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ACCEPTED
SEP 11 1985
Under the Federal Insecticide,
Fungicide, and Rodenticide Act,
as amended, for the pesticide
registered under
EPA Reg. No. 1471-152

ELANCO

0000
ID 5036

Herbicide

Sonalan

E.C.

TM

Net Contents 2 1/2 Gallons 000

Dry
Flowable

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

Active Ingredient:

ethalfluralin* N-ethyl-N-(2-methyl-2-propenyl)-2,6-
dinitro-4-(trifluoromethyl)benzenamine 35.1% 50Z ✓

Inert Ingredients 64.9% 50Z

0.5 Contains 0.5 pounds active ingredient per gallon pounds

*Sonalan®—the registered trademark for Elanco Products ethalfluralin

Keep Out of Reach of Children.

WARNING

See back of container for additional precautionary statements.

WS 1003 AMX 000

EPA Reg. No. 1471-122 000
EPA Est. 1471-IN-2 00C
FN 0802 00C

APR 24 1985

161*** / DF**50 / LABELS / US / F3065 / 1

Keep out of reach of children.

CAUTION: Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing dust and contact with skin or eyes. Use eye protection and protective clothing such as coveralls, a long-sleeved shirt and impermeable gloves when handling this product.

First Aid:

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. 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. If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention.

Directions for Use

See literature on side of container for complete directions for use.

Read all directions carefully before applying.

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

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING

~~Garden E-3 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. The active ingredient, ethion, may cause skin irritation. Wash skin immediately with plenty of water. Use protective clothing such as coveralls, long-sleeved shirt, and impermeable gloves when handling or using the product. If in eyes, flush eyes with plenty of water. If on skin, wash with plenty of soap and water. If inhaled, get medical attention.~~

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 AND DISPOSAL

~~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. Store in original container only. In case of leak or spill, use absorbent material to contain liquids and dispose as waste.~~

~~Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess material (e.g., spray mixture, or rinsate) is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.~~

~~Container Disposal: 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.~~

The manufacturer makes no warranties, express or implied, concerning this product or its use which extend beyond the description on the label or in literature published by Elanco Products Company, and all statements made concerning this product apply only when used as directed. Elanco Products Company expressly disclaims all warranties, express or implied, in relation to any use of the product in combination or sequential use with any other product not specifically recommended in writing by Elanco Products Company. If used in a combination or sequential use recommended by Elanco Products Company, the liability of Elanco shall in no manner extend to any damage loss or injury not directly caused by the inclusion of the Elanco product in such combination or sequential use.

Elanco Products Company • A Division of Eli Lilly and Company
Indianapolis, IN 46285, U.S.A.

WS 1108-AMM-000
LP 3143-AMM-000
JD 1028-000

STORAGE AND DISPOSAL

Storage: Store in original container only. In case of leak or spill, contain material and dispose as waste.

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: 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.

ELANCO

ID 0000

SONALAN® Dry Flowable Herbicide**Active Ingredient:**

ethalfluralin* N-ethyl-N-(2-methyl-2-propenyl)-2,6-dinitro-4
(trifluoromethyl)benzenamine-----50%
inert ingredients-----50%

Contains 0.5 pound active ingredient per pound.

A selective herbicide for preemergence control of 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
Lilly Corporate Center
Indianapolis, Indiana 46285, USA

*SONALAN® - the registered trademark for Elanco Products Company
ethalfluralin

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SONALAN® Dry Flowable

E.P.A. Reg. No. 1471-000

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Crop Recommendations:

Soybean:

- SONALAN Alone
- Groundcherry and Nightshade Control-Special Instructions
- SONALAN/Amiben®
- SONALAN/Dual®
- SONALAN/Lasso®
- SONALAN/Lexone®
- SONALAN/Sencor®
- SONALAN/Lasso®/Lexone®
- SONALAN/Lasso®/Sencor®
- SONALAN/Dual®/Lexone®
- SONALAN/Dual®/Sencor®
- SONALAN/Lorox®
- SONALAN/Vernam®
- SONALAN/Basagran®
- SONALAN/Blazer®

Dry Bean

- SONALAN Alone
- Groundcherry and Nightshade Control-Special Instructions
- SONALAN/Amiben®
- SONALAN/Dual®
- SONALAN/Eptam®
- SONALAN/EPTC®
- SONALAN/Lasso®
- SONALAN/Basagran®

Sunflower:

- SONALAN Alone
- SONALAN/Amiben®
- SONALAN/Eptam®
- SONALAN/EPTC

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

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PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals:

Keep out of reach of children.

CAUTION: Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing dust and contact with skin or eyes. Use eye protection and protective clothing such as coveralls, a long-sleeved shirt and impermeable gloves when handling this product.

First Aid:

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. 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. If inhaled: Remove individual to fresh air. If breathing difficulty occurs, get medical attention.

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 and Disposal:

Storage: Store in original container only. In case of leak or spill, contain material and dispose as waste.

Pesticide Disposal: Do not contaminate water, food or feed by storage or disposal. Waste resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: 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.

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 sprayer. Fill the spray tank three-fourths (3/4) full with clean water. Start agitation and increase pump speed to operating pressure. Add the correct quantity of SONALAN Dry Flowable from the original package. Do not premeasure SONALAN Dry Flowable into a larger container or enlarge the container opening. Continue agitation and finish filling the tank. Maintain agitation from mixing through application. Induction systems on custom application equipment may be used to disperse dry flowable in water.

When the sprayer tank opening is directly above the outlet port, fill the spray tank three-fourths (3/4) full with clean water. Do not start the sprayer or agitation. Add the correct quantity of SONALAN Dry Flowable from the original package and allow the SONALAN Dry Flowable particles to wet as they settle to the bottom of the tank. Finish filling the tank. Start and maintain agitation until the tank is empty. If the in line strainer becomes clogged, remove the screen and rinse in the spray tank. Replace the screen. Restart the sprayer and continue agitation.

SONALAN TANK MIX

Vigorous, continuous agitation is required for all tank mixes. Sparger pipe agitators generally provide the best agitation in spray tanks. During filling, to prevent foaming, avoid stirring or splashing air into the mixture 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 three-fourths (3/4) full with clean water. Start agitation and increase pump speed to operating pressure. Add SONALAN Dry Flowable, then add other dry flowables, wettable powders (WP), aqueous suspensions (AS), flowables (FL), liquids (L), solutions (S), and emulsifiable or liquid concentrate (EC) or (LC) in this order to the water and agitate continuously until the product(s) are completely dispersed in the water. Maintain agitation from filling through application. If spraying and agitation must be stopped before the tank is empty, the materials may settle to the bottom. In this case, it is important to suspend again all of the material in the bottom of the tank before continuing the spray application. Sometimes it is more difficult to resuspend settled material than it is to suspend it originally. A sparger agitator is particularly useful for this purpose.

Read and carefully follow all label instructions for each material added to the tank. Premixing 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 water. In-line screens in the tank should be no finer than 16 mesh (16 mesh has bigger openings than 50 mesh).

If a buildup of material is seen on the walls of the spray tank, wash the tank with soapy water between fillings. Rinse and continue the spraying operation. Clean 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 Dry Flowable 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 Instructions: In all cases, vigorous and continuous agitation is required to mix SONALAN Dry Flowable with the liquid fertilizer. SONALAN Dry Flowable may be applied alone in liquid fertilizer without a compatibility agent. The use of a compatibility agent is especially important when tank mixing SONALAN Dry Flowable with emulsifiable concentrates and liquid concentrates. See the liquid fertilizer compatibility test below. If the emulsion is not properly formed, the EC/LC may rise to the surface of the fertilizer as an oil ("oils out"), the oil may combined with the SONALAN Dry Flowable, wettable powder, liquid, flowable or aqueous suspension to form oily curds (viscous phase) which are difficult to disperse.

Any one of the compatibility agents listed below is helpful in causing emulsifiable and liquid 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 containing SONALAN Dry Flowable 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)
8. Blendex™ (Helena Chemical Co., Cayce-West Columbia, SC)
9. Spray-Aide™ (Miller Chemical and Fertilizer Corp., Hanover, PA)

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 nine (9) 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 (1) pint of the liquid fertilizer in a quart jar.
2. Add one (1) to four (4) teaspoonful(s) of the dry flowable, WP, L, F, or AS formulations (depending on the recommended rate per acre) to the liquid fertilizer. Close jar and agitate until dispersed evenly in the fertilizer. If the materials do not disperse well, it may be necessary to slurry the chemicals 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.

CHEMIGATION

SONALAN Dry Flowable may be applied for weed control through center pivot and solid set sprinkler-irrigation systems. Apply at rates recommended on this label. Prepare mixture with one (1) part water to one (1) part product. Injecting a larger volume of a more dilute slurry per hour will assure more accurate calibration of metering equipment. Maintain sufficient agitation to keep the herbicide in suspension. Meter slurry into irrigation water during entire period. Apply SONALAN in a minimum of one inch (1") of irrigation water. The following precautions and recommendations must be followed to chemigate SONALAN.

1. Apply only through properly maintained irrigation systems having continuously moving laterals and providing uniform distribution of water. Where a system does not provide uniform water distribution such as at the extreme ends of the lateral, around supports, where treated discharge water is released from water-powered motors, or where extreme changes in elevation occur, unacceptable weed control or crop injury may occur.
2. Apply the product only through irrigation systems containing anti-siphon and check valves, to prevent water source contamination and overflow and siphoning of the slurry tank, and interlocking controls between the metering device and the water pump, to insure simultaneous shut-off.
3. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to insure adequate mixing.
4. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the pesticide from the zone of effectiveness.
5. Do not apply when wind speed favors drift, when system connections or fittings leak, when nozzles do not provide uniform distribution, or when lines containing the product should be dismantled and drained. Use of low trajectory angle sprinkler or drop nozzles will decrease the likelihood of drift.
6. Greater accuracy in pesticide calibration and distribution will be achieved by injecting a larger volume of more dilute slurry per hour.
7. Constant agitation should be maintained in the slurry tank during the entire period of pesticide application.
8. Sample calculation: one hundred thirty-five (135) acres to be covered by irrigation system.

Recommended rate of 1.5 pounds per acre times 135 acres equals 202.5 pounds of product.

Prepare slurry mixes using one (1) part water to one (1) part product and add to water in 90 gallon nurse tank using the entire 202.5 pounds of product. Apply the entire 90 gallons to 135 acres.

Irrigation system requires 20 hours to apply 0.5 inch of water to 135 acres.

Injection rate equals 500 gallons ÷ 20 hours equals 25 gallons per hour or 53.33 fluid ounces to be injected per minute.

Calibrate injection pump to deliver the herbicide mix into the irrigation system at the rate of 53.33 fluid ounces per minute.

9. Posting Requirements: Areas being treated with pesticides applied through irrigation systems must be posted at the usual entrances to the area, at bulletin boards where workers assemble and where the treated area lies adjacent to roads, residential areas, or any other areas such as schools, parks or other public facilities. Posted signs must be legible from 25 feet away and be printed in English and any other appropriate language such as Spanish. Signs must be posted prior to application, during application and for at least one week after application, but may remain in place indefinitely. The sign must indicate the following:

NOTICE

Pesticides are applied in irrigation water in this field. Do not enter this field when the irrigation system is operating. Do not drink, bathe in or play in water or in furrows, puddles, ponds, canals or ditches associated with this irrigation system.

SONALAN -- PREPLANT INCORPORATED APPLICATION

WEEDS CONTROLLED:

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 (from seed)	(Sorghum halepense)
Junglerice	(Echinochloa colonum)
Oat, wild ¹	(Avena fatua)
Panicum, fall	(Panicum dichotomiflorum)
Panicum, Texas (Buffalograss) (Colorado grass)	(Panicum texanum)
Ryegrass, Italian (Annual ryegrass)	(Lolium multiflorum)
Shattercane (Wild cane)	(Sorghum bicolor)
Signalgrass, broadleaf (Brachiaria)	(Brachiaria platyphylla)
Witchgrass	(Panicum capillare)

Broadleaf Weeds:

Buckwheat, wild	(Polygonum convolvulus)
Carpetweed	(Mollugo verticillata)
Catchfly, conical	(Silene conica)
Chickweed, common	(Stellaria media)
Fiddleneck tarweed	(Amsinckia lycepsoides)
Groundcherry ² (Annual) (Lanceleaf groundcherry) (Wright's groundcherry)	(Physalis lanceifolia) (Physalis Wrightii)
Henbit	(Lamium amplexicaule)
Kochia	(Kochia scoparia)
Lambsquarters, common	(Chenopodium album)
Nightshade ² (annual) (Black nightshade) (Eastern black nightshade) ³ (Hairy nightshade)	(Solanum spp.)

Pigweed	(Amaranthus spp.)
(Prostrate pigweed)	
(Redroot pigweed)	
(Smooth pigweed)	
(Tumble pigweed)	
Purslane, common	(Portulaca oleracea)
Pusley, Florida	(Richardia scabra)
Rockpurslane, redmaids	(Calandrinia caulescens)
Thistle, Russian	(Salsola kali)

- ¹ (SONALAN will provide wild oat control except those germinating below the SONALAN treated zone.)
- ² (See page ____ for special instructions for control in dry bean.)
- ³ (See page ____ for special instructions for partial control in soybean.)

SOIL PREPARATION -- GENERAL DIRECTIONS

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.

SOIL MIXING 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 the 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: Knock off beds to planting height before applying SONALAN. Apply SONALAN and mix thoroughly with equipment that will conform to the bed shape. Do not leave untreated soil exposed.*

*Avoid removal of treated soil from the seedbed before or during the planting operation. This would expose untreated soil, allowing weeds to germinate in the drill row.

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.

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.

CROP RECOMMENDATIONS

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> (pounds)
Coarse	1.1 - 1.5
Medium	1.5 - 1.9
Fine	1.9 - 2.2

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> (pounds)
Medium	2.2
Fine	2.6

Note:
(1.2 # a.i. max)

Soybean Precautions: Soybeans should be planted no more than two (2) inches deep after early season adverse weather conditions have passed, especially when using higher rate programs. Excessively deep planting or cool, wet weather early in the growth cycle causes additional stress to the soybean plant. These factors may result in reduced stands, delayed maturity and reduced yields.

Soybean -- SONALAN/Amiben Tank Mix or Overlay

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

Black nightshade
Common ragweed
Pennsylvania smartweed

Velvetleaf
Wild mustard

Broadcast Rates Per Acre

Soil Texture	SONALAN		Amiben	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	Amiben 2S (quarts)	Amiben DS (pounds)
Coarse	0.9 - 1.5	N/A	4 - 6**	2.4 - 3.6**
Medium	1.3 - 1.9	2.2*	4 - 6	2.4 - 3.6
Fine	1.7 - 2.2	2.6* + 1.3* <i>1.2 lb. mt.</i>	4 - 6	2.4 - 3.6

*Two incorporation passes are required for partial control of 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 treatment or SONALAN preplant incorporated followed by a Dual overlay treatment. 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		Dual 8E	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	Less than 3% O.M. (pints)	3% O.M. or Greater (pints)
Coarse	0.9 - 1.5	N/A	1 1/2 - 2	2
Medium	1.3 - 1.9	2.2*	2 - 2 1/2	2 - 2 1/2
Fine	1.7 - 2.2	2.6* <i>1.2% limit</i>	2 - 2 1/2	2 1/2 - 3

* Two incorporation passes are required for partial control of 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 treatment or SONALAN preplant incorporated followed by a Lasso overlay treatment. The SONALAN/Lasso combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Galinsoga	Witchgrass
Black nightshade ¹	Florida pusley
Hairy nightshade ¹	Yellow nutsedge ²
Red rice ¹	

¹ or ² Check beneath the rate tables for additional Lasso directions

Additional weeds partially controlled by this combination include:

Florida beggarweed	Spiny sida (teaweed)
Common ragweed	Smartweed

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 followed by Lasso overlay: Apply and incorporate SONALAN according to recommended soil preparation application and incorporation procedures.

Sonalan/Lasso Tank Mix Preplant Incorporated

Broadcast Rates per Acre

Soil Texture	SONALAN		Lasso EC/ Micro-Tech™
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	(quarts)
Coarse	0.9 - 1.5	N/A	2 1/2
Medium	1.3 - 1.9	2.2*	3 - 3 1/2
Fine	1.7 - 2.2	2.6*	3 1/2 - 4

* Two incorporation passes are required for partial control of eastern black nightshade.

SONALAN Preplant Incorporated Followed by Lasso Overlay

Broadcast Rates per Acre

Soil Texture	SONALAN		Lasso EC/Micro-Tech™	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	Less Than 3% O.M. (quarts)	3% O.M. or Greater (quarts)
Coarse	0.9 - 1.5	N/A	2	2
Medium	1.3 - 1.9	2.2*	2 1/2	2 1/2 - 3
Fine	1.7 - 2.2	2.6*	3	3 - 4

* Two incorporation passes are required for partial control of eastern black nightshade.

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

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

² Use 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.

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

SONALAN plus Lexone or Sencor should be applied as a preplant incorporated tank mix treatment or SONALAN preplant incorporated followed by a Lexone or Sencor overlay treatment. Do not allow SONALAN/Lexone or SONALAN/Sencor 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:

Jimsonweed
Venice mallow
Wild mustard
Common ragweed

Hemp sesbania
Pennsylvania smartweed
Prickly sida
Velvetleaf

Control of cocklebur, morningglory, and giant ragweed may be erratic, ranging from poor to excellent depending upon soil temperature, time of weed germination, depth of weed seed in the soil and the amount and timing of soil moisture. Control may be improved with timely cultivation.

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

Broadcast Rates Per Acre

Soil Texture	SONALAN		Lexone or Sencor	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	Lexone 50W/4L or Sencor 50WP/4 (pounds or pints)	Lexone Dry Flowable or Sencor Dry Flowable (pounds)
Coarse	0.9 - 1.5	N/A	1/2**	1/3**
Medium	1.3 - 1.9	2.2*	3/4	1/2
Fine	1.7 - 2.2	2.6* <i>1.2 - 1.5</i>	1	2/3

* Two incorporation passes are required for partial control of 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/Lasso/Lexone or SONALAN/Lasso/Sencor Tank Mix

SONALAN plus Lasso and Lexone or Sencor should be applied as a preplant incorporated tank mix treatment. Do not allow the SONALAN/Lasso/Lexone or Sencor tank mix to remain in the tank overnight.

SONALAN/Lasso/Lexone or Sencor controls those weeds listed for SONALAN alone for general weed control plus these additional weeds:

Black nightshade¹
 Crowfootgrass
 Galinsoga
 Hairy nightshade¹
 Jimsonweed
 Mallow, Venice
 Mustard, wild

Red rice²
 Sesbania
 (Coffeebean)
 (Coffeeweed)
 Shepherds purse
 Pennsylvania Smartweed
 Spotted spurge
 Spurred anoda
 Velvetleaf
 Yellow nutsedge²

Additional weeds partially controlled by this combination include:

Common ragweed
 Florida Beggarweed

Spiny Sida (teaweed)

¹ or ² Check beneath rate table for additional information.

Follow recommended soil preparation recommendations for SONALAN. Apply the tank mixes in a minimum of 15 gallons of water or liquid fertilizer per acre. Set equipment to mix the soil no deeper than four inches. Apply the tank mix up to seven (7) days prior to planting.

Broadcast Rates Per Acre

Soil Texture	SONALAN		Lasso EC/ Micro-Tech™	Lexone or Sencor	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	(quarts)	Lexone 4L or Sencor 4 (pints)	Lexone Dry Flowable or Sencor Dry Flowable (pounds)
Coarse	0.9 - 1.5	N/A	2 1/2	1/2**	1/3**
Medium	1.2 - 1.9	2.2*	3 - 3 1/2	3/4	1/2
Fine	1.7 - 2.2	2.6*	3 1/2 - 4	1	2/3

* Two soil mixing passes are required for partial control of eastern black nightshade.

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

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

² Use three (3) to four (4) quarts of Lasso per acre on medium and fine textured soils to control these weeds.

Read the SONALAN, Lasso, Sencor and Lexone label for additional directions, cautions and limitations prior to use.

Soybean - SONALAN/Dual/Lexone or SONALAN/Dual/Sencor Tank Mix

SONALAN plus Dual and Lexone or Sencor should be applied as a preplant incorporated tank mix treatment. Do not allow the SONALAN/Dual/Lexone or Sencor tank mix to remain in the tank overnight.

SONALAN/Dual/Lexone or Sencor controls those weeds listed for SONALAN alone for general weed control plus these additional weeds:

Black nightshade	Sesbania
Crowfootgrass	(Coffeebean)
Galinsoga	(Coffeeweed)
Jimsonweed	Shepherdspurse
Pennsylvania smartweed	Southwestern cupgrass
Prairie cupgrass	Spotted spurge
Red rice	Spurred anoda
	Velvetleaf
	Venice mallow
	Wild mustard
	Yellow nutsedge

Additional weeds partially controlled by this combination include:

Hairy nightshade	Volunteer sorghum
Sandbur	

Follow recommended soil preparation recommendations for SONALAN. Apply the tank mixes in a minimum of 10 gallons of water or liquid fertilizer per acre. Mix the tank mix into the top two (2) inches of soil. Apply the tank mixes up to 14 days prior to planting.

Broadcast Rates Per Acre

Use the recommended rates listed for SONALAN and Dual for the two-way combination; add the recommended rate of Lexone or Sencor for the SONALAN/Dual/Lexone or Sencor tank mix.

Soil Texture	SONALAN		Dual		Lexone or Sencor	
	General Weed Control	Partial Control of Eastern Black Nightshade	Less than 3% O.M.	3% O.M. or Greater	Lexone 4L Dry Flowable or Sencor 4 Dry Flowable	Lexone or Sencor
	(pounds)	(pounds)	(pints)	(pints)	(pints)	(pounds)
Coarse	0.9 - 1.5	N/A	1 1/2 - 2	2	1/2**	1/3**
Medium	1.3 - 1.9	2.2*	2 - 2 1/2	2 - 2 1/2	3/4	1/2
Fine	1.7 - 2.2	2.6* 1.2* 1.2*	2 - 2 1/2	2 1/2 - 3	1	2/3

* Two soil mixing passes are required for partial control of eastern black nightshade.

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

Read the SONALAN, Dual, Lexone and Sencor labels for additional directions, cautions and limitations prior to use.

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

Broadcast Rates Per Acre

Soil Texture	SONALAN		Lorox L	
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	1/2 to 2% O.M. (pints)	2 to 5% O.M.** (pints)
Coarse	0.9 - 1.5	N/A	1 - 1 1/2	1 2/3 - 3
Medium	1.3 - 1.9	2.2*	1 1/4 - 2 1/3	2 1/3 - 4
Fine	1.7 - 2.2	2.6*	1 1/2 - 2 2/3	2 2/3 - 5

*** Two incorporation passes are required for partial control of eastern black nightshade.**

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

Soybean -- SONALAN/Vernam Tank Mix

SONALAN plus Vernam should be applied as a preplant incorporated tank mix treatment.

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

Annual morningglory
Purple nutsedge
Sicklepod
Velvetleaf
Yellow nutsedge

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		Vernam 7E
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	(pints)
Coarse	0.9 - 1.5	N/A	2 1/3
Medium	1.3 - 1.9	2.2*	3
Fine	1.7 - 2.2	2.6* <i>1.3</i>	3

* Two incorporation passes are required for partial control of 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:

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

Soil Texture	SONALAN		Basagran**
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	(pints)
Coarse	1.1 - 1.5	N/A	2
Medium	1.5 - 1.9	2.2*	2**
Fine	1.9 - 2.2	2.6* <i>1.3</i>	2

* Two incorporation passes are required for partial control of 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 (except California)

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:

Balloonvine	Ragweed
Black nightshade	Smartweed
Jimsonweed	Tropic croton
Moringglory	Wooly croton

Broadcast Rates Per Acre

Soil Texture	SONALAN		Blazer** (pints)
	General Weed Control (pounds)	Partial Control of Eastern Black Nightshade (pounds)	
Coarse	1.1 - 1.5	N/A	2
Medium	1.5 - 1.9	2.2* <i>1.3</i>	2
Fine	1.9 - 2.2	2.6* <i>1.2</i>	2

* Two incorporation passes are required for partial control of 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 in a minimum of 20 GPA.
3. Use 40-60 PSI.
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.

DRY BEAN -- SONALAN ALONE
(Does not include soybean)

SONALAN should be applied as a preplant incorporated treatment. 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> (pounds)
Coarse	1.1 - 1.5
Medium	1.5 - 1.9
Fine	1.9 - 2.2

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

Groundcherry and Nightshade control (annual) -- Dry bean:

Two incorporation passes are required for groundcherry and nightshade control. Do not use these SONALAN rates for garden bean, green bean, snap bean or string bean.

Broadcast Rates Per Acre

<u>Soil Texture</u>	<u>SONALAN</u> (pounds)
Coarse	2.2 - 2.6 ^{1.3}
Medium	2.6 - 3 ^{1.6}
Fine	3 - 3.3

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

Dry Bean -- SONALAN/Amiben tank mix or overlay

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

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

Black nightshade	Velvetleaf
Common ragweed	Wild mustard
Pennsylvania smartweed	

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

Broadcast Rates Per Acre

Soil Texture	SONALAN		Amiben**	
	General Weed Control	Nightshade and Groundcherry Control*	Amiben 2S	Amiben DS
	(pounds)	(pounds)	(quarts)	(pounds)
Coarse	0.9 - 1.5	2.2 - 2.6 <i>1.5</i>	4 - 6	2.4 - 3.6
Medium	1.3 - 1.9	2.6 - 3 <i>1.5</i>	4 - 6	2.4 - 3.6
Fine	1.7 - 2.2	3 - 3.3	4 - 6	2.4 - 3.6

* Two incorporation passes are required for groundcherry or nightshade control.

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

Dry bean -- SONALAN/Dual Tank Mix or Overlay

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

Black nightshade
Prairie cupgrass
Red rice

Southwestern cupgrass
Yellow nutsedge
Galinsoga

Additional weeds partially controlled by this combination include:

Hairy nightshade
Volunteer sorghum

Sandbur

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		Dual 8E	
	General Weed Control (pounds)	Nightshade and Groundcherry Control* (pounds)	Less than 3% O.M. (pints)	3% O.M. or Greater (pints)
Coarse	0.9 - 1.5	2.2 - 2.6 ^{1.3}	1 1/2 - 2	2
Medium	1.3 - 1.9	2.5 - 3 ^{1.2}	2 - 2 1/2	2 - 2 1/2
Fine	1.7 - 2.2	3 - 3.3	2 - 2 1/2	2 1/2 - 3

* Two incorporation passes are required for groundcherry or nightshade control.

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

Dry Bean -- SONALAN/Eptam, SONALAN/EPTC Tank Mixes

SONALAN plus Eptam or SONALAN plus EPTC should be applied as a preplant incorporated tank mix treatment.

The SONALAN/Eptam or other SONALAN/EPTC tank mixes effectively control 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		Eptam 7E or other EPTC 7E formulations
	General Weed Control (pounds)	Nightshade and Groundcherry Control* (pounds)	(pints)
Coarse	0.9 - 1.5	2.2 - 2.6 ✓	2 1/2
Medium	1.3 - 1.9	2.6 - 3 ^{1.65}	3 1/2
Fine	1.7 - 2.2	3 - 3.3 ^{1.65}	3 1/2

* Two incorporation passes are required for groundcherry nightshade control.

Read the Eptam or other EPTC labels for directions, cautions and limitations prior to use.

Dry Bean -- 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 treatment. The SONALAN/Lasso combination effectively controls the weeds listed for SONALAN alone for general weed control plus these additional weeds:

Black nightshade ¹	Red rice ¹
Florida pusley	Witchgrass
Galinsoga	Yellow nutsedge ¹
Hairy nightshade ¹	

¹ Check beneath the rate table for additional Lasso directions.

Additional weeds partially controlled by this combination include:

Common ragweed	Smartweed
Florida beggarweed	Spiny sida (teaweed)

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

Soil Texture	SONALAN		Lasso EC/Micro-Tech™
	General Weed Control (pounds)	Nightshade and Groundcherry Control* (pounds)	(quarts)
Coarse	0.9 - 1.5	2.2 - 2.6	2 1/2 - 3
Medium	1.3 - 1.9	2.6 - 3	2 1/2 - 3
Fine	1.7 - 2.2	3 - 3.3	2 1/2 - 3

* Two incorporation passes are required for groundcherry or nightshade control.

¹ 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 Bean -- SONALAN Preplant Incorporated Followed by Basagran Postemergence Application

SONALAN should be applied as a preplant incorporated treatment followed by a post-emergence 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

Soil Texture	SONALAN		Basagran**
	General Weed Control (pounds)	Nightshade and Groundcherry Control* (pounds)	(pints)
Coarse	1.1 - 1.5	2.2 - 2.6	2
Medium	1.5 - 1.9	2.6 - 3	2
Fine	1.9 - 2.2	3 - 3.3 ✓	2

* Two incorporation passes are required for groundcherry or nightshade control.

** 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 and limitations prior to use.

SUNFLOWER - SONALAN Alone

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 and Eptam or EPTC. Read the combination product label for directions, cautions and limitations prior to use.

General weed control -- except groundcherry and nightshade.

Broadcast Rates Per Acre

Soil Texture	SONALAN (pounds)
Coarse	1.1 - 1.5 ✓
Medium	1.5 - 1.9
Fine	1.9 - 2.2 ✓

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

Sunflower -- SONALAN/Amiben Tank Mix or Overlay

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

Black nightshade
Common ragweed
Pennsylvania smartweed

Velvet leaf
Wild mustard

Broadcast Rates per Acre

Soil Texture	SONALAN	Amiben	
	General Weed Control (pounds)	Amiben 2S (quarts)	Amiben DS (pounds)
Coarse	0.9 - 1.5	4 - 6*	2.4 - 3.6*
Medium	1.3 - 1.9	4 - 6	2.4 - 3.6
Fine	1.7 - 2.2	4 - 6	2.4 - 3.6

* Use the higher rate where heavy populations of black nightshade, ragweed, smartweed, velvetleaf or wild mustard are expected.

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

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

Sunflower -- SONALAN/Eptam or SONALAN/EPTC Tank Mix for Use Only in North Dakota, South Dakota and Minnesota.

SONALAN/Eptam or SONALAN/EPTC should be applied as a preplant incorporated tank mix treatment.

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

Annual Weeds

Annual morningglory
Bermudagrass (seedling)
Black nightshade
Corn spurry
Fiddleneck
Goosefoot nettleleaf
Hairy nightshade
Rescuegrass

Perennial Weeds

Bermudagrass
Purple nutsedge
Yellow nutsedge

Ryegrass (Italian)
 Shepherdspurse
 Tumble pigweed
 Volunteer grains (barley, oat, wheat)

Follow recommended soil preparation directions for SONALAN. Apply the tank mix in at least 10 gallons of water or liquid fertilizer per acre. Apply and immediately incorporate the tank mix prior to planting in the spring.

Broadcast Rates per Acre

Soil Texture	SONALAN	Eptam 7E or other EPTC 7E formulations (pints)
	General Weed Control (pounds)	
Coarse	0.9 - 1.5	2 1/2 - 3 1/2
Medium	1.3 - 1.9	2 1/2 - 3 1/2
Fine	1.7 - 2.2	2 1/2 - 3 1/2

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

Read the Eptam or other EPTC labels for directions, cautions and limitations prior to use.

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® -- bentazon, BASF Wyandotte Corporation
Blazer® -- acifluorfen, Rohm and Haas Company
Dual® -- metolachlor, Ciba-Geigy Corporation
Eptam® -- EPTC, Stauffer Chemical Company
Lasso® -- alachlor, Monsanto Company
Lexone® -- metribuzin, E.I. du Pont de Nemours and Company
Lorox® -- linuron, E. I. du Pont de Nemours and Company
Sencor® -- metribuzin, Bayer, GmbH
Vernam® -- vernolate, Stauffer Chemical Company