

42750-55

5-13-2008

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

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

13 MAY 2008

Morris Gaskins
Albaugh, Inc.
P.O. Box 2127
Valdosta, GA 31604-2127

Dear Mr. Gaskins:

Subject: RED Label Amendment for Dicamba and 2,4-D
Range Star
EPA Registration Number 42750-55

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. Under the PPE section, revise the chemical-resistant glove statement to read "chemical-resistant gloves (except for pilots)." Also add the statement "Wear protective eyewear (goggles or face shield)." Note that in addition to the PPE specified in the 2,4-D RED, the acute toxicity review also requires that all handlers wear chemical-resistant gloves and **protective eyewear**.
2. The mechanical transfer engineering control text (the first paragraph under "engineering controls statements") starting with "For containers of 5 gallons or..." is no longer required per the 2,4-D RED and may be deleted from the label.
3. The text in bold type must be added to the User Safety Requirements text currently on the label:

"If no such instructions for washables **exist**,"

4. The text in bold type must be added to the User Safety Recommendation text currently on the label:

"User should remove clothing/**PPE** immediately if pesticide gets inside."

- 5. The early entry PPE must be revised to read:
 - Coveralls worn over short-sleeve shirt and short pants
 - Chemical-resistant footwear plus socks
 - Chemical-resistant gloves made of any water-proof material
 - Chemical-resistant headgear for overhead exposure
 - Protective eyewear

- 6. A Non-Agricultural Use Requirements box must be added to label with the following entry restriction text:

“NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses. Do not enter or allow people (or pets) to enter the treated area until sprays have dried.”

- 7. Revise the spray drift heading to read “Spray Drift Management”.
With the exception of drift-related text appearing in the Environmental Hazards (“Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas”) and General Precautions and Restrictions (“Do not apply this product in a way that will contact workers or other persons, either directly or through drift”), all drift text appearing on the label must be placed together and be located below the required text currently on the label. Any conflicting text must be deleted from the label. In addition, delete the reference to chemigation from the first paragraph of the spray drift management section.

- 8. Delete the “maximum seasonal use rate” heading, as well as the “maximum rate per acre per application” and the “maximum rate per acre per season” columns (and text therein) from the table on page 13 of the label, as this provides incomplete information on rate restrictions.

- Revise the “Pasture and Rangeland Restrictions” to replace “Do not apply more than 5 ½ pints per acre per application” with the following:

“Do not cut forage for hay within 7 days of application.

Postemergence:

For susceptible annual and biennial broadleaf weeds: Do not exceed 2 ¾ pints per acre per application.

For moderately susceptible biennial and perennial broadleaf weeds: Do not exceed 2 ¾ to 5 ½ pints per acre per application.

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For difficult to control weeds and woody plants: Do not exceed 5 1/2 pints per acre per application.

Spot treatment: Do not exceed 5 1/2 pints per acre.

Maximum of 11 pints per acre per year."

- Revise the statement "...use 4-8 pints of Range Star per acre to control..." on page 15 of the label, in the "Pasture and Rangeland Restrictions" section. This rate exceeds the rate restrictions for this use.

- Revise the first bullet under the "Sorghum Restrictions" section to read as follows:

"Maximum of 2.7 pints per acre per application."

- Add the following statement to the "Sugarcane Restrictions" section:

"Do not apply more than 11 pints per acre per crop cycle."

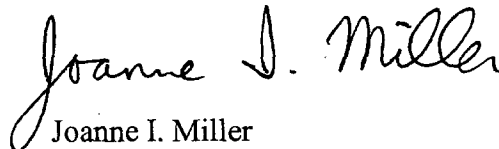
- Add the following statement to the "Conservation Reserve Programs Restrictions" section:

"The preharvest interval (PHI) is 7 days."

9. To the Warranty section add "To the extent consistent with applicable law" in front of "the company makes no other" and "the exclusive remedy".
10. Change "To the extent permitted by law" to read "To the extent consistent with applicable law", wherever it appears under the terms and conditions of use.
11. Please note: Final product reregistration cannot be considered until after all active ingredients in this product are eligible for reregistration.

One copy of the label stamped "Accepted with Comments" is enclosed for your records. Please submit one copy of the final printed label before the product is released for shipment. If you have any questions, please contact Tracy White by phone at (703) 308-0042 or via email at white.tracy@epa.gov.

Sincerely,



Joanne I. Miller
Product Manager (23)
Herbicide Branch
Registration Division (7505P)

Enclosure

Wed 6/5/07

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ED NOTE: CLEAN DRAFT FOR 2,4-D RED 8-MONTH RESPONSE.

RANGE STAR

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-p-anisic acid)*	12.4%
Dimethylamine salt of 2,4-dichlorophenoxyacetic acid**	35.7%
OTHER INGREDIENTS:	51.9%
TOTAL	100.0%

*This product contains 10.3% 3,6-dichloro-p-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

**ACCEPTED
with COMMENTS
In EPA Letter Dated:**

13 MAY 2008

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

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.)

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FIRST AID	
IF IN EYES:	<ul style="list-style-type: none"> • 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.
IF SWALLOWED:	<ul style="list-style-type: none"> • 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.
IF ON SKIN OR CLOTHING:	<ul style="list-style-type: none"> • 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	
Have the product container 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

EPA Reg. No. 42750-55

EPA Est. No. xxxxxx-xx xxx

NET CONTENTS

Manufactured by:
ALBAUGH, Inc.
Ankeny, IA 50021

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

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.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some materials that are chemical-resistant to this product are butyl rubber, natural rubber, neoprene or nitrile rubber. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

All mixers, loaders, applicators, flaggers, and other handlers must wear:
Long-sleeved shirt and long pants.

Shoes and socks.

Chemical resistant gloves when applying with any handheld nozzle or equipment, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

Chemical resistant apron when applying with any handheld nozzle or equipment, mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate.

See engineering controls for additional requirements.

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.

ENGINEERING CONTROLS STATEMENTS

For 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.

Pilots must use an enclosed cockpit that meets the requirements listed in the WPS for agricultural pesticides [40 CFR 170.240(d)(6)]

When handlers use 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:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. 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.

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Discard clothing or 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.

ENVIRONMENTAL HAZARDS

This pesticide may be toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate. Apply this product only as directed on label.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

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.

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

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.

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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:

1. Coveralls
2. Chemical-resistant gloves made of any waterproof material.
3. Shoes plus socks
4. Protective eyewear.

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

GENERAL INFORMATION

Range Star™ 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 Star™ 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 Star™ 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 Star™ to actively growing weeds using aerial, broadcast, band, or spot spray applications. Range Star™ 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 Star™ 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 Star™ during their development or growing stage.

Do not treat areas where either possible downward movement into the soil or surface washing may cause contact of Range Star™ 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™ 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.

GROUND APPLICATION (BANDING)

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

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Band width in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

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.

SPRAY DRIFT

A variety of factors including weather conditions (e.g. wind direction, wind speed, temperature, relative humidity) and method of application (e.g., ground, aerial, airblast, chemigation) can influence pesticide

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drift. The applicator must evaluate all factors and make appropriate adjustments when applying this product.

Droplet Size

When applying sprays that contain 2,4-D as the sole active ingredient, or when applying sprays that contain 2,4-D mixed with active ingredients that require a Coarse or coarser spray, apply only as a Coarse or coarser spray (ASAE standard 572) or a volume mean diameter of 385 microns or greater for spinning atomizer nozzles.

When applying sprays that contain 2,4-D mixed with other active ingredients that require a Medium or more fine spray, apply only as a Medium or coarser spray (ASAE standard 572) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.

Wind Speed

Do not apply at wind speeds greater than 15 mph. Only apply this product if the wind direction favors on-target deposition and are not sensitive areas (including, but not limited to, residential areas, bodies of water, known habitat for nontarget species, nontarget crops) within 250 feet downwind. If applying a Medium spray, leave one swath unsprayed at the downwind edge of the treated field.

Temperature Inversions

If applying at wind speeds less than 3 mph, the applicator must determine if: a) conditions of temperature inversion exist, or b) stable atmospheric conditions exist at or below nozzle height. Do not make applications into areas of temperature inversions or stable atmospheric conditions.

Susceptible Plants

Do not apply under circumstances where spray drift may occur to food, forage, or other plantings that might be damaged or crops thereof rendered unfit for sale, use or consumption. Susceptible crops include, but are not limited to cotton, okra, flowers, grapes (in growing stage), fruit trees (foliage), soybeans (vegetative stage), ornamentals, sunflowers, tomatoes, beans, and other vegetables, or tobacco. Small amounts of spray drift that might not be visible may injure susceptible broadleaf plants.

Other State and Local Requirements

Applicators must follow all state and local pesticide drift requirements regarding application of 2,4-D herbicides. Where states have more stringent regulations, they must be observed.

Equipment

All aerial equipment and ground application equipment must be properly maintained and calibrated using appropriate carriers or surrogates.

For aerial equipment, the boom length must not exceed 75% of the wingspan or 90% of the rotor blade diameter.

Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety. This requirement does not apply to forestry or rights-of-way applications.

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When applications are made in a crosswind, the swath will be displaced downwind. The applicator must compensate for this by adjusting the path of the aircraft upwind.

For ground boom application, do not apply with a nozzle height greater than 4 feet above the crop canopy.

SPOT OR SMALL AREA APPLICATION

Range Star™ 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 (Gallons of water)	Fluid Ounces* of Range Star™ 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 ½% (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.

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

Application Equipment: 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.

ANNUAL WEEDS

Application Rate and Timing

(Applicators must follow maximum application rates in the Use Specific Information sections of the label)

Weeds Controlled (including ALS- and triazine-resistant)	Range Star™ Rate Per Acre (according to weed growth stage)					
	0.5 pint	1 pint	1.5 pints	2 pints	3 pints	4 pints
Beebalm, Spotted	---	---	---	pre-bloom	post-bloom	---
Broomweed	1-3"	3" branching	---	branching	---	after branching
Buckwheat, Wild	---	1-6"	---	---	---	---
Buffalobur	---	---	---	1-6"	---	flowering
Burdock	---	pre-flower	---	---	---	---
Buttercup	---	pre-flower	---	early bloom	late bloom	---
Chickweed, Common	---	seedling	1-3"	---	---	---
Cockle, Cow	---	< 3"	---	---	---	---

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Weeds Controlled (including ALS- and triazine-resistant)	Range Star™ Rate Per Acre (according to weed growth stage)					
	0.5 pint	1 pint	1.5 pints	2 pints	3 pints	4 pints
Cocklebur, Common	---	1-6"	6-12"	12-18"	---	---
Coreopsis, Plains	---	1-6"	---	---	---	---
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	---	> 3" runners	---	actively growing
Kochia	---	1-6"	6-10"	10-20"	---	actively growing
Lambsquarters, Common	---	1-6"	6-10"	10-20"	---	actively growing
Mallow, Common	---	< 3"	---	---	---	---
Morningglory, Ivyleaf	---	pre-flower	---	---	---	---
, Tall	---	pre-flower	---	post-flower	---	---
Mustards, Annual	---	rosette	---	early bolt	---	---
, Tansy	---	< 3"	---	---	---	---
Pennycress, Field	---	---	---	rosette	---	---
Pepperweed, Virginia	---	---	1-3"	3-6"	after branching	---
Pigweed, Prostrate	---	< 3"	---	---	---	---
, Redroot	---	< 3"	3-10"	---	---	---
, Smooth	---	< 3"	---	---	---	---
, Tumble	---	< 3"	---	mature	---	---
Poorjoe	---	prior to flower	---	---	---	actively growing
Purslane, Common	---	< 3"	3-8"	---	---	---
Ragweed, Common	1-3"	3-6"	6-10"	> 10"	---	---
, Lanceleaf						
, Western						
Sedge ¹	---	---	---	actively growing	---	---
Shepherdspurse	---	rosette	---	---	---	---
Smartweed, Pennsylvania	---	< 4"	---	---	4-12"	---
Sneezeweed, Bitter	---	1-4"	prior to flower	flower	---	---
Sowthistle	---	rosette	---	bolting	---	---
Sunflower	---	1-3"	3-6"	6-24"	---	---
Thistle, Russian	---	---	---	rosette	---	---
Velvetleaf	---	< 6"	6-20"	> 20"	---	---

¹For use in non-food/feed crop only. Adding crop oil concentrate has shown to improve performance on actively growing annual sedge.

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BIENNIAL and PERENNIAL WEEDS
 Application Rate and Timing
 (Applicators must follow maximum application rates in the
 Use Specific Information sections of the label)

Weeds Controlled	Range Star™ Rate Per Acre (according to weed growth stage)					
	0.5 pint	1 pint	1.5 pints	2 pints	3 pints	4-6 pints
Bindweed, Field	---	---	---	---	---	actively growing
Bittercress ⁵	---	2-3"	---	---	---	---
Buckeye, species ¹	---	---	---	---	full leaf	---
Bullnettle ^{2, 5}	---	---	---	flower	---	---
Chicory	---	---	---	---	early bolting	---
Clover, bur	---	---	pre-flower	---	---	---
Dandelion, Common	---	rosette	---	bolting	---	---
Dewberry, Southern ¹	---	---	---	---	---	spring or fall
Dock, Curly	---	---	prior to bolting	---	after bolting	---
Elderberry ²	---	---	---	---	---	actively growing
Goldenrod, Missouri	---	---	---	3-15"	flower	---
Goldenweed, Common	---	---	---	---	---	actively growing
Groundsel, Texas	---	rosette	post-bolting	---	---	---
Honeysuckle, Hairy	---	---	---	---	spring or fall	---
Horsenettle, Carolina ¹	---	---	---	---	---	flower or berry
Ivy, Poison	---	---	---	after 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 ¹	---	---	---	full flower	---	---
, Black ¹	---	---	---	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	---	---	---	---	---	full leaf
Tallow Tree, Chinese ^{4, 5, 6}	---	---	---	---	---	full leaf
Thistle, Bull	---	---	rosette	bolting	---	actively growing
, Canada ²	---	---	---	---	---	actively growing

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Weeds Controlled	Range Star™ Rate Per Acre (according to weed growth stage)					
	0.5 pint	1 pint	1.5 pints	2 pints	3 pints	4-6 pints
, Musk	---	---	---	rosette/bolting	---	---
, Plumeless	---	---	rosette	bolting	---	---
Vetch, Hairy	---	1-4"	4-8"	8" full flower	---	---
Yankee weed	---	---	---	10-18"	---	rosette
Yellow Starthistle ¹	---	---	---	---	---	rosette

¹May require repeat applications.

²Recommended rate provides top growth suppression only.

³For 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.

⁴A second application may be required the following growing season under dense populations.

⁵Not 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.

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 Star™ or Range Star™ 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).

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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

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 Star™ 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)(1)
Basagran® (bentazon)	MCPA
BROX™-M Herbicide or Bronate® (bromoxynil + MCPA)	Paramount® or QuinStar™ GT(quinclorac)
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)(1)	Gly Star™ Plus or Roundup® Ultra (glyphosate)
Cyclone® (paraquat)	Sencor® (metribuzin)
Dakota® (fenoxaprop-p-ethyl + MCPA)	Sinbar® (terbacil)
Distinct® (diflufenzopyr)	Stinger™ (clorpyralid)
Evik® (ametryn)	Tiller® (fenoxaprop-p-ethyl + 2,4-D + MCPA)(1)
Express® (thifensulfuron + tribenuron-methyl)	Tordon™ (picloram)
Fallow Star™ or Fallowmaster® (glyphosate + dicamba)	Touchdown® (sulfosate)
Finesse® (chlorsulfuron + metsulfuron-methyl)	2,4-D(1)
Glean® (chlorsulfuron)	

(1) Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed the combined total of pounds of a.e. per acre per crop cycle of 2,4-D for the use site being applied to.

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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).
5. 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 Star™ must be diluted with a minimum of 5 parts water to 1 part Range Star™. 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.

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RESTRICTIONS AND LIMITATIONS

- Maximum seasonal use rate:

Crop	Maximum Rate per Acre per Application	Maximum Rate per Acre per Season	Livestock Grazing or Feeding ¹	Aircraft Application
Between Crop Applications	5 1/2 pints	11 pints	Yes	Yes
Pasture, Hay, Silage	5 1/2 pints	8 pints	Yes	Yes
Sugarcane	5 1/2 pints	11 pints	Yes	Yes
Sorghum	1 pint	1 pint	Yes	Yes
Wheat	2 pints	3 1/3 pints	Yes	Yes

¹Refer 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 Star™ 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 Star™ 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 Star™ 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 Star™.
- 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.

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FOOD/FEED CROP-SPECIFIC INFORMATION

PASTURES, RANGELAND AND GRASS (Hay, Silage)

Range Star™ is recommended for use for pasture (including pasture grown for hay), rangeland and grass grown for hay or silage.

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.

PASTURE & RANGELAND RESTRICTIONS:

- Do not apply more than 5 ½ pints per acre per application.
- Rates above 4 pints of Range Star™ per acre are for spot treatments only
- Do not make more than 2 applications per year.
- Minimum spray interval between applications is 30 days.
- If grass is to be cut for hay, Agricultural Use requirements for the Worker Protection Standard are applicable.
- Dry hay and silage - Treated grasses may be harvested for dry hay or silage but do not harvest within 37 days of treatment.

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

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.

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

In newly established hybrid Bermudagrass, Pangolagrass, and stargrasses (*Cynodon* spp.), use 4-8 pints of Range Star™ per acre to control or suppress weeds after planting vegetative propagules (stolens) of hybrid bermudagrasses. In addition to the weeds listed in the ANNUAL and BIENNIAL and PERENNIAL WEEDS tables, this rate of Range Star™ will control or suppress annual sedges, broadleaf signalgrass, crabgrass, and goosegrass. Best results will be obtained if Range Star™ 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.

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

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For pasture renovations, wait 3 weeks per quart per acre of Range Star™ 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.

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

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 Star™ 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 Star™. Do not use surfactants or oils with postemergence applications of Range Star™ on sorghum crops. Do not use Range Star if the potential for sorghum injury is not acceptable.

If sorghum is grown for pasture, hay or silage, refer to the Pasture and Rangeland section of the Food/Feed Crop-Specific Information section of this label for livestock grazing and feeding restrictions.

SORGHUM Tank Mixes:

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®.

SORGHUM RESTRICTIONS:

- Make no more than one postemergence application per crop cycle.
- Do not make more than one post emergenced application per crop cycle.
- Do not permit meat or dairy animals to consume treated crop as fodder or forage for 30 days following application.
- Do not graze or feed treated sorghum forage or silage prior to mature grain stage.
- Do not apply Range Star™ to sorghum grown for seed production.
- Pre-Harvest interval is 30 days

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 1.0 pounds of a.e. per acre per year.

SUGARCANE

Applications of Range Star™ 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

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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 2 pints of Range Star™ per treated acre.

For suppression of listed PERENNIALS, apply 2 – 5 ½ pints of Range Star™ per treated acre.

SUGARCANE Tank Mixes: Range Star™ may be tank mixed with one or more of the following herbicides: Asulox®, Atrazine, Evik®, Sencor®, or Sinbar®.

SUGARCANE RESTRICTIONS:

- Pre-emergent Application: Do not make more than one pre-emergence application per crop cycle.
- Pre-emergent Application: Do not apply more than 5 ½ pints per application.
- Post-emergent Application: Do not make more than one post-emergence application per crop cycle.
- Post-emergent Application: Do not apply more than 5 ½ pints per application.
- Do not harvest cane prior to crop maturity.

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

WHEAT (Fall and Spring-seeded)

If small grains are grown for pasture or hay only, refer to the Pastures, Rangeland and Grass (Hay, Silage) section of this label.

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

EARLY SEASON POST-EMERGENCE APPLICATIONS (Fall and Spring-seeded):

Apply 0.5-1 pint of Range Star™ 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 1/3 pints of Range Star™ per acre may be applied post-emergent 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 Star™ can be used to control weeds that may interfere with harvest of wheat. Apply up to 1 1/3 pints of Range Star™ 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.

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.

WHEAT Tank Mixes

For control of grasses or additional broadleaf weeds, Range Star™ 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
BROX™-M Herbicide or Bronate®	0.75-1.5 pints
BROX™ 2EC Herbicide or Buctril®	1-1.5 pints
Canvas®	0.2-0.4 ounce ¹
Curtail™	2 - 2.67 pints
Dakota®	16 fluid ounces
Express®	0.083-0.167 ounce ¹
Finesse®	0.167-0.33 ounce ¹
Glean®	0.167 ounce
Harmony® Extra	0.167-0.33 ounce ¹
Karmex® ³	0.5-1.5 pounds
2,4-D amine	See Footnote ⁴
Sencor®, (Metribuzin ³)	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

¹Do 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 mix Tiller® if wild oat is the target weed.

³Tank mixes with Karmex® and metribuzin are for use in fall-seeded wheat only.

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WHEAT RESTRICTIONS:

- Postemergence: Make no more than one application per crop cycle.
- Postemergence: Do not apply more than 1 1/3 pints per acre per application.
- Preharvest: Make no more than one application per crop cycle.
- Preharvest: Do not apply more than 1 1/3 pints per acre per application.
- Pre-Harvest interval is 14 days.

⁴ Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not:

- Exceed a combined total of 1.25 pounds of a.e. per acre per crop cycle of 2,4-D for post emergent use.
- Exceed 0.5 pounds of a.e. per acre per crop cycle of 2,4-D for pre-harvest application.
- Exceed a total of 1.75 pounds of a.e. per acre per crop cycle for all uses.

BETWEEN CROP APPLICATIONS, CONSERVATION RESERVE PROGRAMS, GENERAL FARMSTEAD AND FALLOW SYSTEMS (These uses are considered Food/Feed Crops when harvested, grazed or foraged)

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 - 5 1/2 pints of Range Star™ per acre. Refer to the ANNUAL WEEDS and BIENNIAL AND PERENNIAL WEEDS Application Rate and Timing tables to determine the use rates for specific targeted weed species. For best performance, apply Range Star™ 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 artichoke occurs if Range Star™ 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.

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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 – 5 ½ pints of Range Star™ per acre for control of biennial and perennial weeds:

Aim™	Distinct®	Kerb™
Ally®	Fallow Star™	Landmaster® BW
Amber®	Fallowmaster®	Paramount®
Atrazine	Finesse®	Sencor®
Curtail™	Glyphosate	Tordon™ 22K
Cyclone®	Gramoxone® Extra	Touchdown®
		2,4-D ¹

BETWEEN CROP APPLICATION RESTRICTIONS:

- Do not make more than 2 applications per year.
- Do not apply more than 5 ½ pints per acre per application.
- Minimum spray interval between applications is 30 days.
- Plant only labeled crops within 29 days following application.

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

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 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 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.

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CONSERVATION RESERVE PROGRAMS RESTRICTIONS:

- Do not apply more than 5 1/2 pints per acre per application.
- Rates above 4 pints of Range Star™ per acre are for spot treatments only
- Do not make more than 2 applications per year.
- Minimum spray interval between applications is 30 days.
- If grass is to be cut for hay, Agricultural Use requirements for the Worker Protection Standard are applicable.

Consult program rules to determine whether grass or hay may be used. The more restrictive requirements of the program rules or this label must be followed.

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 4.0 pounds of a.e. per acre per year.

FARMSTEAD AND FENCEROW TREATMENT

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	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

To prepare oil and water emulsions, mix in the 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.

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.

Do not exceed 30 gallons of spray solution per treated acre per application. Thirty gallons of spray solution contains 0.75 lb a.e. dicamba and 2.0 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.

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.

FARMSTEAD AND FENCEROW RESTRICTIONS:

- Postemergence (annual & perennial weeds): Do not make more than 2 applications per year.
- Postemergence (annual & perennial weeds): Do not apply more than 5 ½ pints per acre per application.
- Postemergence (annual & perennial weeds): Minimum spray interval between applications is 30 days.
- Postemergence (woody plants): Do not make more than 1 application per year.
- Postemergence (woody plants): Do not apply more than 11 pints per acre per application.

Applications to non-cropland areas are not applicable to treatment of commercial timber or other plants being grown for sale or other commercial use, or for commercial seed production, or for research purposes.

Range Star™ contains 0.36 pounds a.e. of 2,4-D per pint. When tank mixing with products that contain 2,4-D, do not exceed a combined total of 6.0 pounds of a.e. per acre per year.

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.

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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.

CUT SURFACE RESTRICTIONS:

- Do not make more than one cut surface application per year.
- Do not use more than 22 pints per 100 gallons of spray solution.

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

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 Star™ used. Exclude days when ground is frozen.

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Weed Type & Stage	Broadcast rate per Treated Acre Amount
Annual	
Small, actively growing (less than 4 inches)	1.0 – 1.5 pints
Established weed growth (greater than 4 inches)	1.5 – 3.0 pints
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 bolted or flowering	4.0 pints
Perennial	
Suppression or top growth control	2.0 – 4.0 pints
Seasonal Control	4.0 – 5 ½ pints

Add 0.5% v/v of an agriculturally approved surfactant to Range Star™ 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.

TANK MIX TREATMENTS

Range Star™ 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
Chlorsulfuron (Glean®)	0.016 to 0.024
Glyphosate (Gly Star™ Original or Roundup®)	1/4 to 2.0
Metribuzin	1/3 to ¾
Paraquat	1/2 to 1.0

WHEAT PRE-PLANT RESTRICTIONS:

- Do not make more than 2 applications per year.
- Do not apply more than 5 ½ pints per acre per year.
- Minimum spray interval between applications is 30 days.

STORAGE AND DISPOSAL

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.

CONDITIONS OF SALE AND WARRANTY

The DIRECTIONS FOR USE of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and should be followed carefully. However, it is impossible to eliminate all risks inherently associated with use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or the manner of use or application, all of which are beyond the control of ALBAUGH, INC., its Supplemental Distributors, or the Seller. All such risks shall be assumed by the Buyer.

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