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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, D.C. 20460

OFFICE OF PREVENTION, PESTICIDES AND TOXIC SUBSTANCES

SEP 2 2003

Albaugh, Inc. c/o Michael Kellogg Pyxis Regulatory Consulting 11324 17th Ave. Ct. N.W. Gig Harbor, WA 98332

Gentlemen:

Subject:

Revised Labeling

Albaugh Range Star

EPA Registration No. 42750-55 Your Submission Dated April 7, 2003

The amendment referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended is acceptable provided that you:

- 1. Make the labeling changes listed below before you release the product for shipment bearing the amended labeling:
 - a. On pages 2 and 3 reinstate the specific text on the last accepted labeling for Containers greater than 1 gallon but less than 5 gallons: and For Containers of 5 gallons or more:. This language is required by the 2,4-D Registration Standard.
 - b. On page 2 the referral statement states "See inside booklet for additional Precautionary Statements". 40 CFR 156.10(a)(2)(i) states that all words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations must be clearly legible to a person with normal vision and must be placed with such conspicuousness and expressed in such terms to render it likely to be read and understood by ordinary individual under customary conditions of purchase and use. 40 CFR 156.10(i)(1)(ii) states that only the directions for use may appear on printed or graphic matter which accompanies the pesticide. When preparing final printed labeling assure that the first aid and precautionary statements and other required text appear on the container label or otherwise can be read during purchase or formally submit a request for a size exemption from the regulations.

c. Reinstate "Do not apply this product through any type of irrigation system". If you intend to apply this product through chemigation equipment you must add appropriate directions for use and comply with Data Compensation provisions of FIFRA. Refer to PR Notice 87-1. A copy is available at the following web site:

http://www.epa.gov/opppmsd1/PR_Notices/pr87-1.html

2. Submit one (1) copy of your final printed labeling before you release the product for shipment.

A stamped copy of the labeling is enclosed for your records.

If you have any questions concerning this letter, please contact Mr. James Stone at 703-305-7391.

Sincerely yours,

Joanne I. Miller

Product Manager (23)

Herbicide Branch

Registration Division (7505C)

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Enclosure

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

Albaugh, Inc.

42750-55

For use on Conservation Reserve Program Land, Fallow Systems (Between Crop Applications), General Farmstead, Sorghum, Grass (Hay or Silage), Pastures, Rangeland, Sugarcane, and Wheat

ACTIVE INGREDIENTS:

Dimethylamine salt of dicamba (3,6-dichloro-o-anisic acid)*	12.4%
Dimethylamine salt of 2,4-dichlorophenoxyacetic acid**	
INERTOTHER INGREDIENTS:	
TOTAL	100.0%

*This product contains 10.3% 3,6-dichloro-o-anisic acid (dicamba) or 1 pound per gallon (120 g/L) **This product contains 29.6% 2.4-dichlorophenoxyacetic acid (2,4-D) or 2.87 pounds per gallon (344 g/L). Isomer specific by AOAC method 978.05, 15th Edition

SHAKE WELL BEFORE USING

KEEP OUT OF REACH OF CHILDREN

DANGER/PELIGRO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand the label, find someone to explain it to you in detail.)

STATEMENT OF PRACTICAL TREATMENT

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

IF SWALLOWED: Call a doctor and get medical attention. Do not induce vemiting or give anything by mouth to an unconscious person. Drink promptly a large quantity of milk, egg whites, gelatin solution, or if these are not available, drink large quantities of water. Avoid alcohol.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

Note to physician: Probable mucosal damage may contraindicate the use of gastric layage

	FIRST AID			
If in eyes:	 Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice. 			
<u>If swallowed:</u>	 Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person. 			
lf on skin or clothing:	 Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. 			
HOT LINE NUMBER				
	er or label with you when calling a poison control center or doctor, or going for			

treatment. You may also contact 1-800-424-9300 for emergency medical treatment information.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage

See inside booklet for additional Precautionary Statements

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS DANGER

Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Harmful if swallowed or absorbed through skin. Avoid contact with skin.

EPA Reg. No. 42750-55

EPA Est. No.

Manufactured by: ALBAUGH, Inc. Ankeny, IA 50021

NET	C	ON	T	ΕI	N ²	۲S
Gals.	(L	.it	ei	S

FOR CHEMICAL SPILL, LEAK, FIRE, OR EXPOSURE, CALL CHEMTREC (800) 424-9300

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Applicators and other handlers must wear:

- ___ Long-sleeved shirt and long pants
- -• Waterproof gloves Chemical-resistant gloves Category A, such as butyl rubber > 14 mils, or natural rubber > 14 mils, or neoprene rubber > 14 mils or nitrile rubber > 14 mils
- Shoes plus socks
- Protective eyewear

Containers greater than 1 gallon but less than 5 gallons:

Mixers and loaders who do not use a mechanical system (probe and pump) to transfer the contents of this container must wear: coveralls or a chemical resistant apron in addition to the other required PPE.

- Coveralls
- Chemical-resistant apron

Discard clothing erand other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. After each day of use, clothing or PPE must not be reused until it has been cleaned.

Engineering Controls Statements:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

For Containers containers of 5 gallons or more:

Do not open pour product from this container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of this container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal. If the mechanical system is used in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4)], the handler PPE requirements may be reduced or modified as specified in the WPS.

For containers greater than 1 gallon but less than 5 gallons:

When handlers use a mechanical system (probe and pump), enclosed cabs or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

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

ENVIRONMENTAL HAZARDS

This product is toxic to aquatic invertebrates. Drift or runoff may adversely affect aquatic invertebrates and non-target plants. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. Apply this product only as directed on label.

Most cases of groundwater contamination involving phenoxy herbicides such as 2,4-D have been associated with mixing/loading and disposal sites. Caution should be exercised when handling 2,4-D pesticides at such sites to prevent contamination of groundwater supplies. Use of closed systems for mixing or transferring this pesticide will reduce the probability of spills. Placement of the mixing/loading equipment on an impervious pad to contain spills will help prevent groundwater contamination.

DIRECTIONS FOR USE

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

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

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 48 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is: coveralls, waterproof gloveschemical-resistant gloves Category A, such as butyl rubber > 14 mils, or natural rubber > 14 mils, or neoprene rubber > 14 mils or nitrile rubber > 14 mils, shoes plus socks, and protective evewear.

Do not apply this product through any type of irrigation system.

BEFORE USING RANGE STAR[™] READ AND FOLLOW ALL PRECAUTIONS APPEARING ON THE CONTAINER AND IN THIS BOOKLET

IMPORTANT

The following directions apply to all uses of Range StarTM.

Do not contaminate irrigation ditches or water used for domestic purposes.

GENERAL INFORMATION

Range StarTM is a selective postemergence herbicide for controlling a wide spectrum of annual, biennial, and perennial broadleaf weeds and brush in grass forages and selected row crops. Range StarTM may be used in/on Conservation Reserve Program Land*, Fallow Systems (Between Crop Applications)*, General Farmstead*, Grain Sorghum, Grass (Hay or Silage), Pastures, Rangeland, Sugarcane, and Wheat.

*These crops are considered Food/Feed crops only when harvested, grazed or foraged. Otherwise, they are considered as non-Food/Feed uses.

MODE OF ACTION: Range Star[™] contains dicamba and 2,4-D as the active ingredients. Range Star[™] is readily absorbed by plants through shoot and root uptake, translocates throughout the plant's system, and accumulates in areas of active growth. Range Star[™] interferes with the plant's growth hormones (auxins) resulting in death of many broadleaf weeds.

SPRAY EQUIPMENT CLEANING: Spray equipment may be cleaned by using a strong detergent or commercial sprayer cleaner according to the manufacturer's directions and then triple rinsing the equipment before and after applying this product.

APPLICATION INSTRUCTIONS

Apply Range StarTM at the recommended rates and growth stages in the Annual Weeds and the Biennial and Perennial Weeds rate tables unless instructed differently in the Food/Feed Crop Specific Information or Non-Food/Feed Use-Specific Information sections of this label. Make applications of Range StarTM to actively growing weeds using aerial, broadcast, band, or spot spray applications. Range StarTM may be applied using water or sprayable fluid fertilizer as a carrier. For preplant or pre-emergence uses, sprayable fluid fertilizer may be used as the carrier for all crops listed on this label. Postemergence applications with sprayable fluid fertilizer may be made on pasture, hayland, or wheat crops only.

The most effective application rate and timing varies based on the target weed species. In mixed weed populations, the correct rate is determined by the weed species requiring the highest rate. Inadequate control may be observed if application is delayed since weeds may exceed the maximum size stated on this label.

IRRIGATION: In irrigated areas, it may be necessary to irrigate before application of Range Star[™] to ensure active weed growth.

SPRAY COVERAGE: Ensure weeds are thoroughly covered with spray. Dense leaf canopies may shield smaller weeds and prevent adequate coverage.

SENSITIVE CROP PRECAUTIONS: Range StarTM may cause injury to desirable trees and plants, particularly beans, cotton, flowers, fruit trees, grapes, ornamentals, peas, potatoes, soybeans, sunflowers, tobacco, tomatoes and other broadleaf plants when contacting their roots, stems or foliage. These plants are most sensitive to Range StarTM during their development or growing stage. FOLLOW THE PRECAUTIONS LISTED BELOW WHEN USING RANGE STARTM.

Do not treat areas where either possible downward movement into the soil or surface washing may cause contact of Range StarTM with the roots of desirable plants such as trees and shrubs.

Avoid making applications when spray particles may be carried by air currents to areas where sensitive crops and plants are growing. Do not spray near sensitive plants if wind is gusty or in excess of 5 mph and moving in the direction of nearby sensitive crops or if a temperature inversion exists. However, always make applications when there is some air movement to determine the direction and distance of possible spray drift. Leave an adequate buffer zone between area to be treated and sensitive plants. Coarse sprays are less likely to drift out of the target area than fine sprays. Agriculturally approved drift-reducing additives may be used.

Do not use aerial equipment to apply Range $Star^{TM}$ when sensitive crops and plants are growing in the vicinity of area to be treated.

AERIAL APPLICATION METHODS AND EQUIPMENT

Water Volume: Use 3-10 gallons of water per acre. Use the higher spray volume when treating dense or tall vegetation.

Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Make applications at the lowest safe height to reduce the exposure of spray droplets to evaporation and wind. The applicator must follow the most restrictive use cautions to avoid drift hazards, including those found in this labeling as well as applicable state and local regulations and ordinances.

Do not use aerial equipment if spray particles can be carried by the wind into areas where sensitive crops or plants are growing or when temperature inversions exist.

To avoid injury to desirable plants, equipment used to apply Range StarTM should be thoroughly cleaned (see PROCEDURE FOR CLEANING SPRAY EQUIPMENT) on page [-]) before reusing to apply any other chemicals.

Crops growing under stress conditions such as drought, poor fertility, or foliar damage due to hail, wind or insects, can exhibit various injury symptoms that may be more pronounced if herbicides are applied.

Consult your local or state authorities for possible application restrictions and advice concerning these and other special local use situations. Tank mix recommendations are for use only in states where the tank mix product and application site are registered.

GROUND APPLICATION (BANDING)

When applying Range StarTM by banding, determine the amount of herbicide and water volume needed using the following formula:

Band width in inches	 Broadcast rate	==	Banding herbicide
Row width in inches	 per acre		rate per acre
Band width in inches	 Broadcast volume	=	Banding water
Row width in inches	 per acre	=	volume per acre

GROUND APPLICATION (BROADCAST)

For optimal performance, use 5-40 gallons of spray solution per broadcast acre. Use the higher spray volume when treating dense or tall vegetation.

Application Equipment: Select nozzles designed to produce minimal amounts of fine spray particles. Make applications with nozzles as close to the weeds as is practical for good weed coverage.

SPOT OR SMALL AREA APPLICATION

MIXING AND APPLICATION



Range StarTM may be applied broadcast using either ground or aerial equipment. When using ground equipment, apply 5 to 40 gallons of diluted spray per treated acre. Volume of spray applied will depend on the height, density, and type of weeds, or brush being treated and on the equipment being used. When using aerial equipment, apply 3 to 10 gallons of diluted spray per treated acre.

Range StarTM may be applied to individual clumps or small areas (SPOT TREATMENT) of undesirable vegetation using handgun or similar types of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems. For knapsack or other small capacity sprayers, utilize the table below to calculate material needed. (The table below is based on the assumption that the spot treatment rate equates to 60 gallons per acre on the broadcast basis.)

Knapsack Sprayer Dilution Instructions

Sprayer Capacity	Fluid Ounces* of Range Star™
(Gallons of water)	to add per filled tank
1.0 gallon	1.0 oz
2.5 gallons	2.5 oz
3.0 gallons	3.0 oz
5.0 gallons	5.0 oz

The addition of a surfactant can help improve control. Add $\frac{1}{2}$ % (0.005) by volume. For example, 5 gallons (40 pt/640 fl oz) of herbicide solution would require 0.2 pt (3.2 fl oz) of surfactant.

<u>Application Equipment:</u> Select nozzles designed to produce minimal amounts of fine spray particles. Spray with nozzles as close to the weeds as is practical for good weed coverage.

Range StarTM-should not be applied during periods of gusty wind or when wind is in excess of 15 mph as uneven spray coverage may occur.

Avoid disturbing (e.g., cultivating or moving) treated areas for at least 7 days following application.

Range StarTM is a water-soluble formulation that may be applied alone or in tank mixes to improve weed control. Applications may be made using water or sprayable fluid fertilizer. If sprayable fluid fertilizer is used as the herbicide carrier, always determine mixture compatibility using the COMPATIBILITY TEST described below. Sprayable liquid fertilizer (28-0-0 or 32-0-0) should be mixed with Range StarTM in the following manner:

- 1)Always complete iar compatibility test with fortilizer formulations.
- 2)Add to the spray tank all the Range Star TM required.
- 3)Add water to the spray tank at 10 times the amount of Range StarTM. System should be under constant agitation.
- 4)Then add non-ionic surfactant or Prepoil at 0.25 to 0.5% v/v of the total of Range StarTM plus the 10X water added to the tank.
- 5)Finally, add the fertilizer carrier to the spray tank with agitation to the final desired level.
- 6)Spray within 24 hours.

COMPATIBILITY TEST

Before mixing Range StarTM with sprayable fluid fertilizer, whether alone or with tank mixes with other herbicides, it is advisable to test compatibility by mixing all components in a small container in proportionate quantities (see following table).

^{*1} fluid ounce = 2 tablespoons and 1 cup (liquid) = 16 tablespoons

Amount of Herbicide to add to One Pint of Spray Carrier (Assuming Volume is 25 Gallons per Acre)

	HERBICIDE	PATE	
V	TILITOIOL	TOTIL	
	FORMULATIONS	PER ACRE	TEASPOONS
	TOTATION TOTAL	LITTOIL	12701-00110
	Dry	1 lb	1.1/
· · · · · · · · · · · · · · · · · · ·	D17	1-112	1 72
	Liquid	1.nt	1 <u>/</u> _
	- LIQUIU	- Pt	72

Tank mix partners may be dry or liquid formulations.

If herbicide(s) do not ball-up or form flakes, sludge, gels, oily films or layers, or other precipitates, then the tested spray mix is compatible. Usually, incompatibility in any of the above described forms will occur within 5 minutes after mixing.

If components are incompatible, the use of the compatibility agent is recommended. Rerun the above COMPATABILITY TEST with a suitable compatibility agent (1/4 teaspoon is equivalent to 2 pints per 100 gallons of fluid fertilizer).

PROCEDURE FOR CLEANING SPRAY EQUIPMENT

The steps listed below are suggested for thorough cleaning of spray equipment following application of Range StarTM:

- 1)Hose down thoroughly the inside as well as outside surfaces of equipment while filling the spray tank half-full of water. Flush by operating sprayer until the system is purged of the rinse water.
- 2)Fill tank with water while adding 1 quart of household ammonia for every 25 gallens of water. Operate the pump to circulate the ammonia solution through the sprayer system for 15 to 20 minutes and discharge a small amount of the ammonia solution through the boom and nozzles. Let the solution stand for several hours, preferably evernight.
- 3)Flush the solution out of the spray tank through the boom.
- 4)Remove the nozzies and screens and flush the system with two full tanks of water.

REFER TO THE STORAGE AND DISPOSAL SECTION FOR INSTRUCTIONS CONCERNING DISPOSAL OF WASTE AND CLEANING RINSES.

ANNUAL WEEDS Application Rate and Timing

Weeds Controlled				according to		
(including ALS- and	0.5	1 pint	<u>1.5 pints</u>	2 pints	3 pints	4 pints
triazine-resistant	<u>pint</u>					
Beebalm, Spotted				pre-bloom	post-bloom	
Broomweed	1-3"	3" branching		branching		after
5						branching
Buckwheat, Wild		<u>1-6"</u>			<u></u>	
Buffalobur				1-6"		flowering
Burdock		pre-flower				
Buttercup		pre-flower		early bloom	late bloom	
Chickweed, Common		seedling	<u>1-3"</u>	over 3"		
Cockle, Cow		< 3"				
Cocklebur, Common		1-6"	6-12"	12- 30 18"		
Coreopsis, Plains		1-6"		prior to flowering		-+-
Croton, Woolly	1-4"	4-12"	12-30"			
Devilsclaw		•••		< 8"		
Dogfennel				10-15"		
Evening Primrose	***	< 2"		2-6"	===	
Falseflax, Smallseed	***	< 2"				
Fleabane, Annual	***	1-4"	4-8"	8"	****	
Flixweed	***	< 3"				
Henbit			pre-flower		flower	
Knotweed, Spp.		< 3" runners	pre-nower	> 3" runners	IIOME!	actively
Knotweed, Spp.		Co runners		- 5 Turillers		growing
Kochia	***	1-6"	6-10"	10-20"		
Rochia	***	1-0	0-10	10-20		actively
La-ba-va-da-a Ca		4 6"	6-10"	10-20"		growing
Lambsquarters, Common	di-da-da	1-6"	6-10"	10-20		<u>actively</u>
Nation Organization		- 02				growing
Mallow, Common		< 3"				
Morningglory, Ivyleaf		pre-flower				
, Tall		pre-flower		post-flower		
Mustards, Annual	***	rosette	rosette	early bolt		
, Tansy		< 3"				
Pennycress, Field				rosette	-=-	
Pepperweed, Virginia			1-3"	3-6"	after branching	full leaf
Pigweed, Prostrate		< 3"	•••	***		
, Redroot		< 3"	3-10"	>10"	***	
, Smooth		< 3"	***			
, Tumble		< 3"		mature		
Poorjoe		prior to flower		Mature		actively growing
Purslane, Common		< 3"	3-8"			91071119
Ragweed, Common , Lanceleaf , Western	1-3"	3-6"	6-10"	> 10"		
Sedge				actively growing		
Shepherdspurse		rosette				
Smartweed, Pennsylvania		< 4"			4-12"	
Sneezeweed, Bitter		1-4"	prior to flower	flower		an 44 ap
Sowthistle		rosette		bolting		
		1-3"	3-6"	6-24"		
Sunflower						

Velvetleaf		< 6"	6-20"	> 20"		
For use in non-food/feed of	crop only.	Adding crop oi	I concentrate	has shown to im	prove performa	ince on actively
growing annual sedge.						

BIENNIAL and PERENNIAL WEEDS Application Rate and Timing

	R	lange Star		re (according		growth stage)
Weeds Controlled	0.5 pint	1 pint	1.5 pints	2 pints	3 pints	4-6 pints
Bindweed, Field			***			actively growing
Bittercress ⁵		<u>2-3"</u>				
Buckeye, species¹	+=+				full leaf	
Bullnettle ^{2, 5}				flower		<u></u>
Chicory				Rosette	early bolting	
Clover, bur	==		pre-flower	Mature		
Dandelion, Common		rosette		bolting		
Dewberry, Southern ¹						spring or fall
Dock, Curly			prior to bolting		after bolting	10.00 (1)
Elderberry ²						actively growing
Goldenrod, Missouri				3" to flower3- 15"	flower	
Goldenweed, Common			Lau			actively growing
Groundsel, Texas		rosette	post-bolting			
Honeysuckle, Hairy					spring or fall	
Horsenettle, Carolina						flower or berry
lvy, Poison		خوخو يك		spring or fallafter bloom		***
Knapweed, Black ²						actively growing
, Russian ²			***	***		actively growing
, Spotted						actively growing
Marshelder ⁵			*****	< 12"	12"/pre bloom	
Mesquite						45-90 days after bud- break
Milkweed ^{1, 5}				pre-flower		flower
Nightshade, Silverleaf		Mr. Late de		full flower		full flower early berry_
, Black				full flower		actively growing
Persimmon, Eastern ³						actively growing
Prickly Lettuce				rosette		actively growing
Rabbitbrush ²						actively growing
Ragwort, Tansy				rosette		actively growing
Redvine ²						actively growing
Sagebrush, Fringed ²						actively growing
Smartweed						actively growing
Sorrel, Red			rosette	bolting	flower	actively growing
Sowthistle ²						actively growing
Spurge, Leafy ²						actively growingfull leaf
Tallow Tree, Chinese4, 5, 5						full leaf
Thistle, Bull			rosette	bolting		actively growing
, Canada²						actively growing
, Musk				rosette/bolting		
, Plumeless			rosette	bolting		
Vetch, Hairy		1-4"	4-8"	8" full flower		

Yankeeweed	 	 10-18"	 rosette
Yellow Starthistle	 	 	 rosette

May require repeat applications.

²Recommended rate provides top growth suppression only.

For improved root kill or woody species such as mesquite and eastern persimmon, spray 4 pints of Range Star per acre each year for 3 consecutive years. For increased control of weeds such as blackberry and dewberry, Range Star may be tank mixed with Ally herbicide (0.1-0.2 ounces per acre), if labeled for the use site.

A second application may be required the following growing season under dense populations.

Not for use in California.

⁶Treat with 4 pints of Range Star[™] per acre after full leaf but before leaves develop a heavy cuticle (waxy covering) in periods of extreme heat or drought stress.

For increased control of weeds such as Blackberry and Dewberry, Range Star™ may be tank mixed with ALLY® (1/10 - 2/10 ounces per acre), if labeled for the use site. Read and follow all labeled directions for use for ALLY.

ADDITIVES

For improved burndown of emerged weeds, surfactants and/or low use rate of liquid fertilizers (28-0-0, 32-0-0), or crop oil concentrate may be used with Range StarTM or Range StarTM tank mixes applied after weeds have emerged. Crop oil concentrate is for non-food/feed crop uses only. Do not apply to tank mixes that include ammonium sulfate or crop oil concentrate to any food/feed crop use listed on this label. For food/feed crop uses, do not use liquid fertilizers that contain ammonium sulfate (AMS) as a source of nitrogen as tolerances in commodities derived from the crop may contain residues that exceed established tolerances. Consult your local Albaugh, Inc. representative for recommendations for your area. For additional information, refer to the Compatibility Test for Mix Components section of this label.

Oil Concentrate

A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all of the following criteria: be nonphytotoxic, contain only EPA-exempt ingredients, provide good mixing quality in the jar test and be successful in local experience.

The exact composition of suitable products will vary; however, vegetable and petroleum oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. For additional information, refer to the Compatibility Test for Mix Components section of this label.

Mix Components

Adjuvants containing crop oil concentrates may be used for preplant, pre-emergence and between cropping applications. Do not use crop oil concentrate for postemergence applications in food/feed crops (i.e., sorghum, grass (hay or silage), pastures, rangeland, sugarcane and wheat).

Nitrogen Source

Sprayable liquid fertilizers: Use one quart of sprayable liquid fertilizers (28-0-0, 32-0-0) per acre. Do not use brass or aluminum nozzles when spraying fertilizers.

Nonionic Surfactant

The standard label recommendation is 2-4 pints of an 80% active nonionic spray surfactant per 100 gallons of water. For certain weeds, use a higher spray surfactant rate.

Additive Rate Per Acre

7100,1110.01,	1010
Additive	Rate Per Acre
Nonionic Surfactant	2-4 pints per 100 gallons
Sprayable liquid fertilizers (28-0-0, 32-0-0)	2-4 quarts
Crop Oil Concentrate	1 quart*

^{*}Refer to the manufacturer's label for specific rate recommendations.

GENERAL TANK MIXING INFORMATION

The following products may be tank mixed with Range StarTM according to the specific tank mixing instructions in this label and the respective product labels.

Aim™ (carfentrazone-ethyl)	Gramoxone® Extra (paraquat)
Ally® (metsulfuron-methyl)	Harmony® Extra (thifensulfuron + tribenuron-
	methyl)
Amber® (triasulfuron)	Karmex [®] (diuron)
Asulox® (asulam)	Kerb™ (pronamide)
Atrazine	Laddok® S-12 (bentazon + atrazine)
Albaugh Dicamba DMA Salt or Banvel® (dicamba)	Landmaster® BW (glyphosate + 2,4-D)
Basagran® (bentazon)	MCPA
BROX™-M Herbicide or Bronate® (bromoxynil +	Paramount [®] (quinclorac)
MCPA)	
BROX™ 2EC Herbicide or Buctril® (bromoxynil)	Peak® (prosulfuron)
Canvas [®] (thifensulfuron + tribenuron + metsulfuron)	Permit® (halosulfuron-methyl)
Clarity® (dicamba)	Rave™ (dicamba + triasulfuron)
Curtail™ (clorpyralid + 2,4-D)	Gly Star™ Plus or Roundup® Ultra (glyphosate)
Cyclone® (paraquat)	Sençor® (metribuzin)
Dakota® (fenoxaprop-p-ethyl + MCPA)	Sinbar® (terbacil)
Distinct [®] (diflufenzopyr)	Stinger™ (clopyralid)
Evik [®] (ametryn)	Tiller (fenoxaprop-p-ethyl + 2,4-D + MCPA)
Express® (thifensulfuron + tribenuron-methyl)	Tordon™ (picloram)
Fallow Star™ or Fallowmaster® (glyphosate +	Touchdown [®] (sulfosate)
dicamba)	
Finesse® (chlorsulfuron + metsulfuron-methyl)	2,4-D
Glean® (chlorsulfuron)	

Refer to the Food/Feed Crop-Specific Information section for additional information. Read and follow the applicable Restrictions and Limitations and Directions For Use on all products involved in tank mixing. The most restrictive labeling applies to tank mixes.

Crop injury, reduced weed control, or physical incompatibility may result when mixing Range Star[™] with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Albaugh, Inc. does not recommend using tank mixes other than those listed on this labeling. Local agricultural authorities may be a source of information when using tank mix components other than those recommended on this label.

Compatibility Test for Mix Components

Always perform a compatibility test before mixing components. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust accordingly. Only use water from the intended source at the source temperature. Add components in the sequence indicated in the **Mixing Order** using 2 teaspoons for each pound or 1 teaspoon for each pint of recommended label rate per acre. Always cap the jar and invert 10 cycles between component additions.

When the components have all been added to the jar, let the solution stand for 15 minutes. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface, nor fine particles that precipitate to the bottom, nor thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, do not mix the ingredients in the same tank.

Mixing Order

If an inductor is used, rinse it thoroughly after each component has been added. Maintain constant agitation during application.

- 1. Water* Begin by agitating a thoroughly clean sprayer tank half full of clean water.
- 2. Agitation Maintain constant agitation throughout mixing and application.
- 3. Products in PVA bags Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
- 4. Water-dispersible products (such as dry flowables, wettable powders, suspension concentrates, or suspo-emulsions).
- Water-soluble products (such as Range Star[™]).
- 6. Emulsifiable concentrates (such as oil concentrate when applicable).
- 7. Water-soluble additives (such as liquid fertilizers (28-0-0, 32-0-0) when applicable).
- 8. Remaining quantity of water.

*If sprayable fluid fertilizer is used as the carrier, Range StarTM must be diluted with a minimum of 5 parts water to 1 part Range StarTM. Then add 0.25-0.05% volume/volume of a nonionic surfactant to the dilution before adding it to the sprayable fluid fertilizer to reduce the concern for compatibility problems with this mix. Always perform the **Compatibility Test** before mixing into the spray tank. Also, when using a sprayable fluid fertilizer as the carrier, any product contained in PVA bags must first be completely dissolved in water before the contents can be added to the fertilizer mix.

RESTRICTIONS AND LIMITATIONS

Maximum seasonal use rate:

Crop	Maximum Rate per Acre per Application	Maximum Rate per Acre per Season	<u>Livestock</u> <u>Grazing or</u> <u>Feeding ¹</u>	<u>Aircraft</u> <u>Application</u>	
Between Crop Applications	<u>6 pints</u>	8 pints	<u>Yes</u>	<u>Yes</u>	
Pasture, Hay, Silage	4 pints	8 pints	<u>Yes</u>	<u>Yes</u>	
Sugarcane	6 pints	16 pints	<u>Yes</u>	<u>Yes</u>	
Sorghum	1 pint	1 pint	<u>Yes</u>	<u>Yes</u>	
Wheat	2 pints	3,33 pints	Yes	Yes	
Refer to the Food/Feed Crop-Specific Information section of this label for grazing and feeding restrictions.					

Preharvest Interval (PHI): Refer to the Food/Feed Crop-Specific Information section of this label.

Crop Rotational Restrictions:

The interval between application and planting rotational crop is provided below. Always exclude counting days when the ground is frozen. Planting at intervals less than specified below may result in crop injury. Moisture is essential for the degradation of this herbicide in soil. If dry weather prevails, use cultivation to allow herbicide contact with moist soil.

- Planting/replanting restrictions for Range StarTM applications of 6 pints per acre or less: No rotational cropping restrictions apply at 120 days or more following application. Additionally, for annual crop uses in this label including sorghum, follow the preplant use directions in the Food/Feed Crop-Specific Information section of this label. For barley, oat, wheat, and other grass seedlings, the interval between application and planting is 10 days per pint per acre.
- Planting/replanting restrictions for application of more than 6 pints and up to 8 pints of Range StarTM per acre: Corn, sorghum, cotton (east of the Rocky Mountains) and all other crops grown in areas with 30" or more of annual rainfall may be planted 120 days or more after application. Barley, oat, wheat, and other grass seedlings, may be planted if the interval from



application to planting is 10 days per pint per acre east of the Mississippi River and 15 days per pint per acre west of the Mississippi River. For all other crops in areas with less than 30" of annual rainfall, the interval between application and planting is 180 days or more.

- Rainfast period: The effectiveness of Range Star[™] may be reduced if rainfall or irrigation occurs within 4 hours after postemergence applications.
- Stress: Unsatisfactory control may result if Range StarTM is applied to crops under stress such as stress due to lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures.
- Do not apply to crops that exhibit injury (leaf phytotoxicity or plant stunting) produced by any other prior herbicide applications, because this injury may be enhanced or prolonged by applying Range StarTM.
- Do not apply through any type of irrigation equipment. Do not contaminate irrigation ditches or water used for domestic purposes.
- This product cannot be used to formulate or reformulate any other pesticide product.

FOOD/FEED CROP-SPECIFIC INFORMATION

Pastures, Rangeland and Grass (Hay, Silage)PASTURE (INCLUDING PASTURE FOR HAY), RANGELAND AND GENERAL FARMSTEAD (Non-Cropland Only)

IMPORTANT

Range StarTM is recommended for use for pasture (including pasture grown for hay), rangeland and grass grown for hay or silage. , general farmstead (non-cropland only), weed and brush control, or use in State Recognized Noxious Weed areas (non-cropland areas).

Refer to the **ANNUAL WEEDS** and **BIENNIAL and PERENNIAL WEEDS** Application Rate and Timing tables for rate selection based on targeted weed or brush species. Some weed species will require tank mixes for adequate control. Rates above 4 pints of Range StarTM per acre are for spot treatments only. Retreatments may be made as needed; however, do not exceed a total of 8 pints of Range StarTM per treated acre during a growing season.

Range StarTM uses described in this situation also pertain to small grains (such as barley, <u>corn</u>, forage sorghum, oats, rye, sudangrass or wheat) grown for pasture, <u>hay</u>, <u>and silage only</u>. <u>or hay only</u>. Newly seeded areas, including small grains grown for pasture or hay, may be injured if rates of Range StarTM greater than 2 <u>pints per acre pt/A</u> are applied.

In newly established hybrid Bermudagrass, Pangolagrass, and stargrasses (*Cynodon spp.*), use 1-2 quarts of Range StarTM per acre to control or suppress weeds after planting vegetative propogules (stolens) of hybrid bermudagrasses. In addition to the weeds listed in the ANNUAL and BIENNIAL and PERENNIAL WEEDS tables, this rate of Range StarTM will control or suppress annual sedges, broadleaf signalgrass, crabgrass, and goosegrass. Best results will be obtained if Range StarTM is applied at the germinating stage of weeds. Under favorable conditions, this is usually 7-10 days after planting these grasses. Reduced control can be expected if weeds are allowed to reach 1" in height before application or if germination of weeds occurs 10 days after application.

Do not use on bentgrass, susceptible grass pastures (such as carpetgrass, buffalograss or St. Augustine grass), lespedeza, wild winter peas, vetch, clover and alfalfa pastures as injury will occur.

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When perennial weeds are reaching maturity, mowing and allowing some regrowth will enhance control. Difficult to control weeds and brush may require repeat application.

For pasture renovations, wait 3 weeks per quart per acre of Range StarTM used before interseeding or injury may occur.

If grasses are grown for seed or for seed-down purposes, do not apply after grass reaches the joint stage. Do not use seed from treated grasses for feed or food purposes.

Grazing and feeding restrictions - Non-lactating animals

Remove meat animals from treated areas 30 days prior to slaughter. There is no waiting period between treatment and grazing for non-lactating animals.

Grazing and feeding restrictions - Lactating animals

Do not graze lactating dairy animals within 7 days of treatment.

<u>Dry hay and silage</u> - Treated grasses may be harvested for dry hay <u>or silage</u> but do not harvest within 37 days of treatment.

Adjuvants or other spray additives (emulsifiers, surfactants, wetting agents, drift control agents, or penetrants) may be used for wetting, penetration, or drift control. Spray additives must be agriculturally approved when used in pasture applications. If spray additives are used, read and follow all use recommendations and precautions on product label.

PASTURE AND RANGELAND Tank Mixes: Range Star[™] may be applied in tank mixes with one or more of the following herbicides: Ally[®], Amber[®], Albaugh Dicamba DMA Salt or Banvel[®], Clarity[®], Rave[™].

SORGHUM (Mile)

Rates and Timings

Apply 1 pint of Range Star[™] per acre to sorghum in the 3-5 leaf stage (4-8" tall). Apply Range Star[™] when weeds are small (less than 3" tall) for best performance.

Applications of Range StarTM to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10 to 14 days. Sorghum growing under conditions of stress such as high moisture, low fertility, and abnormal temperature may be more sensitive to applications of Range StarTM. Do not use surfactants or oils with postemergence applications of Range StarTM on sorghum crops. Do not use Range Star if the potential for sorghum injury is not acceptable.

Do not graze or feed treated sorghum forage or silage prior to mature grain stage. If sorghum is grown for pasture, hay or silage, or hay, refer to the Pasture and Rangeland section of the Food/Feed Crop-Specific Information section of this label for livestock grazing and feeding restrictions. pasture use section on the Range StarTM container label. Do not apply Range StarTM to sorghum grown for seed production.

Make sure no more than one postemergence application is applied per growing season.

WEEDS CONTROLLED

Range StarTM, when applied at the recommended rate for grain sorghum, will control many actively growing ANNUAL broadleaf weeds and will reduce competition from established PERENNIAL broadleaf weeds as well as controlling their seedlings.

Annuals

Cocklebur, Common

Kochia

Morningglory, Ivyleaf

Morningglory, Tall

Pigweed, Prostrate

Pigweed, Redroot

Pigweed, Rough

Piaweed, Smooth

Pigweed, Tumble

Russian, Thistle

Sunflower, Annual

Perennials (Suppression)

Bindweed, Field

Horsenettle, Carolina

Nightshade, Silverleaf

Consult your local or state authorities for possible application restrictions, especially concerning aerial applications and advice concerning special local use situations.

RATES AND TIMINGS

Postemergence applications of Range StarTM can be made to sorghum in the 3 to 5 loaf stage (4 to 8" tall). For best performance, make application when weeds are small (less than 3" tall). Do not use surfactants or oils. The use of surfactants or oils may increase the risk of crop injury.

BROADCAST RATE PER TREATED ACRE:

1.0 pint per acre

SORGHUM Tank Mixes: TANK MIX TREATMENT Range Star[™] may be applied in tank mixes with one or more of the following herbicides: Atrazine, Basagran[®], BROX[™] 2EC Herbicide or Buctril[®], Laddok[®] S-12, Paramount[®], Peak[®], or Permit[®].

Range StarTM plus atrazine:

For improved control of emerged, actively growing broadleaf weeds including triazine telerant species and added suppression of perennial broadleaf weeds, tank mix 1.0 pint of Range Star with 0.5 to 1.25 lb ai atrazine per treated acre. For centrol of grasses (less than 1.5" tall), tank mix 1.0 pint of Range Star with 2.0 lb ai atrazine per treated acre. For best performance and minimal crop injury, make application when the sorghum is in the 3 to 5 leaf stage (4 to 8" tall) and when broadleaf weeds are small (less than 3" tall). The atrazine rate will depend upon soil texture and length of residual weed centrol desired. Do not apply tank mixtures of Range Star and atrazine on coarse soils or medium textured soil with less than 1.5% organic matter. Do not apply postemergence in OK, TX, NM, CO and Western KS before sorghum is 6" tall.

Follow all atrazine label restrictions and state and federal restrictions pertaining to atrazine application.

SUGARCANE IMPORTANT

Consult your local or state authorities for possible application restrictions, especially concerning aerial applications and advice concerning special local use situations.

WEEDS CONTROLLED

Range StarTM, when applied at recommended rates, will control the ANNUAL and PERENNIAL broadleaf weeds commonly found in sugarcane, such as:

ANNUALS

Burclover, California
Buttercup (Ranunculus Spp.)
Chickweed, Common
Clovers, Annual
Cocklebur, Common
Eveningprimrose, Cutleaf
Fleabane, Annual
Geranium, Carolina
Henbit
Lettuce, Prickly

PERENNIALS

Aster, Spp.
Bindweed, Field
Chickweed, Mouseear
Dandelion, Common
Dock, Curly
Dogfennel

Pepperweed, Virginia
Pigweed, Prostrate
Pigweed, Redroet (Carelessweed)
Pigweed, Smooth
Purslane, Common
Ragweed, Common
Shepherdspurse
Sida, Prickly (Teaweed)
Sowthistle, Annual
Spurge, Prostrate

Garlic, Wild Goldenrod Spp. Groundsol, Cressleaf Onion, Wild Sowthistle, Perennial



APPLICATION DIRECTIONS

DO NOT USE AERIAL APPLICATION EQUIPMENT IF SENSITIVE CFORS ARE CROWING IN THE VICINITY OF THE AREA TO BE TREATED. When band treatments are desired, apply an equivalent rate and volume per acre by using the formula below:

Band width in inches Row width in inches	- x	Broadcast RATE per treated acre	40000	Band RATE per treated acre
Band width in inches Row width in inches	- ×	Broadcast VOLUME	=	Band VOLUME

Applications of Range StarTM can be made any time after the weeds have emerged and are actively growing but prior to the close-in stage of sugarcane. When possible, direct the spray beneath the sugarcane canopy in order to minimize the likelihood of crop injury. The use of directed sprays will also aid in maximizing spray coverage of weed foliage. Application rates and timing are given below. Use the higher level of listed rate ranges when treating dense vegetative growth.

- For control of listed ANNUAL broadleaf weeds, apply 1 quart of Range Star[™] per treated acre.
- For suppression of listed PERENNIALS, apply 1 23 quarts of Range Star[™] per treated acre.
 □For centrel of listed PERENNIAL broadleaf weeds, apply 2 3 quarts of Range Star[™] per treated acre.

Retreatments may be made as needed, however, do not exceed 8 quarts of Range Star[™] per treated acre during a growing season.

TANK MIX TREATMENTSSUGARCANE Tank Mixes: Range StarTM may be tank mixed with one or more of the following herbicides: Asulox[®], Atrazine, Evik[®], Sencor[®], or Sinbar[®]. for control of grasses or additional broadleaf weeds. Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates and timings, weeds controlled, geographic and other restrictions.

KVIES LEK IKEVIEN
ACRE (Ib ai)
2/5 to 8.0
2.0 to 3.0
2/5 to 4.0
3 ½ to 8 ½
2.7 to 6.0
0.75 to 3.0
1.6 to 3.2

FALL AND SPRING SEEDED WHEAT (NOT UNDERSEEDED TO LEGUMES) IMPORTANT WHEAT (Fall and Spring-seeded)

If small grains are grown for pasture or hay only, refer to the <u>Pastures, Rangeland and Grass (Hay, Silage)</u> section of this label. <u>PASTURE (INCLUDING PASTURE FOR HAY)</u>, <u>RANGELAND AND GENERAL FARMSTEAD (Non-cropland only) section.</u>

Do not graze or harvest for livestock feed prior to crop maturity. Do not use Range Star[™] in wheat underseeded to legumes.



EARLY SEASON APPLICATIONS:

Apply 0.5-1 pint of Range StarTM per acre to wheat unless using one of the wheat specific programs below.

Early season applications to spring-seeded wheat must be made after tillering and before wheat reaches the 6-leaf stage.

Early season applications to fall-seeded wheat must be made after tillering and prior to the jointing stage. Care should be taken in staging early developing wheat varieties such as TAM 107, Madison, or Wakefield to be certain that the application occurs prior to the jointing stage.

SPECIFIC USE PROGRAMS FOR FALL-SEEDED WHEAT ONLY:

Up to 1.33 pints of Range StarTM per acre may be applied on fall-seeded wheat after the wheat begins to tiller for suppression of perennial weeds, such as field bindweed. Applications may be made in the fall following a frost but before a killing freeze. Periods of extending stresses such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, do not use if the potential for crop injury is not acceptable.

PREHARVEST APPLICATIONS:

Range StarTM can be used to control weeds that may interfere with harvest of wheat. Apply up to 2 pints of Range StarTM per acre as a broadcast or spot treatment to annual broadleaf weeds when wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if application can be made when weeds are actively growing but before weeds canopy.

A waiting interval of 7 days is required before harvest. Do not use preharvest-treated wheat for seed unless a germination test is performed on the seed with an acceptable result of 95% germination or better.

For control of additional broadleaf weeds or grasses, Range Star[™] may be tank mixed with other herbicides such as Ally, Gly Star[™] Plus or Roundup, Ultra that are registered for preharvest use in wheat.

Preharvest use of Range StarTM is not registered for use in California.

WEEDS CONTROLLED

Range StarTM, when applied at recommended rates, will control ANNUAL and BIENNIAL broadleaf weeds commonly found in small grains, such as:

Buckwheat, Wild

Bittercress, Smallerflower

Chickwood, Common

Cockle, Cow*

Cocklebur, Common*

Eveningprimrose, Common

Flax

Henbit*

Knotweed*

Kochia

Lambsquarters, Common

Lettuce, Prickly

Mallow, Common*

Mustards

Nightshade, Black*

Pennycress, Field

Pigweed, Redroot (Carelessweed)

Pigweed, Rough

Purslane, Common*

Ragwood, Common

Sheperdspurse

Smartweed, Pennsylvania*

Sowthistle, Annual*

Sunflower

Tansymustard

Thistle, Russian

Velvetleaf*

^{*}Use higher rate or tank mixes for control of noted (*) annuals.

Range StarTM can be used to control sulfonyl urea resistant or tolerant viceds. Tolerant biotypes of the following weeds are known to occur: Kochia: Russian thietle: Prickly !ettuce: Common !cmbsquarter-Consult County Extension Agents for programs to prevent tolerant woods from multiplying.

RATES AND TIMINGS

RANGE STARTM MUST BE APPLIED TO FALL SEEDED WHEAT AFTER IT IS FULLY TILLERED PRIOR TO THE JOINTING STAGE. APPLICATIONS TO SPRING SEEDED WHEAT MUST BE MADE BEFORE WHEAT EXCEEDS THE 5 LEAF STAGE.

Application of Range Star may be made after wheat is fully tillered to emerged and actively growing weeds. See specific crop for timing restrictions. For best performance, make application when weeds are in the 2-3 leaf stage and resettes are less than 2 inches across. Use the higher level of listed rate ranges when treating more mature weeds or dense vegetative growth.

BROADCAST RATE PER TREATED ACRE: 34 - 1 pint

TANK MIX TREATMENTS WHEAT Tank Mixes

For control of grasses or additional broadleaf weeds, Range StarTM may be tank mixed with the herbicides listed in the table below. Read and follow the label of each tank mix product used for precautionary statements, directions for use, weeds controlled, geographic and other restrictions.

Tank Mix Partner	Rate per Acre		
Aim™	0.3 ounce		
Ally®	0.05-0.1 ounce ¹		
Amber®	0.14-0.28 ounce ¹	\neg	
BROX™-M Herbicide or Bronate®	0.75-1.5 pints	$\neg \uparrow$	
BROX™ 2EC Herbicide or Buctril®	1-1.5 pints		
<u>Canvas®</u>	0.2-0.4 ounce ¹		
<u>Curtail™</u>	2 - 2.67 pints		
<u>Dakota[®]</u>	16 fluid ounces		
Express [®]	0.083-0.167 ounce		
Finesse [®]	0.167-0.33 ounce ¹	\neg	
<u>Glean</u>	0.167 ounce		
Harmony® Extra	0.167-0.33 ounce ¹		
Karmex ^{® 3}	0.5-1.5 pounds		
2,4-D amine	4-20 fluid ounces ⁴		
Sencor®, (Metribuzin³)	0.25-0.375 pound a.i.		
Peak ^{® 1}	0.25-0.38 ounce		
Stinger™	4 – 5.33 fluid ounces		
Tiller®2	1-1.7 pints		

Do not use low rates of sulfonylurea herbicides such as Ally, Amber, Canvas, Express, Finesse, Glean®, Harmony® Extra, and Peak® on more mature weeds or on dense vegetative growth.

2Do not use Range Star™ as a tank mix treatment with Dakota® or Tiller® in Durum wheat. Do not tank

Tank mixes with Karmex and metribuzin are for use in fall-seeded wheat only.

mix Tiller if wild oat is the target weed.

Range StarTM contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with 2,4-D, do not exceed a combined total of 1.0 pound a.e. per acre of 2,4-D and do not exceed 0.5 pound a.e. of 2,4-D unless injury to wheat is acceptable.

BROADCAST RATE PER TREATED ACRE: Apply 1/2 - 1 pint¹ Range StarTM with:

Herbicide .	Amount of product ^{2,3,4}
2,4-D amine or ester (4 lb/gal)	8.0 - 12.0 oz
MCPA (4 lb/gal)	8.0 – 12.0 oz
Bromoxynil (Buctril® 2 lb/gal)	16.0 – 24 oz
Metribuzin (Sencor®)	1.5 – 10.0 oz
Diuron (Karmex® 80 WP)	1/2 - 1.5 lb
Sulfonylureas	
Express®	1/6 – 1/3 oz
Harmony® Extra	0.3 – 0.6 oz
Amber®	0.14 – 0.28 oz
Finesse®	0.1 – 0.2 oz
Ally	1/20 - 1/10 oz
Glean®	1/12 – 1/6 oz

In spring seeded wheat, ½ pint of Range StarTM should be tank mixed with the 1/3 pint rate of 2,4-D only. In spring seeded wheat, if the higher rate of 1 pint Range StarTM is used, do not tank mix with 2,4-D.

BETWEEN CROP APPLICATIONS, CONSERVATION RESERVE PROGRAMS, GENERAL FARMSTEAD AND FALLOW SYSTEMS

These uses are considered Food/Feed Crops when harvested, grazed or foraged. Refer to the ADDITIVES section for information on adjuvant restrictions and the NON-FOOD/FEED USE (LAND NOT HARVESTED, GRAZED OR FORAGED) – SPECIFIC INFORMATION section for specific use directions.

NON-FOOD/FEED USE (LAND NOT HARVESTED, GRAZED OR FORAGED) – SPECIFIC INFORMATION

Between Crop Applications

PREPLANT DIRECTIONS (POSTHARVEST, FALLOW, CROP STUBBLE, SET-ASIDE) FOR BROADLEAF WEED CONTROL:

Range Star[™] can be applied either postharvest in the fall, spring, or summer during the fallow period or to crop stubble/set-aside acres. Apply Range Star[™] as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost or in the fallow cropland or crop stubble the following spring or summer.

Refer to the Crop Rotational Restrictions and General Restrictions and Limitations for the recommended interval between application and planting to prevent crop injury.

Rates and Timings:

Apply 0.5-6 pints of Range Star™ per acre. Refer to the ANNUAL WEEDS and BIENNIAL AND PERRENIAL WEEDS Application Rate and Timing tables to determine the use rates for specific targeted weed species. Retreatments may be made as needed; however, do not exceed a total of 8 pints of Range Star™ per treated acre during a growing season. For best performance, apply Range Star™

¹ Use the ¾ to 1 pint rate of Range StarTM for difficult to control weeds noted by an asterisk in the Weeds Controlled section on page XXX.

² Based on 4 pounds per gallon formulations of MCPA and 2,4-D.

³ If additional residual weed control is desired, weeds have belted or a high population of the weeds are present, select the higher rate recommendations.

⁴ Read and follow the label of each tank mix product used for precautionary statements, weeds controlled, geographic and other restrictions.



when annual weeds are less than 6" tall, when biennial weeds are in the rosette stage and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. The most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem articroke occurs it Plange StarTM is applied when the majority of weeds have at least 4-6" of regrowth or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts such as rhizomes or bulblets, after the effective period for Range Star™. For seedling control, a follow-up program or other cultural practices could be instituted.

Between Crop Tank Mixes

Apply 0.5-2 pints of Range Star™ per acre in tank mixes with one or more of the following herbicides for control of annual weeds, or 2-8 pints of Range Star™ per acre for control of biennial and perennial weeds:

Aim™ <u>Glyphosate</u> Ally® Gramoxone® Extra <u>Ambe</u>r® Kerb™ Landmaster® BW Atrazine <u>Curtail™</u> Paramount® Cyclone® Sencor® Distinct^e Tordon™ 22K Fallow Star™ Touchdown[®] <u>Fallowmaster®</u> 2.4-D Finesse[®]

CONSERVATION RESERVE PROGRAMS AND GENERAL FARMSTEAD

Range Star™ is recommended for use for Conservation Reserve Programs, general farmstead (non-cropland only), weed and brush control, or use in State Recognized Noxious Weed areas (non-cropland areas).

Refer to the ANNUAL WEEDS and BIENNIAL AND PERRENIAL WEEDS Application Rate and Timing tables for rate selection based on targeted weed or brush species. Some weed species will require tank mixes for adequate control.

Rates above 4 pints of Range Star™ per acre are for spot treatments only. Retreatments may be made as needed; however, do not exceed a total of 8 pints of Range Star™ per treated acre during a growing season.

Grasses in Conservation Reserve Program Areas

Annual Broadleaf Weeds – Apply when weeds are actively growing. Use higher rates on older weeds. Excessive injury may result if applied to young grasses with fewer than 6 leaves or prior to grasses being well established.

Biennial and Perennial Broadleaf Weeds – Range Star™ may be used to suppress or control biennial and perennial broadleaf weeds in established grasses. Apply to actively growing weeds. Treat biennial weeds when they are in the seedling to rosette stage and before flower stalks become apparent. Treat perennial weeds in the bud to bloom stage.

<u>Farmstead and Spot Application in Pastures (Including pasture for hay),</u> Fencerows <u>Treatment and General Farmstead (Non-cropland only)</u>

Application Instructions



Range Star[™] may be applied using water or oil and water emulsions in spot application to control undesirable vegetation using handgun or similar types of application equipment. In addition to weed species listed in the ANNUAL WEEDS and BIENNIAL AND PERRENIAL WEEDS Application Rate and Timing tables, these treatments may be used to control or suppress woody plant species listed below.

The following list of trees and vines can be controlled on farmsteads and fencerows as foliar, basal, or cut surface treatments:

Alder	Dogwood	Kudzu	Rose, McCartney
Ash	l Elm	Locust, Black	Rose, Multiflora
Aspen	Grape	Maple	Sagebrush, Fringe
Basswood	Greenbriar	Mesquite	Sassafras
Beech	Hawthorn (Thornapple)	Oak	Spruce
Blackberry	Hemlock	Oak, Poison	Sumac
Blackgum	Hickory	Olive, Russian	Sweetgum
Cedar	Honeylocust	Persimmon, Eastern	Sycamore
Cherry	Honeysuckle	Pine	Tarbrush
Chinquapin	Hornbeam	Plum, Sand (Wild Plum)	Willow
Cottonwood	Huckleberry	Poplar	Witchhazel
Creosotebush	Huisache	Rabbitbrush	Yaupon
Dewberry	Ivy, Poison	Redcedar, Eastern	Yucca

Before using, read and follow grazing and feeding restrictions on page [].

To prepare oil and water emulsions, mix in the <u>order and proportions indicated below. The solution should remain milky colored without an oily layer on top when under agitation. If an oily layer forms, increase the amount of emulsifier or change to a more effective emulsifier following order: water, emulsifier, chemical and oil. Mix in the following proportions:</u>

Total Mix (gal)	Water (gal)	Emulsifier* (oz)	Range Star™ (pt)	Diesel (gal)
10	8 .75	1.5	2.0	1.0
50	4 3.75	7.5	10.0	5.0
100	87.5	15.0	20.0	10.0

* Some emulsifiers are more effective than others. Mixture should remain milky colored without oily layer on top when under agitation. If oily layer forms, increase the amount of emulsifier or change to a more effective emulsifier.

For pastures, do not exceed 28 gallons of spray solution per treated acre per application. Twenty-eight gallons of spray solution contains 0.7 lb ae dicamba and 2.0 lb ae 2,4-D. Spray individual plants to wet. Do not allow this spray mixture to come into contact with desirable vegetation.

For fencerows and general farmstead, dDo not exceed 40 gallons of spray solution per treated acre per application. Forty gallons of spray solution contains 1.0 lb a.e. dicamba and 2.87 lb a.e. 2,4-D. Spray individual plants to wet. Do not allow this spray mixture to come into contact with desirable vegetation.

To control brush, briars, and weeds along fencerows surrounding pasture and ranch lands, and fallow fields, use a tank mix of 2.5% Range Star™, 87.5% water, 10% diesel fuel, and sufficient emulsifier (to mix the diesel and emulsifier). The diesel oil in this tank mix will damage or kill desirable grasses and should not be used in pastures or where damage to desirable species cannot be tolerated.

- 1. Water: Begin by agitating a thoroughly clean sprayer tank with the desired quantity of clean water.

 Maintain constant agitation during complete mixing procedure.
- 2. Emulsifier: Add 0.5% volume to volume

- 3. Range Star™: Add 2.5 gallons per 100 gallons of total intended solution.
- 4. Diesel Oil: Add 10 gallons per 100 gallons of total intended solution.

Maintain constant agitation during application. Under good agitation, the spray solution should be milky white with no oily layer on top. If an oily layer forms, increase the amount of emulsifier or change to a more effective emulsifier.

For Spraying Foliar Applications

- 1. Spray when leaves have reached full size but have not hardened due to drought or maturity.
- 2. Spray individual plants to wet with handgun.
- 3. For larger stems (up to 3" in diameter) and hard to control species, direct spray stream to base of stems to wet the stem at soil surface in addition to wetting the foliage.
- 4. Do not apply under drip line of desirable trees or adjacent to desirable vegetation.

For Dormant Basal Applications

- 1. Increase diesel content to 15% or 15 gallons/100 gallons of total mixture.
- 2. Spray in late winter and early spring before plants break dormancy.
- 3. Spray the bottom 24" of stem to wet on all sides.
- 4. For larger stems (up to 3" in diameter) and hard to kill species, direct spray solution to base of stems to wet the soil at the stem/soil junction in addition to wetting the stem.
- 5. Do not apply under drip line of desirable trees or adjacent to desirable vegetation.

Cut Surface Treatments

Range Star™ may be applied as a cut surface treatment for control of unwanted trees and prevention of sprouts of cut trees. Use Range Star™ in an undiluted state.

FRILL OR GIRDLE TREATMENTS: Make a continuous cut or a series of overlapping cuts using an axe to girdle tree trunk. Spray or paint cut surface with Range Star™.

STUMP TREATMENTS: Spray or paint freshly cut surface with Range Star™. The cambium layer (the layer adjacent to the bark) should be thoroughly wet. Treat stumps within 6 hours after cutting.

PREPLANT APPLICATION DIRECTIONS FOR BROADLEAF CONTROL IN CROPLAND ROTATED TO WHEAT (POST-HARVEST / FALLOW / STUBBLE / SET-ASICE) IMPORTANT

Before using this product, read and carefully observe all applicable directions, restrictions, and precautionary statements in this booklet and on the container label.

WEEDS CONTROLLED

Range Star™, when applied at the recommended rates, will control the ANNUAL and BIENNIAL weeds and suppress the PERENNIAL weeds listed below.

	ANNUALS	
Buckwheat, Wild	Mustards	Salsify, Western
Cockle, Cow	Nightshade, Black	Smartweed, Pennsylvania
Cocklebur, Common	Pigweed, Redroot (Carelessweed)	Sowthistle, Annual
Knotweed	Pigweed, Rough	Sunflower
Kochia	Purslane, Common	Tansymustard
Lambsquarters, Common	Ragweed, Common	Thistle, Russian
Mallow, Common	Sage, Lanceleaf	Velvetleaf
	BIENNIALS	
Carrot, Wild	Starthistle, Yellow	Thistle, Musk
Ragwort, Tansy	Thistle, Bull	Thistle, Plumeless
	PERENNIALS	
Bindweed, Field	Dock, Curly	Thistle, Canada

RATES AND TIMINGS

Application may be made to fallow land, wheat stubble or land to be rotated to wheat. Application should be made to emerged and actively growing weeds. Use higher rate when treating dense vegetative growth. Avoid disturbing treated areas for seven days following application.

Wheat injury may occur if the interval between application and planting is less than 10 days for each pint per acre of Range StarTM used. Exclude days when ground is frozen.

Weed Type & Stage	Broadcast rate per Treated Acre Amount	
Annual		
Small, actively growing	1.0 – 1.5 pints	
(less than 4 inches)		
Established weed growth	1.5 – 3.0 pints	
(greater than 4 inches)	·	
Biennial		
Rosette diameter		
(3 inches or less)	1.5 – 2.0 pints	
(3 inches or more)	2.0 – 4.0 pints	
Greater than 4 inches, tillering	4.0 pints	
bolted or flowering		
Perennial		
Suppression or top growth control	2.0 – 4.0 pints	
Seasonal Control	4.0 – 8.0 pints_	

Add 0.5% v/v of an agriculturally approved surfactant to Range StarTM when used alone or in a tank mix. The addition of a surfactant will enhance spray coverage and the herbicide's penetration of weed foliage.

Retreatments may be made as needed; however, do not exceed a total of 8 pints of Range $\operatorname{Star}^{\mathsf{TM}}$ per treated acre.

TANK MIX TREATMENTS

Range StarTM may be tank mixed with one or more of the following herbicides for control of grasses or additional broadleaf weeds. Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates and timings, weeds controlled, geographic or other restrictions. Add 0.5% v/v of an agriculturally approved surfactant to all tank mixes.

Herbicide					Rate per Treated Acre (lb ai)	
Atrazine					1/2 to 3.0	
Chlorsulfuror	า (Glean	1 [®])			0.016 to 0.024	
Cyanazine	•	•			1-3/5 to 3-1/5	
Glyphosate	(Gly	Star™	Original	or	1/4 to 2.0	
Roundup®)	,	, , , , , , , , , , , , , , , , , , , ,				
Metribuzin					1/3 to 3/4	
Paraquat					1/2 to 1.0	

STORAGE AND DISPOSAL

PROHIBITIONS

Do not contaminate water, food or feed by storage or disposal.

PESTICIDE STORAGE

Store in original container in a well-ventilated area separately from fertilizer, feed and foodstuffs. Avoid cross-contamination with other pesticides. Spillage or leakage should be contained and absorbed with clay granules, sawdust, or equivalent material for disposal.

PESTICIDE DISPOSAL

Pesticide wastes are toxic. Triple rinse pesticide from containers and use rinsates in the pesticide application. Improper disposal of excess pesticide, spray mixture, or rinsate, is a violation of Federal Law and may contaminate groundwater. 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

Plastic or Metal: After triple rinsing (or equivalent), offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities, such as burning of plastic containers. If burned, stay out of smoke.

WARRANTY LIMITATIONS AND DISCLAIMER

Seller warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the Directions for Use when used under normal conditions. This is the only warranty made on this product. No other express and no implied warranty of merchantability or fitness for a particular purpose is made outside of this label. Therefore, neither this warranty nor any other warranty of merchantability or fitness for a particular purpose, express or implied, extends to the use of this product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), under abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes, etc.) or under conditions not reasonably foreseeable to or beyond the control of seller.

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When buyer or user suffers losses or damages resulting from the use or handling of this product (including claims based on contract, negligence, strict liability, or other legal theories), buyer or use: much promptly notify seller, in writing, of any claims to be eligible to receive either remedy: given below. The exclusive remedy of the buyer or user and the limit of liability of seller will be one of the following, at the election of the seller:

- ----1. Refund of purchase price paid by buyer or user for product bought or
 - 2. Replacement of amount of product used.

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The seller will not be liable for consequential or incidental damages or losses.

The terms of this Warranty Limitations and Disclaimer cannot be varied by any written or verbal statements or agreements. Any employee or sales agent of the seller is not authorized to vary or exceed the terms of this Warranty Limitations and Disclaimer in any manner.

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