transitional soils and may be classified as either medium or fine textured soils. If silty clay loam or sandy clay loam soils are predominately sand or silt, they are usually classified as medium textured soils. If they are predominately clay, they are usually classified as fine textured soils.

These recommendations are given as the broadcast rates of SONALAN per acre. Where a rate range is shown, use the lower rate for coarser textured soils or soils with lower organic matter. Use the higher rate, where a rate range is shown, on soils containing more than five percent (5%) organic matter. SONALAN is not recommended for use on soils containing more than 10% organic matter.

Handwritten: To grow from 1000 to 10000 lbs per acre

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BEAN (Dry Commercial and Dry Pea) -- SONALAN ALONE

SONALAN should be applied as a preplant incorporated treatment. See page for chemigation and surface application directions. Follow recommended soil preparation, application, and incorporation procedures for SONALAN.

General weed control - except groundcherry and nightshade:

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)
Coarse	1 1/2 - 2
Medium	2 - 2 1/2
Fine	2 1/2 - 3

For broader spectrum control, SONALAN may be used in combination with Amiben, Dual, Eptam or Lasso. Read the combination product label for directions, cautions and limitations prior to use.

Groundcherry and Nightshade control (annual) -- bean:

Two incorporation passes are required for groundcherry and nightshade control.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)
Coarse	3 - 3 1/2
Medium	3 1/2 - 4
Fine	4 - 4 1/2

For broader spectrum control, SONALAN may be used in combination with Amiben, Dual, Eptam or Lasso. Read the combination product label for directions, cautions and limitations prior to use.

Bean (Dry Commercial) -- SONALAN Amiben tank mix or overlay

SONALAN Amiben should be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by an Amiben overlay.

The SONALAN Amiben combination effectively controls the weeds listed for SONALAN alone for general weed control plus the additional weeds:

Common ragweed	Wild mustard
Pennsylvania smartweed	Black nightshade
Velvetleaf	

Follow recommended soil preparation, application, and incorporation procedures for SONALAN.

Broadcast Rates Per Acre

Soil Texture	SONALAN* (pints)	+	Amiben 2S (quarts)	or	Amiben DS (pounds)
Coarse	1 1/4 - 2		4 - 6**		2.4 - 3.6**
Medium	1 3/4 - 2 1/2		4 - 6		2.4 - 3.6
Fine	2 1/4 - 3		4 - 6		2.4 - 3.6

*Refer to page ____ for additional groundcherry and nightshade recommendations for SONALAN.

**Use the higher rate where heavy populations of smartweed, velvetleaf, ragweed, wild mustard, or black nightshade are expected. Read the Amiben label for directions, cautions and limitations prior to use.

Bean (Dry Commercial) -- SONALAN/Dual Tank Mix or Overlay

SONALAN/Dual should be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by a Dual overlay. The SONALAN/Dual combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Black nightshade	Southwestern cupgrass
Prairie cupgrass	Yellow nutsedge
Red rice	Galinsoga

Additional weeds partially controlled by this combination include:

Hairy nightshade	Sandbur
Volunteer sorghum	

Follow recommended soil preparation procedures for SONALAN. Apply the tank mix in at least 10 gallons of water per acre up to 14 days prior to planting. Incorporate the tank mix within two (2) days after application in the top two (2) inches of soil. When Dual is applied as an overlay to SONALAN, apply Dual after planting (behind the planter) prior to crop and weed emergence.

Broadcast Rates Per Acre

Soil Texture	SONALAN* (pints)	Dual 8E	
		Less than 3% O.M. (pints)	3% O.M. or Greater (pints)
Coarse	1 1/4 - 2	1 1/2 - 2	2
Medium	1 3/4 - 2 1/2	2 - 2 1/2	2 - 2 1/2
Fine	2 1/4 - 3	2 - 2 1/2	2 1/2 - 3

*Refer to page ____ for additional groundcherry and nightshade recommendations for SONALAN.

Read the Dual label for directions, cautions and limitations prior to use.

Bean (Dry Commercial) -- SONALAN/Eptam Tank Mix

The SONALAN/Eptam tank mix effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Nightshade (black and hairy)
Nutsedge (purple and yellow)

Follow recommended soil preparation and application directions for SONALAN. Incorporate the tank mix immediately after application.

Broadcast Rates Per Acre

Soil Texture	SONALAN* (pints)	+	Eptam 7E (pints)
Coarse	1 1/4 - 2		3 1/2
Medium	1 3/4 - 2 1/2		3 1/2
Fine	2 1/4 - 3		3 1/2

*Refer to page ____ for additional groundcherry and nightshade recommendations for SONALAN.

Read the Eptam label for directions, cautions and limitations prior to use. Eptam should not be used on soybean, blackeyed pea (bean), lima bean and other flatpodded beans, except Romano. Do not use the foliage from a crop treated with Eptam for feed or for grazing.

Bean (Dry Commercial) -- SONALAN/Lasso Tank Mix -- (For Use Only West of the Mississippi River, Except in Kern County, California)

SONALAN/Lasso should be applied as a preplant incorporated tank mix. The SONALAN/Lasso combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Galinsoga	Witchgrass
Black nightshade ^d	Florida pusley
Hairy nightshade ^d	Yellow nutsedge ^d
Red rice ^d	

Additional weeds partially controlled by this combination include:

Florida beggarweed	Large crabgrass
Cotton ragweed	Portulaca

^d See chart on page 16 for additional information on these weeds.

SONALAN/Lasso tank mix: Follow recommended soil preparation recommendations for SONALAN. Apply SONALAN/Lasso in a minimum of 15 gallons of water per acre and incorporate thoroughly into the top two (2) inches of soil. Apply the tank mix up to seven (7) days prior to planting.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN*</u> (pints)	+	<u>Lasso</u> (quarts)
Coarse	1 1/4 - 2		2 1/2 - 3
Medium	1 3/4 - 2 1/2		2 1/2 - 3
Fine	2 1/4 - 3		2 1/2 - 3

*Refer to page ____ for additional groundcherry and nightshade recommendations for SONALAN.

Use a minimum of two and one-half (2 1/2) quarts of Lasso on coarse soils and three (3) quarts on medium and fine soils to control these weeds.

Read the Lasso label for directions, cautions and limitations prior to use.

Dry Beans -- SONALAN Preplant Incorporated Followed by Basagran Postemergence Application

SONALAN should be applied preplant incorporated followed by a postemergence application of Basagran.

The SONALAN/Basagran combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Cocklebur	Ragweed
Jimsonweed	Tropic croton
Prickly sida	Velvetleaf

Consult the Basagran label for specific weed growth stage directions to achieve best results.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN*</u> (pints)	<u>Basagran**</u> (pints)
Coarse	1 1/2 - 2	2
Medium	2 - 2 1/2	2
Fine	2 1/2 - 3	2

*Refer to page ____ for special instructions for eastern black nightshade

**Apply Basagran as follows for optimum results:

Do not treat earlier than weed stage indicated on Basagran label. Add oil concentrate according to label use directions.

Read the Basagran label for additional weeds controlled, directions, cautions and limitations prior to use.

SOYBEAN -- SONALAN Alone

General weed control -- except groundcherry and nightshade:

SONALAN should be applied as a preplant incorporated treatment. Follow recommended soil preparation, application, and incorporation procedures for SONALAN.

For broader spectrum weed control, SONALAN may be used in combination with Amiben, Basagran, Blazer, Dual, Lasso, Lexone, Lorox, Sencor and Vernam. Read the combination product label for directions, cautions and limitations prior to use.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)
Coarse	1 1/2 - 2
Medium	2 - 2 1/2
Fine	2 1/2 - 3

Eastern Black Nightshade - Partial Control:

SONALAN should be applied as a preplant incorporated treatment for partial control of nightshade in medium and fine textured soils. Follow recommended soil preparation and application procedures for SONALAN. Two incorporation passes are required for partial control of eastern black nightshade. For broader spectrum weed control, SONALAN may be used in combination with Amiben, Basagran, Blazer, Dual, Lasso, Lexone, Sencor and Vernam. Read the combination product label for directions, cautions and limitations prior to use.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)
Medium	3
Fine	4 - 5

Soybean -- SONALAN/Amiben Tank Mix or Overlay

SONALAN/Amiben should be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by an Amiben overlay. The SONALAN/Amiben combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Common ragweed	Velvetleaf	Black nightshade
Pennsylvania smartweed	Wild mustard	

Broadcast Rates Per Acre

Soil Texture	SONALAN (pints)	+	Amiben 2S (quarts)	or	Amiben DS (pounds)
Coarse	1 1/4 - 2		4 - 6**		2.4 - 3.6**
Medium	1 3/4 - 2 1/2*		4 - 6		2.4 - 3.6
Fine	2 1/4 - 3*		4 - 6		2.4 - 3.6

*Refer to page ___ for special instructions for eastern black nightshade.

**Use the higher rate where heavy populations of smartweed, velvetleaf, ragweed, wild mustard or black nightshade are expected. Read the Amiben label for directions, cautions and limitations prior to use.

Soybean - SONALAN Dual Tank Mix or Overlay

SONALAN Dual should be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by a Dual overlay. The SONALAN/Dual combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Black nightshade	Southwestern cupgrass
Prairie cupgrass	Yellow nutsedge
Red rice	Chenopod

Additional weeds partially controlled by this combination include:

Airy plantain	Field bindweed
Common cocklebur	

For best results, apply Dual preplant incorporated with SONALAN. Apply the tank mix at least 10 days before planting or water per acre 10 to 15 days prior to planting. For best results, the tank mix should be applied 10 to 15 days after application in the top two inches of soil. When Dual is applied as an overlay to SONALAN, apply Dual after the SONALAN has been incorporated into the soil for general weed emergence.

Broadcast Rate, Per Acre

Soil Texture	SONALAN (pints)	Dual	
		Less than 3% O.M. (pints)	3% O.M. or Greater (pints)
Coarse	1 1/4 - 2	1 1/2 - 2	2
Medium	1 3/4 - 2 1/2*	2 - 2 1/2	2 - 2 1/2
Fine	2 1/4 - 3*	2 - 2 1/2	2 1/2 - 3

*Refer to page ____ for special instructions for eastern black nightshade.

Read the Dual label for directions, cautions and limitations prior to use.

Soybean -- SONALAN/Lasso Tank Mix or Overlay

SONALAN Lasso should be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by a LASSO overlay. The SONALAN/Lasso combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Galinsoga	Witchgrass
Black nightshade ^a	Florida pusley ^b
Hairy nightshade ^a	Yellow nutsedge
Red rice	

Additional weeds partially controlled by this combination include:

Florida beggarweed	Spiny sida (teaweed)
Common ricebel	Smartweed

^a or ^b See beneath the rate table for additional Lasso directions.

SONALAN Lasso tank mix: Follow recommended soil preparation recommendations for SONALAN. Apply SONALAN/Lasso in a minimum of 15 gallons of water or liquid fertilizer per acre and incorporate thoroughly into the top two (2) inches of soil. Apply the tank mix up to seven (7) days prior to planting.

SONALAN preplant incorporated tank mix or overlay: Apply and incorporate SONALAN as recommended under soil preparation application and incorporation procedures.

SONALAN Lasso Tank Mix (preplant incorporated)

Broadcast Rates Per Acre

Soil Texture	SONALAN (pint)	Lasso (pints)
Coarse	1 1/4 - 2	2
Medium	1 3/4 - 2 1/2*	2 - 2 1/2
Fine	2 1/4 - 3*	2 1/2 - 3

SONALAN Preplant Incorporated Followed by Lasso Overlay

Broadcast Rates Per Acre

Soil Texture	SONALAN (pints)	Lasso	
		Less than 3% Organic Matter (quarts)	3% or More Organic Matter (quarts)
Coarse	1 1/4 - 2	2	2
Medium	1 2/3 - 2 1/2*	2 1/2	2 1/2 - 3
Fine	2 1/2 - 3*	3	3 - 4

*Refer to page ____ for special instructions for eastern black nightshade.

^aUse a minimum of two and one-half (2 1/2) quarts of Lasso to control these weeds.

^bUse three (3) to four (4) quarts of Lasso per acre applied alone or, on medium and fine textured soils, in tank mix combination preplant incorporated only for control of these weeds.

Read the Lasso label for directions, cautions and limitations prior to use.

Soylean -- SONALAN/Lexone or SONALAN Sencor Tank Mix or Overlay

SONALAN plus Lexone or Sencor may be applied as a preplant incorporated tank mix or SONALAN preplant incorporated followed by a Sencor or Lexone overlay. Do not allow SONALAN Sencor or SONALAN Lexone tank mix to remain in the tank overnight. The SONALAN/Lexone or SONALAN/Sencor combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Mimosa	Deep-seeded
Yarrow	Pennsylvania smartweed
Wild mustard	Prickly sida
Velvetleaf	Velvetleaf

Control of marestail, common ragweed, and giant ragweed may be erratic, ranging from fair to excellent depending upon soil temperature, time of weed germination, depth of seed seed in the soil and the amount of tilling or soil moisture. Control is improved with timely cultivation.

Follow the label for application, cultivation and incorporation directions for SONALAN.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u>	<u>Lexone 50W/4L</u>	<u>Lexone Dry Flowable</u>
	<u>(pints)</u>	<u>+ or Sencor 50WP/4</u>	<u>or Sencor Dry Flowable</u>
		<u>(pounds or pints)</u>	<u>(pounds)</u>
Coarse	1 1/4 - 2	1/2**	1/3**
Medium	1 3/4 - 2 1/2*	3/4	1/2
Fine	2 1/4 - 3*	1	2/3

*Refer to page ____ for special instructions for eastern black nightshade.

**Do not use Sencor/Lexone on coarse soils with less than one percent (1%) organic matter.

Additional Precaution: For Sencor/Lexone tank mixes, do not plant any crop other than soybeans within four (4) months after treatment. Over application, uneven application, or improper soil incorporation may result in crop injury, soil residue, or erratic weed control. Seedling disease, cold weather, deep planting, excessive moisture, soil pH over seven and one-half (7.5), high salt concentration or drought may weaken crop seedlings and increase possibility of damage from the SONALAN/Sencor or SONALAN/Lexone tank mix. Under these conditions, delayed crop development or reduced yields may result. Read the Sencor and Lexone labels for directions, cautions and limitations prior to use. Do not use the foliage from soybeans treated with Sencor or Lexone for feed or forage.

Soybean -- SONALAN Preplant Incorporated Followed by Lorox Overlay

SONALAN should be applied preplant incorporated followed by a Lorox overlay. The SONALAN Lorox combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Florida beggarweed
Common ragweed
Smartweed

Follow recommended mixing, preparation, application, and incorporation procedures for SONALAN. When Lorox is applied as an overlay to SONALAN, apply Lorox at a recommended application prior to crop and weed emergence. Read the Lorox label for directions, cautions and limitations prior to use.

Read label for Acre

Soil Texture	SONALAN (pints)	Lorox L	
		1 to 2 Organic Matter (pints)	2 to 5 Organic Matter** (pints)
Coarse	1 1/4 - 2	1 - 1 1/2	1 1/2 - 3
Medium	1 3/4 - 2 1/2*	1 1/4 - 2 1/4	2 - 3
Fine	2 1/4 - 3*	1 1/2 - 2 1/2	2 1/2 - 3

*Refer to page ____ for special instructions for eastern black nightshade.

**Over 5% organic matter use 6 pints Lorox L.

Soybean -- SONALAN/Vernam Tank Mix

SONALAN/Vernam effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Annual morningglory	Yellow nutsedge
Sicklepod	Purple nutsedge
	Velvetleaf

Apply SONALAN/Vernam in at least 10 gallons per acre of water or liquid fertilizer. Follow recommended soil preparation procedures. Incorporate the tank mix immediately following application. Read the Vernam label for additional directions, cautions and limitations prior to use.

Broadcast Rates Per Acre

Soil Texture	SONALAN (pints)	+	Vernam 7E (pints)
Coarse	1 1/4 - 2		2 1/3
Medium	1 3/4 - 2 1/2*		3
Fine	2 1/4 - 3*		3

*Refer to page ____ for special instructions for eastern black nightshade.

Soybean -- SONALAN Preplant Incorporated Followed by Basagran Postemergence Application

SONALAN should be applied preplant incorporated followed by a postemergence application of Basagran.

The SONALAN Basagran combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Blackberry	Bigweed
Hempweed	Ironweed
Prickly sida	Velvetleaf

Consult the Basagran label for specific weed control directions to achieve best results.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)	<u>Basagran**</u> (pints)
Coarse	1 1/2 - 2	2
Medium	2 - 2 1/2*	2
Fine	2 1/2 - 3*	2

1 1/2 1/4

*Refer to page ____ for special instructions for eastern black nightshade

**Apply Basagran as follows for optimum results:

Do not treat earlier than weed stage indicated on Basagran label. Add oil concentrate according to label use directions.

Read the Basagran label for additional weeds controlled, directions, cautions and limitations prior to use.

Soybean -- SONALAN Preplant Incorporated Followed by Blazer Postemergence Application

SONALAN should be applied preplant incorporated followed by a postemergence application of Blazer.

The SONALAN Blazer combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Balloonyvine	Morningglory
Tropic croton	Ragweed
Woody croton	Smartweed
Hempweed	

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pints)	<u>Blazer**</u> (pints)
Coarse	1 1/2 - 2	2
Medium	2 - 2 1/2*	2
Fine	2 1/2 - 3*	2

*Refer to page ____ for special instructions for eastern black nightshade.

**Apply Blazer as follows for optimum results:

1. Apply when weeds are at 2-4 leaf stage and actively growing.

2. Apply when weeds are 2-4 inches high.

3. Do not apply if rain is expected within 24 hours.

4. Do not use during periods of dry weather when crop and weeds are under stress.

5. Do not apply when temperature is below 70°F.

Read the Blazer label for additional directions, cautions and limitations prior to use.

SONALAN--SURFACE APPLICATION

WEEDS CONTROLLED BY SONALAN

SONALAN surface applied after planting will control the following weeds:

Grasses:

Crabgrass (Large crabgrass) (Smooth crabgrass)	(Digitaria spp.)
Goosegrass	(Eleusine indica)
Foxtail millet	(Setaria italica)
Johnsongrass (from seed)	(Sorghum halepense)
Panicum, fall	(Panicum dichotomiflorum)
Panicum, Texas (Buffalograss) (Colorado grass)	(Panicum texanum)
Signalgrass, broadleaf (Brachiaria)	(Brachiaria platyphylla)

Broadleaf Weeds:

Carpetweed	(Mollugo verticillata)
Lacksquarters, common	(Chenopodium album)
Pigweed (Prostrate pigweed) (Upright pigweed) (Spiny pigweed)	(Amaranthus spp.)
Portulaca, common	(Portulaca oleraceae)
Richardia, common	(Richardia scabra)

ACTIVATION DIRECTIONS

Irrigated Agriculture: Where overhead sprinkler irrigation (solid set, center pivot or continuous flow lateral move) is used, activate SONALAN with a minimum of one-half inch (1/2") of irrigation water within two (2) days after application. For flood or furrow irrigation, refer to Non-Irrigated Agriculture activation directions below. Irrigated fields may be shallowly cultivated without loss of SONALAN activity.

Non-Irrigated Agriculture: A single, one-half inch (1/2") rainfall within five (5) days of application is necessary to activate SONALAN. If a single one-half inch (1/2") rainfall is not received, a shallow cultivation will activate SONALAN. Rainfall activated SONALAN may be shallowly cultivated without loss of activity.

RATE RECOMMENDATIONS

CUCURBIT (Direct Seeded Only) -- SONALAN Alone

Cantaloupe
Cucumber
Pumpkin
Watermelon

SONALAN should be used only as a postplant surface applied herbicide prior to crop and weed emergence. SONALAN should not be applied in chemigation systems for weed control in cucurbits. Refer to page ____ for activation directions for SONALAN.

Broadcast Rates for Acre

<u>Soil Texture</u>	<u>SONALAN</u> <u>(lb/acre)</u>
Coarse	1
Medium	2
Fine	3 - 4

Precaution: Do not apply SONALAN to any crop or soil which has been treated with a herbicide containing a phosphorus compound within 30 days of application.

SONALAN PERFORMANCE GUARANTEE

A Limited Warranty of SONALAN Weed and Grass Control

Elanco Products Company warrants that SONALAN will control the weeds and grasses as indicated on its current label when used according to label directions and subject to the following limitations:

1. Purchaser must notify Elanco promptly if a lack of satisfactory control occurs. Notice must be given within ninety days after the first planting or after application of SONALAN to the treated crop, whichever occurs later.
2. An Elanco representative must be satisfied that Purchaser used SONALAN according to the label directions and must visually observe unsatisfactory control of weeds in the field.
3. The Purchaser must provide an Elanco representative with an invoice or other satisfactory record which shows the price and quantity of SONALAN purchased.
4. Elanco's liability will be limited to a refund of the purchase price of the SONALAN applied to the acreage on which weed control was not satisfactory or, at the option of the Purchaser, a refund of an equivalent amount of SONALAN.
5. Void outside the USA.

DISCLAIMER OF WARRANTIES

The warranty printed above is the only warranty applicable to this product. All other warranties, expressed or implied, including, but not limited to, any implied warranties of merchantability and fitness for a particular purpose, are disclaimed.

LIMITATION OF DAMAGES

Elanco's liability, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the return of the amount of the purchase price of the SONALAN and under no circumstances shall Elanco be liable for special, indirect or consequential damages.

INHERENT RISKS OF USE

Failure to carefully follow the directions for use of SONALAN, as well as other factors such as seedling disease, cold weather, deep planting, excessive moisture, high salt concentration, sodic soils or drought may result in unsatisfactory weed control or crop injury. Reduced yields may result under these conditions.

Amiben[®] - chloramben, Union Carbide Agricultural Products Company, Inc.
Basagran[®] - bentazone, BASF Wyandotte Corporation
Blazer[®] - acifluorfen, Rohm and Haas Company
Butl[®] - butachlor, Ciba-Geigy Corporation
Captan[®] - EIC, Stauffer Chemical Company
Dactol[®] - dacthal, Monsanto Company
Lexone[®] - metolachlor, E. I. du Pont de Nemours and Company
Lorol[®] - lachlor, E. I. du Pont de Nemours and Company
Pencon[®] - penconazole, ICI
Vernac[®] - vernix, Stauffer Chemical Company

<p align="center">U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF PESTICIDES PROGRAMS REGISTRATION DIVISION (WH-567) WASHINGTON, D.C. 20460</p> <p>NOTICE OF PESTICIDE: <input type="checkbox"/> REGISTRATION <input type="checkbox"/> REREISTRATION</p> <p align="center"><i>(Under the Federal Insecticide, Fungicide and Rodenticide Act, as amended.)</i></p>	EPA REGISTRATION NO.	DATE OF ISSUANCE NOV 28 1983
	TERM OF ISSUANCE	
	NAME OF PESTICIDE PRODUCT	
NAME AND ADDRESS OF REGISTRANT (Include ZIP code) <div style="border: 1px solid black; height: 100px; width: 100%;"></div>		
<p>NOTE: Changes in labeling formula differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above U.S. EPA registration number.</p>		
<p>On the basis of information furnished by the registrant, the above named pesticide is hereby Registered/Reregistered under the Federal Insecticide, Fungicide, and Rodenticide Act.</p> <p>A copy of the labeling accepted in connection with this Registration/Reregistration is returned herewith.</p> <p>Registration is in no way to be construed as an endorsement or approval of this product by this Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.</p> <div style="border: 1px solid black; height: 300px; width: 100%;"></div>		
<div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> ATTACHMENT IS APPLICABLE </div> <div> DATE NOV 28 1983 </div> </div>		