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COBRA™ HERBICIDE

Active Ingredient:	lactofen, 1-(carboethoxy)ethyl 5-[2-chloro-4-(trifluoromethyl)phenoxy]-2-nitrobenzoate	23.2%*
Inert Ingredients:		76.8%
		100.0%

* Contains 2 pounds active ingredient per gallon

DANGER KEEP OUT OF REACH OF CHILDREN

Read all Precautionary Statements, Directions for Use, Conditions of Sale, Storage and Disposal Statements, and Environment Hazards Statements before using this product. See the Directions for Use in the attached booklet. It is a violation of Federal Law to use this product in a manner inconsistent with the label.

ACCEPTED DEC 10 1987 748-259

PRECAUTIONARY STATEMENTS

HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Corrosive. Causes skin burns and irreversible eye damage. Harmful if swallowed, inhaled, or absorbed through skin. Do not get in eyes or on skin or clothing. Wear goggles or face shield, coveralls or tightly woven long-sleeved shirt, and rubber gloves when handling. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

This product contains lactofen, which has been determined to cause tumors in laboratory animals (mouse, rat). Risks can be reduced by closely following use directions and precautions, and by wearing the protective clothing specified elsewhere on this label.

Note to Physician: Probable mucosal damage may contraindicate use of gastric lavage.

PRACTICAL TREATMENT

If in eyes, flush with plenty of water for at least 15 minutes. Get medical attention immediately.

If swallowed, DO NOT INDUCE VOMITING. Drink promptly a large quantity of milk, egg whites, gelatin solution, or, if these are not available, large quantities of water. Avoid alcohol. Get medical attention immediately.

If on skin, wash with plenty of soap and water. Get medical attention.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to fish. Do not apply directly to water or wetlands (swamps, bogs, marshes, and potholes). Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring

areas. Do not contaminate water by cleaning of equipment or disposal of waste. Do not apply when weather conditions favor drift from target area.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

Manufactured by:
PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

Emergency Telephone Number:
PPG Industries, Inc.
Natrium, WV
(304) 843-1300

Net Contents One Gallon
EPA Registration No. 748-259
EPA Est. No. 32761-MO-3

DIRECTIONS FOR USE IN SOYBEANS

GENERAL INFORMATION

Cobra™ Herbicide is a selective, broad spectrum herbicide for postemergence control of susceptible broadleaf weeds in soybeans. Cobra™ Herbicide is formulated as an emulsifiable concentrate containing two pounds of active ingredient per gallon.

Cobra™ works primarily through contact action. Good coverage of young, actively growing weeds is essential for maximum weed control. The use of an EPA approved spray adjuvant is required. The addition of a spray adjuvant will increase the effective wetting or contact activity of Cobra™. Refer to the label section on ADJUVANTS AND ADDITIVES for specific recommendations.

When Cobra™ Herbicide is applied at the label-recommended timing, a portion of the spray solution may contact the soil surface. If conditions are favorable for preemergence activity following the application, suppressed germination of small-seeded broadleaf weeds, such as nightshade species, pigweed species, common ragweed, and prickly sida, may be expected for a 2 to 3 week period. The presence of excessive crop or weed foliage at the time of application will reduce the amount of herbicide spray contacting the soil surface and will reduce the level of soil activity.

A temporary crop response should be expected following a postemergence application of Cobra™. Trifoliate soybean leaves which are fully opened at the time of application will show some speckling, bronzing, or leaf burn. Trifoliate soybean leaves which have emerged but are unopened at the time of application and the first newly emerging trifoliate leaf following application may appear cupped at the tip and/or crinkled along the edges of the leaf.

Soybeans are resistant to Cobra™ Herbicide and quickly outgrow all initial herbicide effects. All growth following the initial crop response will be normal. When good growing conditions follow application, new growth will be rapid and vigorous. When Cobra™ Herbicide is used as directed, soybean **yields will not be affected.**

TIMING

For best results, Cobra™ Herbicide should be applied to small, actively growing weeds that are not larger than indicated in Table 1. of this label. Normally this occurs 14 to 21 days after planting. For soybeans, the ideal time of application is at the first or second trifoliate leaf stage. Avoid applications of Cobra™ Herbicide when the soybean cotyledons are fully exposed and open but prior to the first trifoliate leaf. Applications made at this time may result in excessive crop response. Soybeans at or larger than the third

trifoliate stage may interfere with the spray pattern and reduce coverage of the weed leaves. Properly timed treatments will provide consistent performance on labeled weeds.

Under conditions of normal weed and soybean growth, Cobra™ may be applied up to 30 minutes before rainfall without reduced effectiveness.

Do not apply Cobra™ Herbicide when the soybeans or the weeds are under stress. Applying Cobra™ Herbicide under conditions that do not promote active weed growth will reduce herbicide effectiveness. These conditions include **drought, excessive water, extremes in temperature, and low humidity.** For example, nighttime temperatures below 50°F or a daytime temperature falling below 65°F will slow the rate of weed growth and may reduce herbicide activity. Daytime temperatures which exceed 95°F may increase the intensity of the crop response. High daytime temperatures together with low soil moisture may cause weeds to "harden off" and become less susceptible to herbicidal action. In general, low moisture conditions in the top 2-4 inches of soil may indicate that weeds are under stress, are not actively growing, and are less susceptible to herbicide activity. An increase in crop response along with a reduction in weed control may occur when Cobra™ Herbicide is applied to soybean fields which have been under a saturated soil or flooded moisture conditions.

Conditions such as those described above which precede or immediately follow application may adversely affect the performance of Cobra™ Herbicide. Weeds under stress tend to "harden off" and become less susceptible to herbicidal action, while crops under stress frequently exhibit less tolerance to herbicidal application.

Do not cultivate five days prior to application. Do not cultivate or otherwise generate excessive dust while spraying. Excessively dusty conditions may interfere with the coverage of the weed leaf surface by the spray solution. A timely cultivation approximately one week after application will assist in weed control.

DRILLED/SOLID-SEEDED SOYBEANS

Under these cropping systems, a dense crop canopy develops more rapidly than conventional row spacings. The crop canopy may restrict penetration of the herbicide spray pattern and reduce the coverage of the weed foliage. For drilled or solid-seeded soybeans, applications should be made when soybeans are at the first trifoliate leaf stage. Delaying application beyond the first trifoliate leaf stage may result in reduced coverage of the weed foliage due to interference of the crop canopy with the spray pattern. This may result in unsatisfactory weed control.

For improved weed coverage and canopy penetration in drilled or solid-seeded soybean, the higher range of volume and pressure is required. See the GROUND APPLICATIONS section of this label for application information.

GROUND APPLICATION

Cobra™ Herbicide can be applied by ground equipment using standard commercial sprayers equipped with flat fan or hollow cone nozzle tips which are designed to deliver a fine particle spray pattern. Cobra™ Herbicide is a contact herbicide. Special attention should be given to preparing and operating the sprayer to assure proper coverage of the weed leaf surface.

Use Cobra™ Herbicide at a rate of **12.5 fluid oz.** per acre on a broadcast basis in **20-30 gallons** of water per acre and a spray pressure of **40-60 PSI** measured at the boom. Apply Cobra™ Herbicide using a flat fan or hollow cone tip designed to deliver the desired pressure and spray volume. Avoid use of tips larger than 8006 (or equivalent). Tips larger than 8006 frequently do not break up spray patterns into small enough droplets to provide adequate weed coverage for foliar herbicides. Boom height, ground speed, and pressure recommendations should not exceed those recommended by the spray nozzle manufacturer for the type and size of tip being used. Improper use of the selected spray tip will adversely affect the spray pattern, prevent proper coverage of weed leaf surface, and reduce weed control. Refer to the manufacturer's spray chart for nozzle selection and operating information.

For improved coverage and penetration of dense weed foliage the higher range of recommended volume and pressure is required.

REFER TO THE AERIAL APPLICATION SECTION FOR SPECIFIC INSTRUCTIONS FOR AERIAL APPLICATION.

FIELD CALIBRATE YOUR SPRAYER: Improper calibration will adversely affect spray pattern and reduce weed control. Delivery rates shown in equipment catalogs may not accurately reflect your actual delivery rate. When calibrating, spray pressure should be measured at the spray boom to assure accurate delivery rates. Refer to the manufacturer's chart for recommended spray boom height, spray pressure, and ground speed for the nozzle tip you are using. For example, when using an 80° nozzle such as an 8004 flat fan on 20" spacing, the boom height should not be more than 20" above the leaf surface of the target weeds, and the spray pressure should be 40 PSI at the boom. Under those conditions, a ground speed of 6 mph will deliver a spray volume of 20 gallons per acre. The maximum recommended ground speed for conventional ground application equipment should not exceed 8 MPH, as coverage of weed foliage may be adversely affected.

DO NOT USE THE FOLLOWING DELIVERY SYSTEMS TO APPLY COBRA™ HERBICIDE:

1-Flood Nozzles
2-Control Droplet Applicators (CDA)
3-Flat Fan Nozzles Larger than 8006
4-Spray rigs which utilize wheel driven pumps.

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ADJUVANTS AND ADDITIVES

Use of an EPA approved spray adjuvant is required. Control of weeds at or near the maximum growth stage indicated in Table 1. of this label is enhanced by the addition of an adjuvant to the spray mixture. The addition of a spray adjuvant will increase the effective wetting or contact activity of Cobra™. Use an EPA approved petroleum-based crop oil concentrate, 28% N liquid fertilizers, or non-ionic surfactant. Mixing and compatibility qualities should be verified by a jar test. The addition of a spray adjuvant may intensify the initial crop response.

Crop Oil Concentrate: Crop oil concentrate is the preferred adjuvant for Cobra™ Herbicide. Use of a crop oil concentrate has consistently enhanced weed control over a wide spectrum of application conditions. Higher levels of crop response are also generally observed with the use of a crop oil concentrate. Apply the following rate of crop oil concentrate per acre as indicated below:

In the states of: VA, NC, SC, FL, GA, AL, PA, MD, DL - Use: 1/4 to 1/2 pint/A

In all other states - Use: 1/2 to 1 pint/A

The rate of crop oil concentrate will depend on the environmental conditions preceding the application and the weed species and weed size at the time of application. If environmental conditions are good and weeds are growing vigorously, use of the low rate of crop oil concentrate is recommended. The higher rate is required when the weeds are under environmental stress such as low temperature, low humidity, or low soil moisture. Use of the highest recommended rate of crop oil concentrate under these conditions will aid in achieving optimum weed control. Refer to the label section on TIMING for additional information on conditions that may affect the performance of Cobra™ Herbicide.

IMPORTANT: For aerial applications, the addition of 1 pint per acre of crop oil concentrate is required. Refer to the AERIAL APPLICATION section for specific recommendations for aerial applications.

28% N Liquid Fertilizer: A 28% N liquid fertilizer may be substituted for crop oil concentrate in the spray solution when environmental conditions are good and weeds are growing vigorously. The addition of 1 gallon per acre of 28% N liquid fertilizer to the spray solution will aid in achieving optimum weed control. Refer to the label section on TIMING for additional information on environmental conditions that may affect Cobra™ Herbicide performance.

Surfactant: When environmental conditions are good and weeds are growing vigorously, the addition of an EPA approved non-ionic surfactant at the rate of 2 pints per 100 gallons of spray solution will improve the wetting and contact activity of Cobra™ Herbicide.

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BAND APPLICATION

Row banding equipment should be adjusted to provide maximum coverage of weeds in the row. A minimum of two nozzles per row is required to provide optimum coverage of the weed foliage. Reduce the spray gallonage in proportion to the area actually treated. Calculate the amount to be applied per acre as follows:

Band Width in Inches / Row Width in Inches	X	Rate/Acre for Broadcast Treatment	=	Amount Per Acre Needed for Band Treatment

Band Width in Inches / Row Width in Inches	X	Gallonage for Broadcast Treatment	=	Gallonage Per Acre Needed for Band Treatment

DO NOT make band applications while cultivating or otherwise create excessive dust while spraying. Excessively dusty conditions may interfere with proper coverage of the weed leaf surface, thereby reducing contact activity.

SPRA-COUPE ®

Applications of Cobra™ Herbicide using a "Spra-Coupe" require a minimum of 10 gallons of spray solution per acre. Applications at less than 10 gallons per acre will provide inconsistent weed control. The spray pressure at the boom should be between 60-90 PSI. Height of the spray boom should be adjusted so as not to exceed the manufacturer's recommendation for the spray nozzle being used, and to insure proper coverage of the weed foliage. Maximum speed of operation should not exceed 10 MPH as spray coverage of weed foliage may be adversely affected.

Crop oil concentrate is required at the rate of 1 pint per acre to achieve optimum control with "Spra-Coupe" applications.

AERIAL APPLICATION

To obtain satisfactory weed control with aerial applications, uniform coverage must be obtained. Do not spray when drift is possible or when wind velocity is more than 5 mph. Avoid spraying Cobra™ within 200 feet of adjacent sensitive crops or dwellings. Drift to adjacent ornamentals or sensitive non-target crops such as cotton, tobacco, or sorghum must be avoided. To obtain satisfactory application and minimize drift, the following directions must be observed:

Volume and Pressure: Use Cobra™ Herbicide at **12.5 fluid oz.** per acre

in **5 to 10 gallons** per acre water and a maximum spray pressure of **40 PSI**. Applications at less than 5 gallons per acre will provide inconsistent control. The higher gallonage applications generally afford more consistent weed control.

Nozzle and Nozzle Orientation: Use nozzles which produce flat or hollow cone spray patterns. Use non-drip type nozzles such as diaphragm-type nozzles to avoid unwanted discharge of spray solution. The nozzles must be directed toward the rear of the aircraft, downward at an angle between straight down and straight back. The nozzles must be located so to avoid the positions close to the ends of the wings or rotors; do not place nozzles on the outer 25% of wings or rotors.

CROP OIL CONCENTRATE: With aerial applications, the use of crop oil concentrate at the rate of **1 pint per acre** in the spray solution is **required. Do not use surfactants.**

IMPORTANT: Use of less than 1 pint of crop oil concentrate per acre or use of any adjuvant other than crop oil concentrate will result in unsatisfactory weed control.

MIXING

Add about one-half of the required amount of water to the spray tank and begin agitation. Add the required amount of Cobra™ Herbicide and mix thoroughly. Then add the correct amount of adjuvant and the remaining water. Maintain agitation during filling and spraying to insure a uniform spray mixture.

WEEDS CONTROLLED BY COBRA™

Identify your weed species as early as possible and determine the stage of growth by counting the true leaves. Ignore the cotyledon (seed leaves) when you count. The best time for determining weed species and size is generally 7 to 10 days after planting. Use Table 1. of this label to determine the maximum weed leaf stage at which you must apply Cobra™ for effective weed control of the species desired. Applications made at weed leaf stages earlier than indicated in Table 1. will contribute to optimum weed control. Best control is achieved when Cobra™ Herbicide is applied to small, actively growing weed seedlings.

Table 1. WEEDS CONTROLLED BY COBRA™

Common Name	Weed Growth Stages 12.5 fl. oz. per acre Maximum Leaf Stages
Balloonvine	4
Beggarticks, devils	6
Bristly Starbur	4
Buffalobur	4
Burcucumber	4
Carpetweed	8 in. diameter
Cocklebur, common	6
Copperleafs	
Hophornbeam	6
Virginia	4
Devils Claw	4
Eclipta	6
Florida Beggarweed	2
Florida pusley	6
Groundcherry	
Cutleaf	6
Lanceleaf	6
Hairy Galinsoga	4
Hemp sesbania	6
Jimsonweed	4
Mexicanweed	4
Morningglories	
Cypressvine	4
* Entireleaf	2
* Ivyleaf	2
* Palmleaf	4
* Pitted	4
* Purple moonflower	4
* Smallflower	4
* Tall	4
Mustard, wild	6
Nightshades	
Black	6
Eastern black	6
Hairy	4
Pigweeds	
Palmer amaranth	6
Prostrate	6
Redroot	6
Smooth	6
Spiny amaranth	6
Poorjoe	6
Prickly sida (Teaweed)	4
Punctureweed	1.5 in. diameter

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	Purslane, common	8 in. diameter
	Ragweeds	
	Common	6
	Giant	4
	Showy crotalaria	4
	Smell melon	6
	Spurges	
	Prostrate	1 in. diameter
	Spotted	4
	Tall waterhemp	4
	Tropic croton	4
*	Velvetleaf	4
	Venice mallow	4
	Wild poinsettia	4
*	Wild sunflower	2
	Witchweed	6-8 in. prior to bloom
	Woolly croton	4

* See Special Use Directions for best control of these weeds.

SPECIAL USE DIRECTIONS FOR CONTROL OF SPECIFIC WEEDS

MORNINGGLORY SPECIES
VELVETLEAF
WILD SUNFLOWER

Control of the weeds listed above requires special use directions to achieve optimum Cobra™ activity. For the best control of these weed species, it is required that the applications are made to weeds within the recommended label size indicated in Table 1. These weeds must be actively growing under conditions of good soil moisture and high relative humidity, and good coverage of the weed leave surface must be achieved. Use of the higher spray gallonage and spray pressure is required for best results. Crop oil concentrate is required at the rate of **1 pint per acre.** Control of these species may be inconsistent when the weeds are under environmental stress such as dry conditions, cool temperatures, or extremely wet soil.

Table 2. WEEDS SUPPRESSED BY COBRA™ HERBICIDE

	Weed Growth Stages
	12.5 fl. oz. per acre
Common Name	Maximum Leaf Stages
*Coffee senna	2
Pennsylvania smartweed	4
*Sicklepod	2
Spurred anoda	2

* Suppression may be improved when Cobra™ Herbicide is applied at 12.5 fl. oz. per acre following a preemergence application of Lasso or Dual at the recommended rates.

Only suppression of growth and not acceptable commercial control may be expected when these weeds are treated with Cobra™ Herbicide. The degree of suppression will depend on the weed size and environmental conditions at the time of application. Best results are obtained when soil conditions are favorable for maximum growth and treatments are made during high temperature and high humidity weather. Treatment of these species at or before the maximum growth stage is essential. The use of a crop oil concentrate at one pint per acre is required for suppression of these weeds. Cultivation one week to ten days after treatment will usually aid in obtaining satisfactory suppression of these weeds.

Table 3. PERENNIAL WEEDS SUPPRESSED BY COBRA™ HERBICIDE

	Weed Growth Stages
	12.5 fl. oz. per acre
Common Name	Maximum Leaf Stages
Bigroot morningglory (Wild Sweet Potato)	up to 12 inches
Canada thistle	up to 12 inches
Milkweeds	
Climbing	up to 12 inches
Common	up to 12 inches
Redvine	up to 12 inches
Swamp smartweed	up to 12 inches
Trumpetcreeper	up to 12 inches

Cobra™ Herbicide applied at 12.5 fl. oz. per acre with one pint per acre crop oil concentrate will burn back existing above-ground vegetation and may retard the growth of new foliage.

PRECAUTIONS

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

Apply Cobra™ Herbicide once per growing season, not later than 90 days before harvest.

Do not graze animals on green forage or stubble. Do not utilize hay or straw for animal feed or bedding.

STORAGE AND DISPOSAL

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

Container Disposal - Triple-rinse container. Puncture and dispose of in an EPA approved sanitary landfill, by incineration or, if allowed by state and local authorities, by burning. If burned, stay out of smoke. Do not reuse container.

WORKER PROTECTION AND RE-ENTRY

Do not treat areas while unprotected humans or domestic animals are present in the treatment area. Do no allow entry into treated areas without protective clothing until the spray has dried.

CONDITIONS OF SALE

The statements and methods presented about the products mentioned are based upon the best available information and practices known to PPG Industries at the present time, but are not representations or warranties of performance, results or comprehensiveness of such data. PPG Industries, Inc. warrants that the products mentioned herein conform to their chemical description and are reasonably fit for the purposes stated on the label when used in accordance with the label directions under normal conditions of use, or conditions of use reasonably foreseeable to the seller.

The products mentioned herein, if not used in accordance with directions, can be hazardous. PPG Industries, Inc. recommends that anyone using and/or handling the products mentioned herein, before using them thoroughly read and understand the specific Directions for Use and the precautions appearing on the product label.

The products mentioned herein, as with all potentially hazardous materials, must be kept out of reach of children.

APPENDIX

The following are scientific names for the weeds listed on this label:

Common Name	Scientific Name
Balloonvine	Cardiospermum halicacabum
Beggarticks, devils	Bidens frondosa
Bigroot morningglory	Ipomoea pandurata
Bristly starbur	Acanthospermum hispidum
Buffalobur	Solanum rostratum
Burcucumber	Sicyos angulatus
Canada thistle	Cirsium arvense
Carpetweed	Mollugo verticillata
Cocklebur, common	Xanthium strumarium
Coffee senna	Cassia occidentalis
Copperleafs	
Hophornbeam	Acalypha ostryifolia
Virginia	Acalypha virginica
Devils claw	Proboscidea louisianica
Eclipta	Eclipta prostrata
Florida beggarweed	Desmodium tortuosum
Florida pusley	Richardia scabra
Groundcherry	
Cutleaf	Physalis angulata
Lanceleaf	Physalis lanceifolia
Hairy galinsoga	Galinsoga ciliata
Hemp sesbania	Sesbania exalta
Jimsonweed	Datura stramonium
Mexicanweed	Caperonia castaniifolia
Milkweeds	
Climbing	Sarcostemma cynanchoides
Common	Asclepias syriaca
Morningglories	
Cypressvine	Ipomoea quamoclit
Entireleaf	Ipomoea hederacea var. integriuscula
Ivyleaf	Ipomoea hederacea
Palmleaf	Ipomoea wrightii
Pitted	Ipomoea lacunosa
Purple moonflower	Piomoea turbinata
Smallflower	Jacquemontia tamnifolia
Tall	Ipomoea purpurea
Mustard, wild	Sinapsis arvense
Nightshades	
Black	Solanum nigrum
Eastern black	Solanum pylcanthum
Hairy	Solanum sarrachoides
Pennsylvania smartweed	Polygonum pensylvanicum

Pigweeds	
Palmer amaranth	Amaranthus palmeri
Prostrate	Amaranthus blitoides
Redroot	Amaranthus retroflexus
Smooth	Amaranthus hybridus
Spiny amaranth	Amaranthus spinosus
Poorjoe	Diodia teres
Prickly sida (Teaweed)	Sida spinosa
Puncturevine	Tribulus terrestris
Purslane, common	Portulaca oleracea
Ragweeds	
Common	Ambrosia artemisiifolia
Giant	Ambrosia trifida
Redvine	Brunnichia ovata
Sicklepod	Cassia obtusifolia
Showy crotalaria	Crotalaria spectabilis
Smell melon	Cucumis melo
Spurges	
Prostrate	Euphorbia humistrata
Spotted	Euphorbia maculata
Spurred anoda	Anoda cristata
Swamp smartweed	Polygonum coccineum
Tall waterhemp	Amaranthus tuberculatus
Tropic croton	Croton glandulosa
Trumpetcreeper	Campsis radicans
Velvetleaf	Abutilon theophrasti
Venic mallow	Hibiscus trionum
Wild poinsettia	Euphorbia heterophylla
Wild sunflower	Helianthus annuus
Witchweed	Striga asiatica
Woolly croton	Croton capitatus