

APR 29 1997

Mr. John S. Thornton
Bayer Corporation
P.O. Box 4913
8400 Hawthorn Rd.
Kansas City, MO 64120

Dear Mr. Thornton:

Subject: Tank Mix Partners
Bayer Sencor 4
EPA Reg. No. 3125-314
Your submission dated March 27, 1997

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable and a stamped copy is enclosed for your records.

Sincerely yours,

James A. Tompkins
Product Manager 25
Fungicide-Herbicide Branch
Registration Division (7505C)

Sencor 4 F

314-8852.YLD

U.S. LABEL

Base Pre-Reg. (8852)

2 9 8

Reason To Issue: To add additional tank mix partners to the post emergence corn section.

Date of Draft: 08/26/96 (Pre-Reg) (D)

Supplemental Draft Dated: 03/08/96

ACCEPTED
with COMMENTS
In EPA Letter Dated

APR 29 1997

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

Sencor[®] 4

Flowable Herbicide

For control of certain grasses and broadleaf weeds.

3125-314

ACTIVE INGREDIENT:

4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one 41%

INERT INGREDIENTS: 59%
100%

EPA Reg. No. 3125-314

STOP - Read The Label Before Use
KEEP OUT OF THE REACH OF CHILDREN

AMENDMENT To Currently Registered Labeling

ADD THE FOLLOWING:

FIELD CORN

POSTEMERGENCE APPLICATION

SENCOR 4 is recommended for control of selected broadleaf weeds when applied as a tank mix combination with certain broadleaf herbicides presently registered and recommended for postemergence use in field corn. Herbicides which may be tank mixed with SENCOR 4 include:

2,4-D	Laddok S-12
Atrazine	Marksman
Banvel	Pursuit*
Basagran	<u>Resource</u>
Buctril/Buctril Gel	<u>Scorpion III</u>
Buctril + atrazine (Premix)	Tough
Clarity	

* Use only on Pursuit resistant/tolerant corn hybrids (IMI-Corn).

APPLICATION: SENCOR 4 may be applied to field corn after crop emergence until just prior to tasseling. Broadcast applications may be made with ground or aerial equipment. For optimum weed control, apply treatments when weeds are small and actively growing, but before reaching the maximum heights listed in the Weeds Controlled table.

POSTEMERGENCE BROADCAST APPLICATION

Ground Application: Adjust nozzle height above crop and weed canopy to ensure uniform spray coverage. Gallonage should be increased with increasing weed size and population density.

For tank mixes of SENCOR 4 plus atrazine, Basagran, Laddok S-12, Buctril, Buctril + atrazine, Pursuit, Resource, Tough or 2,4-D amine formulations, use flat fan nozzles spaced a maximum of 20 inches apart. Best results are achieved using a minimum spray volume of 10 gallons per acre and spray pressure from 20 to 40 psi.

For SENCOR 4 tank mixes with Banvel, Clarity, Marksman, or 2,4-D low volatile ester formulations, use drift-reducing nozzles which are specifically designed to produce coarse sprays and reduce the amount of driftable fines. Additional measures which will help avoid potential drift to sensitive crops and plants include using a minimum spray volume of 20 gallons per acre and keeping spray pressures at or below 20 psi unless otherwise specified by the nozzle manufacturer.

Text being added is highlighted by redlining.

For further precautions and additional instructions and recommendations, consult the tank mix partner's label.

Aerial Application: Apply in a minimum spray volume of 3 gallons per acre. For optimum spray coverage and distribution, use a minimum of 5 gallons per acre and a maximum pressure of 40 psi. Use a boom and nozzle configuration which will provide a uniform deposition pattern and coverage with low drift potential. Avoid overlaps to prevent potential crop injury. Do not apply near sensitive crops or sensitive plants growing near the treated area. Do not apply when wind speed is greater than 10 mph or when winds are moving toward sensitive crops or plants. To avoid drift hazards, applicator must follow the most restrictive labeling of the products used in a tank mix. Refer to the appropriate tank mix partner's label for further precautions and recommendations.

POST DIRECTED APPLICATION

SENCOR 4 in tank mix combinations with Banvel, 2,4-D, Buctril, or Scorpion III may be applied post directed to field corn. Use drop nozzles and appropriate spacing to direct spray below the corn whorl and upper leaves. The top of the target weed canopy must be sufficiently below the whorl and upper leaves of the crop to permit this application and provide adequate spray coverage. The height differential required between the crop and weed canopy will depend on the specific equipment used. Apply before tassel emergence. For further precautions and additional recommendations, refer to the appropriate tank mix partner's label.

ADJUVANTS

The adjuvant types listed below may be utilized with certain SENCOR 4 tank mix combinations. Consult the tank mix recommendations section for the appropriate adjuvant and rate. Use of non-recommended adjuvants or rates may result in severe leaf burn, crop stunting, and/or stand reduction. Use only adjuvants which are exempt from tolerance requirements under 40 CFR 180.1001.

UAN (urea ammonium nitrate) is commonly referred to as 28, 30, or 32% N.

Ammonium sulfate (spray grade) may be used as an alternative to UAN with certain tank mix combinations.

Non-ionic surfactants should contain at least 80% active ingredient.

DO NOT USE crop oil concentrate (COC) or any adjuvant containing vegetable or petroleum oils with any SENCOR 4

tank mixtures as severe leaf burn, crop stunting, and/or stand reduction may occur.

RAINFASTNESS

SENCOR 4 will not reduce raintfastness of the recommended tank mix partners. Refer to the individual product labels for raintfastness recommendations.

SPRAYER CLEANUP

Refer to each tank mix partner's label and the Sprayer Cleanup section of the SENCOR 4 label for specific instructions on cleaning spray equipment. Special attention should be given to the required cleanup procedures for 2,4-D, Banvel, Clarity, and Marksman.

SPECIAL PRECAUTIONS

1. Do not use on corn grown for seed, sweet corn, popcorn, or white corn.
2. Do not apply more than 0.25 pounds a.i. metribuzin (8 fl oz SENCOR 4) per acre per use season.
3. Do not apply when field corn is under stress (see Stress statement below).
4. Do not use aerial applications if sensitive crops or plants are growing in the vicinity of the area to be treated.
5. Do not allow spray drift onto sensitive crops or plants.
6. Do not use on sand, loamy sand or sandy loam soils that have less than 0.5% organic matter.
7. Do not use on sand or loamy sand soils in Washington, Oregon or Idaho or crop injury may occur.
8. Observe all precautions and limitations on labeling of all products used in the tank mixtures.

Stress is any condition or combination of conditions which impairs normal crop growth. Weather, disease, insect damage, fertility or other factors may cause stress. Applications made before or after the corn is under stress from these factors or from periods of prolonged cool, wet and cloudy weather or widely fluctuating day and nighttime temperatures, may result in temporary leaf burn, yellowing and/or stunting of the crop. Recovery from damage is generally rapid with no lasting effects on new growth. Under extreme stress, stand reductions may occur.

Feeding Restrictions: Field corn treated with SENCOR 4 may be grazed or harvested for silage or grain 60 days after treatment. Follow the most restrictive preharvest interval on the labels of the products used in the tank mixtures.

TANK MIX COMBINATIONS

The SENCOR 4 tank mixtures listed below can be utilized for control of certain annual broadleaf weeds.

SENCOR 4 Flowable Herbicide

SENCOR 4 POSTEMERGENCE BROADCAST RECOMMENDATIONS		
PRODUCT	RATE	DIRECTIONS AND REMARKS*
SENCOR 4 + 2,4-D Amine or 2,4-D LVE	3 fl oz/A + 1/2 to 1 pt/A ¹ or 1/3 to 1/2 pt/A ¹	Apply as a broadcast spray during the interval from corn emergence until corn is 8 inches tall. Apply only to varieties known to be tolerant to 2,4-D. DO NOT USE ADJUVANTS. 2,4-D may cause injury to nearby sensitive crops. 2,4-D applications may result in brittle corn stalks, and winds or cultivation may cause stalk breakage. To reduce damage, delay cultivation 8 to 10 days after application.
SENCOR 4 + Atrazine	3 fl oz/A + 1/2 to 1-1/2 lb ai/A	Apply as a broadcast spray during the interval from corn emergence until corn is 12 inches tall. A non-ionic surfactant (1 qt/100 gal of spray solution) may be added to improve weed control. Atrazine is a restricted use herbicide. Follow all state and federal label recommendations and restrictions pertaining to atrazine applications.
SENCOR 4 + Banvel or Clarity	3 fl oz/A + 1/2 to 1 pt/A or 1/2 to 1 pt/A	Apply as a broadcast spray during the interval from corn emergence through the five leaf stage or when corn is 8 inches tall, whichever occurs first. For Banvel applications to corn greater than 8 inches in height, consult the Banvel label for use rates and restrictions. If growing conditions are dry and plants are stressed, addition of a non-ionic surfactant (1 qt/100 gal of spray solution) may improve weed control. For corn grown on coarse textured soils, apply Banvel or Clarity at 0.5 pt/A, regardless of application method. Application may cause injury to nearby sensitive crops or plants. Application may result in temporary leaning of corn plants. Delay cultivation until plants return to normal growth patterns to avoid stalk breakage.
SENCOR 4 + Basagran	3 fl oz/A + 1 pt/A	Apply as a broadcast spray after corn emergence but before corn exceeds 30 inches in height and the crop canopy closes the row. Adjuvants such as UAN (0.5 to 1 gal/A), ammonium sulfate (17 lbs/100 gal of spray solution), or non-ionic surfactant (1 qt/100 gal of spray solution) may improve weed control.
SENCOR 4 + Buctril or Buctril Gel	2.4 to 3 fl oz/A + 1 pt/A or 1/2 pt/A	Apply as a broadcast spray when corn is in the fourth true leaf stage or later but before the crop canopy closes the row. DO NOT USE ADJUVANTS. Occasional temporary corn leaf burn may occur and is similar to that observed from liquid fertilizers. Recovery is generally rapid with no lasting effect. To reduce potential for crop damage, application should be made to dry corn foliage when weather conditions are not extreme.
SENCOR 4 + Buctril + atrazine (Premix)	2.4 to 3 fl oz/A + 1-1/2 to 2 pt/A	Apply as a broadcast spray during the interval from corn emergence until corn is 12 inches tall. DO NOT USE ADJUVANTS. Occasional temporary corn leaf burn may occur and is similar to that observed from liquid fertilizers. Recovery is generally rapid with no lasting effect. To reduce potential for crop damage, application should be made to dry corn foliage when weather conditions are not extreme.
SENCOR 4 + Laddok S-12	3 fl oz/A + 1.33 to 1.66 pt/A	Apply as a broadcast spray after corn emergence until the corn is 12 inches tall. Adjuvants such as UAN (0.5 to 1 gal/A) may improve weed control. Laddok S-12 contains atrazine, and is a restricted use product. Follow all state and federal label recommendations and restrictions pertaining to atrazine.
SENCOR 4 + Marksman	3 fl oz/A + 1-1/2 to 2 pt/A	Apply as a broadcast spray during the interval from corn emergence through the five-leaf stage or when corn is 8 inches tall, whichever occurs first. DO NOT USE ADJUVANTS. Application may cause injury to nearby sensitive crops or plants. Application may result in temporary leaning of corn plants. Delay cultivation until plants return to normal growth patterns to avoid stalk breakage. Marksman contains atrazine, and is a restricted use product. Follow all state and federal label recommendations and restrictions pertaining to atrazine.
SENCOR 4 + Pursuit	3 fl oz/A + 2 to 4 oz/A	Use only on designated IMI-Corn hybrids (hybrids which are resistant/ tolerant to Pursuit. Apply the 4.0 ounce rate of Pursuit if grasses are present or broadleaf weeds are near the maximum heights shown. Apply in combination with a non-ionic surfactant (1 qt/100 gal of spray solution) and UAN (1 to 2 qt/A).
SENCOR 4 + Resource	3 fl oz/A + 4 to 6 fl oz/A	Apply as a broadcast spray to field corn from 2-leaf through 10-leaf (visible leaf collars) stage. Adjuvants such as nonionic surfactant (0.25% v/v), UAN (2% v/v) or ammonium sulfate (2.5 lbs/A) may improve weed control.
SENCOR 4 + Tough	3 fl oz/A + 1 to 2 pt/A	Apply as a broadcast spray after corn emergence but before corn height exceeds 30 inches and the crop canopy closes the row. A non-ionic surfactant (1 qt/100 gal of spray solution) may be added to improve weed control. Use the higher rates of Tough as weeds approach the maximum height listed or are found in high density. Tough may improve control on triazine/ALS resistant weeds.

* Consult the appropriate tank mix partner's label for additional recommendations or restrictions. The most restrictive labeling applies to tank mixes with SENCOR 4.

¹ Application rate is based on, but not restricted to, 4 pounds active ingredient per gallon of 2,4-D.

578

SENCOR 4 Flowable Herbicide

SENCOR 4 POST DIRECTED RECOMMENDATIONS		
PRODUCT	RATE	DIRECTIONS AND REMARKS*
SENCOR 4 + 2,4-D Amine or 2,4-D LVE	3 to 4.5 fl oz/A + 3/4 to 1-1/2 pt/A [†] or 1/2 to 3/4 pt/A [†]	For corn greater than 8-inches tall, apply as a directed spray with drop nozzles before tassel emergence. Apply only to varieties known to be tolerant to 2,4-D. DO NOT USE ADJUVANTS. 2,4-D may cause injury to nearby sensitive crops. 2,4-D applications may result in brittle corn stalks, and winds or cultivation may cause stalk breakage. To reduce damage, delay cultivation 8 to 10 days after application.
SENCOR 4 + Banvel	3 to 4.5 fl oz/A + 1/2 pt/A	For corn 8 to 36 inches tall, apply as a directed spray with drop nozzles . Application may be made up to 15 days prior to corn tasseling. If growing conditions are dry and plants are stressed, addition of a non-ionic surfactant (1 qt/100 gal of spray solution) may improve weed control. For corn grown on coarse textured soils, apply Banvel at 0.5 pt/acre, regardless of application method. Application may cause injury to nearby sensitive crops or plants. Application may result in temporary leaning of corn plants. Delay cultivation until plants return to normal growth patterns to avoid stalk breakage.
SENCOR 4 + Buctril or Buctril Gel	3 to 4.5 fl oz/A + 1 to 1-1/2 pt/A or 1/2 to 3/4 pt/A	Apply as a directed spray with drop nozzles before tassel emergence. DO NOT USE ADJUVANTS. Occasional temporary corn leaf burn may occur and is similar to that observed from liquid fertilizers. Recovery is generally rapid with no lasting effect. To reduce potential for crop damage, application should be made to dry corn foliage when weather conditions are not extreme.
SENCOR 4 + Scorpion III	3 to 4.5 fl oz/A + 1/2 pt/A	For corn 8 to 24 inches tall, apply as a directed spray with drop nozzles. Include nonionic surfactant (1 qt/100 gal) plus UAN (2.5 gal/100 gal) for optimum weed control.
<p>* Consult the appropriate tank mix partner's label for additional recommendations or restrictions. The most restrictive labeling applies to tank mixes with SENCOR 4.</p> <p>† Application rate is based on, but not restricted to, 4 pounds active ingredient per gallon of 2,4-D.</p>		

678

SENCOR 4 Flowable Herbicide

WEEDS CONTROLLED - POSTEMERGENCE BROADCAST APPLICATION

These tank mixtures with SENCOR 4 will control the following annual weeds up to the maximum weed heights listed:

COMMON WEED NAME	SENCOR 4 +									
	Atrazine	Barvel/ Clarity	Basagran	Buctril/ Buctril + atrazine	2,4-D	Marksman	Pursuit	Laddok S-12	Resource	Tough
	MAXIMUM WEED HEIGHT IN INCHES*									
Amaranth, Palmer	4 ^a	4	2 ^a	4 ^a	4	4	8 ^b	6		4
Buckwheat, wild	3	3	3	3	2	3	2	0		
Buffalobur	4	4		4		4	1			
Burcucumber		4		4	2	4				4
Carpetweed	2	2	2	2	2	2		2		4
Cocklebur, common	8	8	8	8	8	8	8 ^b	8		6
Eclipta	3	3	3	3	3	3		3		3
Henbit	3	3	2	2	2	4	3	3		4
Horseweed/marestail	3	4	1	1	3	6		2		
Jimsonweed	5	5	6	5	5	5	5	6		5
Knotweed	6	6	6	4	2	6	4	6		4
Kochia	2 ^a	2	1 ^a	2 ^a	2 ^a	2	2	2 ^a		4
Ladysthumb	6	6	6	6	4	6	4	6		6
Lambsquarters, common	6 ^a	6	1	6	6	6	4	5		4
Lettuce, prickly	4	4		3	4	5		3		
Mallow, Venice	2	2	2	2	2	2	2	4		
Morningglory, entire leaf	3	3	1	3	3	3	2	2		
Morningglory, ivyleaf	3	3	1	3	3	3	2	2		
Morningglory, pltted	3	3	1	3	3	3	2	2		
Morningglory, tall	3	3	1	3	3	3	2	2		
Mustard, tansy	4	4	4	4	4	4	4	4		
Mustard, wild	4	4	4	4	4	4	4	4		4
Nightshade, black	6	6		6	1	6	3	1		4
Nightshade, eastern black	6	6		6	1	6	3	1		4
Pigweed, redroot	6 ^a	6	2 ^a	6 ^a	6	6	8 ^b	6 ^a		6
Pigweed, smooth	6 ^a	6	2 ^a	6 ^a	6	6	8 ^b	6 ^a		6
Poorjoe	3	3	3	3	3	3	3	3		
Purslane, common	1	3				4	1			3
Pusley, Florida	3	3	3	3	3	3		3		
Ragweed, common	5	5	3	5	5	6	3	4		
Ragweed, giant	4	5	2	4	3	6	4	4		
Sicklepod	3	3	3	3	3	3	3	3		2
Sida, prickly	1	1	3	1	1	2	1	2		1
Smartweed, Pennsylvania	6	6	6	6	4	6	4	6		
Sunflower, common	6	6	6	6	6	6	5	6		5
Thistle, Russian	1	3		3	1	3	1	1		3
Velvetleaf	6 ^a	6	6	6	4	6	5	6		
Waterhemp, spp.	5 ^a	5	2 ^a	5 ^a	5	5	4 ^b	2 ^a		5

* When weeds are approaching the maximum height listed or found in high densities, use the higher rate of SENCOR 4 and the selected tank mix partners.

^a These treatments will not control triazine resistant biotypes.

^b These treatments will not control ALS resistant biotypes.

7 78

SENCOR 4 Flowable Herbicide

WEEDS CONTROLLED - POST DIRECTED APPLICATION				
<u>These tank mixtures with SENCOR 4 will control the following annual weeds up to the maximum weed heights listed:</u>				
COMMON WEED NAME	SENCOR 4,4			
	2,4-D	Banvel	Buctril	Scorpion III
	MAXIMUM WEED HEIGHT IN INCHES *			
Airaloath, Palmer	12	12	6	8
Cockspur, common	12	12	12	15
Illinois weed	12	10	10	8
Lady thumb	6	8	6	6
Lambsquarters, common	12	12	10	12
Morningglory, entire leaf	18	18	6	12
Morningglory, ivyleaf	18	18	6	12
Morningglory, pitted	18	18	6	12
Morningglory, tall	18	18	6	12
Nightshade, black	10	8	8	6
Nightshade, eastern black	10	8	8	6
Rigweed, redroot	12	12	6	8
Rigweed, smooth	12	12	6	8
Ragweed, common	8	8	8	10
Ragweed, giant	12	12	8	15
Smartweed, Pennsylvania	6	8	6	6
Sunflower, common	12	12	12	12
Velvetleaf	10	8	8	8
Waterhemp, tall	12	12	6	8

* When weeds are approaching the maximum height listed or found in high densities, use the higher rate of SENCOR 4 and the selected tank mix partners.

878

SENCOR 4 Flowable Herbicide

PERENNIAL WEED SUPPRESSION

The following SENCOR 4 tank mixtures will provide top growth burndown and in season suppression of the following perennial weeds; however, regrowth may occur. For the best performance on these weeds, use the maximum rates of

SENCOR 4, Banvel, Buctril, Buctril + atrazine, Clarity, Marksman, 2,4-D LVE or Pursuit recommended for these tank mixtures.

COMMON WEED NAME	SENCOR 4 +				
	Banvel / Clarity	Buctril/ Buctril + atrazine	2,4-D LVE	Marksman	Pursuit
Bindweed, field	X		X	X	
Dandelion, common	X		X	X	
Dock, curly	X		X	X	
Smartweed, swamp	X		X	X	
Thistle, Canada	X	X	X	X	X

