

PM 23 100-731

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JUN 17 1992

Karen Stumpf
Senior Regulatory Manager
CIBA-CEIGY Corporation
Agricultural Division
P.O. Box 18300
Greensboro, NC 27419

Dear Ms. Stumpf:

Subject: Sicep 4.5L Herbicide
EPA Reg. No. 100-500
Sicep Herbicide
EPA Reg. No. 100-645
Sicep Lite Herbicide
EPA Reg. No. 100-731
RE: Amended Labeling (Risk Reduction Measures)
Your Submissions Dated June 7, 1992

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, are acceptable subject to the comments listed below. Stamped labels are enclosed for your records. Five copies of each of the finished labels must be submitted prior to releasing the products for shipment.

On all of the above mentioned product labels, please add a active ingredient lbs. to gal. conversion chart or statement to an appropriate section of the label. The statement may read as follows: "For purposes of calculating total atrazine active ingredient applied, (insert name of product) contains (insert lbs. of atrazine) ai per gal (insert lbs. per quart).

Sincerely yours,

BEST AVAILABLE COPY

Robert J. Taylor
Product Manager (25)
Fungicide-Herbicide Branch
Registration Division (47505c)

CONCURRENCES

SYMBOL	H7208C						
SURNAME	Morrill						
DATE	6/17/92						

Bulk/Farm-Pak/Field-Pak Booklet

RESTRICTED USE PESTICIDE
(GROUND AND SURFACE WATER CONCERNS)

FOR RETAIL SALE TO AND USE ONLY BY CERTIFIED APPLICATORS OR PERSONS UNDER THEIR DIRECT SUPERVISION AND ONLY FOR THOSE USES COVERED BY THE CERTIFIED APPLICATOR'S CERTIFICATION.

THIS PRODUCT IS A RESTRICTED-USE HERBICIDE DUE TO GROUND AND SURFACE WATER CONCERNS. USERS MUST READ AND FOLLOW ALL PRECAUTIONARY STATEMENTS AND INSTRUCTIONS FOR USE IN ORDER TO MINIMIZE POTENTIAL FOR ATRAZINE TO REACH GROUND AND SURFACE WATER.

Bicep Lite™

Herbicide

For weed control in corn and grain or forage sorghum

ACCEPTED
with COMMENTS
In EPA Label Filed:

Active Ingredients:

Atrazine: 2-chloro-4-ethylamino-6-isopropylamino-s-triazine	17.4%
Atrazine related compounds	0.9%
Metolachlor: 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl) acetamide	36.6%
Inert Ingredients:	45.1%
Total:	100.0%

Product is a restricted use herbicide, it is not for use on or near water. Act as a restricted use herbicide. EPA Reg. No. 100-731

KEEP OUT OF REACH OF CHILDREN.

WARNING/AVISO

PRECAUCIÓN AL USUARIO: Si usted no lee inglés, no use este producto hasta que la etiqueta haya sido explicado ampliamente.

See additional precautionary statements and directions for use inside booklet.

EPA Reg. No. 100-731

Bicep Lite™ trademark of CIBA-GEIGY Corporation
U.S. Patent 3,937,730

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CGA

CIBA-GEIGY

[GANNONC.LABELB]BICEP-LITE-F40 - 5/20/92

DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

IMPORTANT: Read the entire Directions for Use and the Conditions of Sale and Warranty before using this product. If terms are not acceptable, return the unopened product container at once.

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 CIBA-GEIGY or the Seller. All such risks shall be assumed by the Buyer.

CIBA-GEIGY warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the Directions for Use subject to the inherent risks referred to above. CIBA-GEIGY makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall CIBA-GEIGY or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product. CIBA-GEIGY and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing Conditions of Sale and Warranty, which may be varied only by agreement in writing signed by a duly authorized representative of CIBA-GEIGY.

DIRECTIONS FOR USE

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

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN POOR WEED CONTROL, CROP INJURY, OR ILLEGAL RESIDUES.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons, except those knowingly involved in the application. The area being treated must be vacated by unprotected persons.

Reentry Statement

Do not enter treated areas without protective clothing until sprays have dried.

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. Oral warnings must be given which inform workers of areas or fields that may not be entered without specific protective clothing until sprays have dried, and appropriate actions to take in case of accidental exposure as described under Precautionary Statements on this label. When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information: "WARNING. Area treated with Bicep Lite on (date of application). Do not enter without appropriate protective clothing until sprays have dried. In case of accidental exposure, flush eyes or skin with plenty of water. Call a physician if irritation persists. Remove and wash contaminated clothing before reuse."

General Information

Bicep Lite is a selective herbicide recommended as an early preplant, preplant surface-applied, preplant incorporated, or preemergence treatment for control of most annual grasses and broadleaf weeds in corn and grain or forage sorghum provided the sorghum seed has been properly treated by the seed company with Concep®. This product may be tank mixed with Banvel®, Bladex® (4L, 80W, 90DF), Dual® formulations, Lorox® or equivalent, or Princep® 4L (80W or Caliber 90®) for weed control in conventional tillage corn. This product may also be tank mixed with either Gramoxone® Extra or Roundup® alone or in combination with Bladex, Dual or Princep, in minimum-tillage or no-tillage corn, or tank mixed with either Gramoxone Extra or Roundup, in minimum-tillage or no-tillage sorghum.

Following many years of continuous use of atrazine (one of the ingredients in Bicep Lite), and products chemically related to atrazine, biotypes of some of the weeds listed on this label which are controlled by the atrazine component have been reported to develop resistance to this and chemically related herbicides. Where this is known or suspected and weeds controlled by this product are expected to be present along with resistant biotypes, we recommend the use of Bicep Lite in combination or in sequence with registered herbicides which do not contain triazines. Consult with your State Agricultural Extension Service for specific recommendations.

Precautions: 1) If sorghum seed is not properly pretreated with Concep, Bicep Lite will severely injure the crop. 2) Injury may occur to corn or sorghum following the use of Bicep Lite under abnormally high soil moisture conditions during early development of the crop.

Bicep Lite alone or in tank mixture with Banvel, Bladex, Dual, or Princep may be applied early preplant, preplant incorporated, preplant surface, or preemergence on corn in water or fluid fertilizer. Bicep Lite may be applied in tank mix combination with Gramoxone Extra or Roundup with or without the above herbicides early preplant, preplant surface or preemergence to corn. Bicep Lite alone may also be applied on sorghum early preplant, preplant incorporated, preplant surface or preemergence in water or in fluid fertilizer.

Bicep Lite may be applied in water by aircraft. Applications in fluid fertilizer should be only by ground equipment.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result.

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

Dry weather following preemergence application of Bicep Lite or a tank mixture may reduce effectiveness. Cultivate if weeds develop in conventional tillage corn or sorghum.

Observe all precautions and limitations on the label of each product used in tank mixtures.

Thoroughly clean sprayer or other application device before using. Dispose of cleaning solution in a responsible manner. Do not use a sprayer or applicator contaminated with other materials, or crop damage or sprayer clogging of the application device may occur.

Mixing Instructions

Thoroughly recirculate containers and bulk tanks before using. Bicep Lite is a liquid that may be mixed with water or fluid fertilizer and applied as a spray. Bicep Lite may also be sprayed onto dry bulk granular fertilizer and applied with the granular fertilizer.

Dry Bulk Granular Fertilizers

Many dry bulk granular fertilizers may be impregnated or coated with Bicep Lite and used to control weeds in corn or Concept-treated sorghum.

When applying Bicep Lite with dry bulk granular fertilizers, follow all directions for use and precautions on the Bicep Lite label regarding target crops, rates per acre, soil texture, application methods, and rotational crops.

All individual state regulations relating to dry bulk granular fertilizer blending, registration, labeling, and application are the responsibility of the individual and/or company selling the herbicide/fertilizer mixture.

Prepare the herbicide/fertilizer mixture by using any closed drum, belt, ribbon, or other commonly used dry bulk fertilizer blender. Nozzles used to spray Bicep Lite onto the fertilizer must be placed to provide uniform spray coverage. Care should be taken to aim the spray onto the fertilizer only, avoiding the walls of the blender.

If the herbicide/fertilizer mixture is too wet, add a highly absorptive material, such as Agsorb® or similar granular clay materials, to obtain a dry free-flowing mixture. Absorptive materials should be added only after the herbicide has been thoroughly blended into the fertilizer mixture. Best application results will be obtained by using a granule of 6/30 particle size or of a size similar to that of the fertilizer material being used. Generally, less than 2% by weight of absorptive

material will be needed. Avoid using more than 5% absorptive material by weight.

Calculate the amount of Bicep Lite to be used by the following:

$$\begin{array}{rcl}
 \underline{2,000} & & \text{qts. of Bicep Lite} \\
 \text{lbs. of} & \times & \text{per acre} \\
 \text{fertilizer} & & = \\
 \text{per acre} & & \text{qts. of Bicep Lite} \\
 & & \text{per ton of} \\
 & & \text{fertilizer}
 \end{array}$$

Pneumatic (Compressed Air) Application: High humidity, high urea concentrations, low fertilizer use rates, and dusty fertilizer may cause fertilizer mixture to build up or plug the distributor head, air tubes, or nozzle deflector plates. To minimize buildup, premix Bicep Lite with a noncombustible/nonflammable mineral seal oil at up to a 1:1 ratio of Bicep Lite to mineral seal oil per acre and spray mixture uniformly onto fertilizer. Mineral seal oil additive may be used either in a fertilizer blender or through direct injection systems. Use only those oils recommended by CIBA-GEIGY, i.e., KERMAC #600™ or CV600 or a similar mineral seal oil. Drying agents should not be used when using oil additives.

Notes: (1) Some separation of the Bicep Lite + mineral seal oil mixture may occur. To assure uniform application, use in-tank agitation to keep the products mixed. (2) Bicep Lite + mineral seal oil mixture may not be mixed with water or fluid fertilizer and applied through a liquid sprayer or crop injury may occur. (3) When impregnating Bicep Lite in a blender before application, a drier mixture can be attained by substituting a drying agent for mineral seal oil. The use of clay granules such as Agsorb is recommended over the other types of absorptive material. (4) Drying agents are not recommended for On-The-Go impregnation equipment.

Precautions: To avoid potential for explosion, (1) Do not impregnate Bicep Lite on ammonium nitrate, potassium nitrate, or sodium nitrate either alone or in blends with other fertilizers. (2) Do not combine Bicep Lite with a single superphosphate (0-20-0) or treble superphosphate (0-46-0). (3) Do not use Bicep Lite on straight limestone, since absorption will not be achieved. Fertilizer blends containing limestone can be impregnated.

Application

Apply 200-700 pounds of the herbicide/fertilizer mixture per acre. For best results, apply the mixture uniformly to the soil with properly calibrated equipment immediately after blending. Uniform application of the herbicide/fertilizer mixture is essential in order to prevent possible crop injury or injury to subsequent rotational crops. Non-uniform application may also

result in unsatisfactory weed control. In areas where conventional tillage is practiced, a shallow incorporation of the mixture into the soil is recommended to obtain satisfactory weed control. On fine or medium-textured soils in areas where soil incorporation is not planned, i.e., reduced tillage situations or in some conventional till situations, make applications approximately 30 days before planting to allow moisture to move the herbicide/fertilizer mixture into the soil. On coarse-textured soils, make applications approximately 14 days prior to planting.

Precautions: (1) To help avoid rotational crop injury, make applications as early as possible, since Bicep Lite impregnated onto dry bulk granular fertilizers can be expected to last longer in the soil than when Bicep Lite is applied as a spray in water or fluid fertilizer. (2) To avoid potential crop injury, do not use the herbicide/fertilizer mixture on crops where planting beds are to be formed.

Application in Water or Fluid Fertilizers

Bicep Lite Alone: Fill the spray tank one-half to three-fourths full with water or fluid fertilizer, add the proper amount of Bicep Lite, then add the rest of the water or fluid fertilizer. Provide sufficient agitation during mixing and application to maintain a uniform suspension.

Tank Mixtures: Fill the spray tank one-half to three-fourths full with water or fluid fertilizer, add the proper amount of Bicep Lite, then add Banvel, Lorox or equivalent, or Princep; next add Dual; then add Gramoxone Extra or Roundup, depending on the tank mix combination desired; and finally add the rest of the water or fluid fertilizer. When Bladex is used in the tank mixture, add it before Bicep Lite unless otherwise specified. (See Bladex section under Bicep Lite Combinations - Corn for further mixing instructions.) Provide sufficient agitation during mixing and application to maintain a uniform suspension.

Compatibility Test: Check the compatibility of Bicep Lite and tank mixtures in fluid fertilizer by mixing proportionate quantities in a small container, as described below, before mixing in the spray tank. Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray. Since liquid fertilizers can vary, even within the same analysis, always check compatibility each time before reuse. Be especially careful when using complete suspension or fluid fertilizers as serious compatibility problems are more apt to occur. Commercial application equipment may improve compatibility in some instances. The following test assumes a spray volume of 25 gals. per acre. For other spray volumes, make appropriate changes in the ingredients. Check compatibility using this procedure:

- 1) Add 1 pint of fertilizer to each of 2 one-quart jars with tight lids.
- 2) To one of the jars add 1/4 tsp. or 1.2 milliliters of a compatibility agent approved for this use, such as Compex® or Unite® (1/4 tsp. is equivalent to 2 pts. per 100 gals. spray). Shake or stir gently to mix.
- 3) To both jars add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, shake or stir gently to thoroughly mix. The appropriate amount of herbicides for this test follows:

Dry herbicides: For each pound to be applied per acre, add 1.4 teaspoons to each jar.

Liquid herbicides: For each pint to be applied per acre add 0.5 teaspoon or 2.5 milliliters to each jar.

- 4) After adding all ingredients, put lids on and tighten, and invert each jar ten times to mix. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, gels, heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the two jars. If either mixture separates, but can be remixed readily, the mixture can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicides(s) in water before addition, or (B) add 1/2 of the compatibility agent to the fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If still incompatible, do not use the mixture.
- 5) After compatibility testing is complete, dispose of any pesticide wastes in accordance with the directions in the Storage and Disposal section at the end of this label.

Application Procedures

Ground Application: Use sprayers that provide accurate and uniform application. Screens in nozzles and in suction and in-line strainers should be no finer than 50-mesh. Use a pump with capacity to (1) maintain 35-40 psi at the nozzles, and (2) provide sufficient agitation in tank to keep mixture in suspension. Unless otherwise specified, use a minimum of 10 gals. of spray mixture per acre. Rinse sprayer thoroughly with clean water immediately after use.

For band applications, calculate amount to be applied per acre as follows:

$$\frac{\text{band width in inches}}{\text{width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

Low Carrier Application (Broadcast Ground Application Only):

Use sprayers such as Melroe Spra-Coupe, Hagie, John Deere Hi-Cycle^T, or Willmar Air Ride[®] that provide accurate and uniform application. Only water may be used as a carrier. Screens in suction and in-line strainers should be 50 mesh. Manufacturers may require that tip screens as fine as 100 mesh be used with some nozzles. Use a pump with capacity to (1) maintain up to 35-40 psi at the nozzles, and (2) provide sufficient agitation in tank to keep mixture in suspension. Use a minimum of 5 gallons of spray mixture per acre. Maximum recommended sprayer speed is 15 mph. Rinse sprayer thoroughly with clean water immediately after each use.

Note: Low pressure nozzles are recommended to reduce drift and increase application accuracy. When using automatic rate controlling devices, care should be taken to spray the material within the rated working pressure and flow ranges of the nozzle selected. Nozzle screens should be used when recommended by the manufacturer. All nozzles should be placed on 20 inch centers, except flooding types which should be placed on 40 inch centers. When Flat Fan type nozzles are used, angles of 80° to 110° are recommended. Always read and follow the manufacturer's directions for optimum setup and performance of their nozzles or tips.

Aerial Application (for Bicep Lite alone): Use aerial application only where broadcast applications are specified. Apply a minimum of 1 gal. of water for each 1 gal. of this product applied per acre, but for rates below 1 gal./A, use in sufficient water to equal 2 gals./A of total spray. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur. In order to assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft., using low drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive nontarget plants, apply Bicep Lite by aircraft at a minimum upwind distance of 400 ft. from sensitive plants.

Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin, and should wash thoroughly before eating and at the end of each day's operation.

Within rate ranges in all tables on this label, use the lower rate on soil relatively coarse-textured or low in organic mat-

ter; use the higher rate on soil relatively fine-textured or high in organic matter and where weed pressure, particularly from grasses, is expected to be especially heavy.

Recommendations are based upon soil textures, which are defined as follows:

- Coarse - Sand, sandy loam, loamy sand
- Medium - Loam, silt loam, silt
- Fine - Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay

Bicep Lite Applied Alone

Weeds Controlled - When applied early preplant, preplant surface-applied, preplant incorporated, or preemergence, Bicep Lite will control or suppress the following weeds:

<u>Weeds Controlled</u>		<u>Weeds Partially Controlled*</u>
barnyardgrass	yellow foxtail	cocklebur
(watergrass)	<u>yellow nutsedge*</u>	morningglory
crabgrass	nightshades	sandbur
crowfootgrass	carpetweed	seedling johnsongrass
fall panicum	common purslane	shattercane
foxtail millet	Florida pusley	sicklepod
giant foxtail	galinsoga	volunteer sorghum
goosegrass	jimsonweed	velvetleaf
green foxtail	lambsquarters	
prairie cupgrass	pigweed	
signalgrass	ragweed	
southwestern cupgrass	smartweed	
witchgrass		

*Control may be improved by following these suggested procedures:

- 1) Thoroughly till moist soil to destroy germinating and emerged weeds. If Bicep Lite is to be applied preplant incorporated, this tillage may be used to incorporate Bicep Lite if uniform 2 inch incorporation is achieved as recommended under Application Procedures.
- 2) Plant crop into moist soil immediately after tillage. If Bicep Lite is to be used preemergence, apply at planting or immediately after planting.
- 3) If available, sprinkler irrigate within 2 days after application. Apply 1/2-1 inch of water. Use lower water

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volume (1/2 inch) on coarse-textured soils and higher volume (1 inch) on finer textured soils.

- 4) If irrigation is not possible and rain does not occur within 2 days after planting and application, weed control may be decreased. Under these conditions, a uniform, shallow cultivation is recommended as soon as weeds emerge.
- 5) For large-seeded broadleaf species, or those which are listed as partially controlled, an application of a postemergence herbicide should be made, if needed, following an application of Bicep Lite.

Application Timings*

*Where there are state/local requirements regarding atrazine use (including lower maximum rates and/or higher set-backs) which are different from the label, the more restrictive/protective requirements must be followed. Certain states may have established rate limitations within specific geographical areas. Consult your state lead pesticide control agency for additional information. It is a violation of this label to deviate from state use regulations.

Corn

Early Preplant: For coarse-textured soils, apply 2.4 qts. of Bicep Lite no earlier than two weeks before planting. For medium and fine-textured soils, Bicep Lite may be applied as a split treatment, by applying 2/3 the recommended rate 30-45 days before planting, followed by the remaining 1/3 rate at planting. See Table 1. Applications made less than 30 days before planting may be either split or single applications. For all soils, Bicep Lite must be tank mixed with a contact herbicide (e.g., Gramoxone Extra or Roundup) if weeds are present at the time of treatment. If large-seeded dicots are present in the field, an application of an appropriate postemergence herbicide may be necessary after corn emergence. Observe the directions for use, precautions, and restrictions of all herbicides used in tank mixtures or as sequentials to Bicep Lite. If the postemergence product contains atrazine, do not exceed the maximum use rates for that soil or location.

On medium- and fine-textured soils following final seed bed preparation in the Blackland and Gulf Coast areas of Texas, an early preplant application of Bicep Lite at 1.8 to 2.2 qts./A may be made 30-45 days before planting. Grass suppression of 2-3 weeks after planting can be expected as a result of this application. Do not incorporate or disturb the soil before planting and avoid moving the soil during the planting operation. A follow-up application of Dual may be needed in fields

with a history of heavy grass pressure. Apply after planting, but before corn and grass weeds emerge.

Notes: (1) If a follow-up application of Dual is needed, do not exceed a total of 2.5 lbs. ai of metolachlor/A including the preplant Bicep Lite application on medium or fine-textured soils. On fine-textured soils with more than 3% organic matter, do not exceed 3 lbs. ai of metolachlor. (2) To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished.

Table 1: Bicep Lite Early Preplant - Corn

Soil Texture	Single Application	Split Applications*	
		30-45 DBP**	At Planting
Coarse Sand, loamy sand, sandy loam	2.4 qts./A	DO NOT APPLY	
Medium Loam, silt loam, silt	2.4 qts./A to 3.0 qts./A	1.6 qts./A to 2.0 qts./A	0.8 qt./A to 1.0 qt./A
Fine Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	3.0 qts./A to 3.75 qts./A	2.0 qts./A to 2.5 qts./A	1.0 qt./A to 1.25 qts./A

*Split applications can be made less than 30 days before planting if desired.

**DBP - Days before planting.

Preplant Surface, Preplant Incorporated or Preemergence: Apply Bicep Lite preplant surface, preplant incorporated, or preemergence using the appropriate rates from Table 2.

Preplant Surface: Apply uniformly to the soil surface with 14 days before planting. Where applications are made to coarse soils more than 7 days before planting, use the rates in Table 1 above.

Preplant Incorporated: Apply to the soil and incorporate into the top 2 inches of the soil within 14 days before planting using a finishing disk harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use preplant incorporated if furrow irrigation is used or when a

period of dry weather after application is expected. If crop is to be planted on beds, apply and incorporate after bed formation.

Preemergence: Apply to the soil surface at planting (behind the planter), or after planting but before weeds or crop emerge.

Table 2: Bicep Lite Preplant Surface, Preplant Incorporated, or Preemergence - Corn

Soil Texture	Broadcast Rate Per Acre	
	Less Than 3% Organic Matter	3% Organic Matter or Greater
Coarse Sand, loamy sand, sandy loam	1.5 qts.	1.8 qts.- 2.4 qts.
Medium Loam, silt loam, silt	1.8 qts.- 2.4 qts.	2.4 qts.
Fine Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	2.4 qts.	2.4-3 qts.*
Muck or peat soils (more than 20% organic matter)	DO NOT USE	

*For yellow nutsedge control on fine-textured soils above 3% organic matter: Apply 3 qts. of Bicep Lite per acre.

NOTES: (1) In the event of escape of annual broadleaf weeds following an early preplant, preplant surface, preplant incorporated, or preemergence treatment of Bicep Lite applied alone or in combination, follow with a postemergence application of an appropriately labeled broadleaf and/or grass weed herbicide, i.e., AAtrex®, Basagran®, Brominal®, Bucril®, Banvel or 2,4-D. If the postemergence treatment includes the herbicide used in the earlier treatment, do not exceed the labeled rate for corn on a given soil texture. (2) Brominal or Bucril may be applied

postemergence alone or in tank mix combination with AAtrex. Do not exceed 1.2 lbs. ai/A of AAtrex in tank mix combination with Brominal or Buctril postemergence. Refer to the Brominal, Buctril and AAtrex labels for specific rates and precautions. (3) If AAtrex is used postemergence following application of Bicep Lite, do not exceed a total of 2.5 lbs. ai/A of atrazine per year.

Sorghum (Sorghum-Seed Treated with Concep)

Early Preplant (Sorghum-Seed Treated with Concep): For minimum-tillage and no-tillage systems only, Bicep Lite may be applied up to 45 days before planting grain sorghum in IL, IA, eastern KS, MO, NE and SD using the rates from Table 3. Use only split applications for treatments made 30 to 45 days before planting with 2/3 the recommended rate applied initially and the remaining 1/3 at planting. Applications made less than 30 days prior to planting may be made as either a split or single application.

If weeds are present at the time of treatment, apply in a tank mixture combination with a contact herbicide (for example, Gramoxone Extra or Roundup). Observe directions for use, precautions and restrictions on the label of the contact herbicide. Under dry conditions, irrigation after application is recommended to move Bicep Lite into the soil.

Note: To the extent possible, do not move treated soil out of the row or move untreated soil to the surface during planting, or weed control will be diminished. Do not use on coarse soils. Do not use on medium soils with less than 1.5% organic matter.

On medium- and fine-textured soils following final seed bed preparation in the Blackland and Gulf Coast areas of Texas, an early preplant application of Bicep Lite at 1.8 to 2.2 qts./A may be made 30-45 days before planting. Grass suppression of 2-3 weeks after planting can be expected as a result of this application. Do not incorporate or disturb the soil before planting and avoid moving the soil during the planting operation. A follow-up application of Dual may be needed in fields with a history of heavy grass pressure. Apply after planting, but before sorghum and grass weeds emerge.

Note: 1) Do not use on soils with a pH greater than 8.0 if grain sorghum is to be planted. 2) If a follow-up application of Dual is needed, do not exceed a total of 2.25 lbs. ai of metolachlor/A, including the early preplant Bicep Lite application on medium-textured soils. On fine-textured soils, do not exceed 2.5 lbs. ai of metolachlor/A.

Table 3: Bicep Lite Early Preplant - Grain or Forage Sorghum
(Seed treated with Concep)

Soil Texture	Organic Matter	Single Application	Split Applications*	
			30-45 DBP**	At Planting
Coarse Sand, loamy sand, sandy loam	any level	DO NOT USE	DO NOT USE	
Medium Loam, silt loam, silt	less than 1.0%	DO NOT USE	DO NOT USE	
	more than 1.0%	2.4 qts./A to 2.7 qts./A	1.6 qts./A to 1.8 qts./A	0.8 qt./A to 0.9 qt./A
Fine Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	less than 1.5%	2.4 qts./A to 2.7 qts./A	1.6 qts./A to 1.8 qts./A	0.8 qt./A to 0.9 qt./A
	more than 1.5%	2.7 qts./A to 3.0 qts./A	1.8 qts./A to 2.0 qts./A	0.9 qt./A to 1.0 qt./A

*Split applications can be made less than 30 days before planting if desired.

**DBP - Days before planting.

Preplant Surface, Preplant Incorporated or Preemergence (Sorghum Seed Treated with Concep): Apply Bicep Lite preplant surface, preplant incorporated or preemergence using the appropriate rates from Table 4.

Preplant Surface: Apply uniformly to the soil surface within 14 days before planting.

Preplant Incorporated: Apply to the soil and incorporate into the top 2 inches of the soil within 14 days prior to planting using a finishing disk harrow, rolling cultivator, or similar implement capable of providing uniform 2-inch incorporation. Use preplant incorporated if furrow irrigation is used or when a period of dry weather after application is expected. If crop is to be planted on beds, apply and incorporate after bed formation.

Preemergence: Apply to the soil surface at planting (behind the planter), or after planting but before weeds or crop emerge.

Table 4: Preplant Surface, Preplant Incorporated, or Preemergence - Grain or Forage Sorghum*
(Seed treated with Concep)

Soil Texture	Organic Matter	Broadcast Rate Per Acre
Coarse Sand, loamy sand, sandy loam	any level	DO NOT USE
Medium and Fine Loam, silt loam, silt, sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	less than 1%	DO NOT USE
	more than 1%	1.8-2.4 qts.

* Do not use in NM or TX except in the Texas Panhandle, Gulf Coast and Blacklands areas. Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

Precautions: To avoid possible crop injury, (1) Do not apply Bicep Lite on highly alkaline soils (pH greater than 8.0) or on eroded areas where calcareous subsoils are exposed. (2) Do not apply Bicep Lite when sorghum is planted in deep furrows because heavy rains following application can cause excessive concentrations of herbicide in the furrow. (3) Do not apply to sorghum grown under dry mulch tillage. (4) Injury may occur if both Bicep Lite applied early preplant, preplant surface, preplant incorporated, or preemergence and an at-planting systemic insecticide applied in-furrow are used. (5) In addition, sorghum growing under stress caused by minor element deficiency may be injured by Bicep Lite.

Rotational Crops: (1) If treated crop is lost due to poor germination, hail, flood, insects, etc., corn may be replanted immediately or sorghum may be replanted immediately provided the seed has been properly treated with Concep. Do not make a second broadcast application. If the original application was banded and the second crop is planted in the untreated row middles, a second banded treatment may be applied. (2) Corn, sorghum, soybeans, cotton, or peanuts may be planted the spring following treatment. Do not graze or feed forage or fodder from cotton to livestock or illegal residues may result. (3) Injury may occur to soybeans planted the year following application on soils having a calcareous surface layer. (4) In eastern parts of the Dakotas, KS, western MN and NE, do not rotate to soybeans if the rate applied to corn or sorghum was more than 2.0 lbs. ai of atrazine or equivalent band application rate, or soybean injury may occur. (5) If applied after June 10, do not rotate with crops other than corn or sorghum the next year, or crop injury may occur. (6) In the High Plains and Intermountain areas of the West where rainfall is sparse and erratic or where irrigation is required, use only when corn or sorghum is to follow corn or sorghum, or a crop of untreated corn or sorghum is to precede other rotational crops. (7) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small seeded legumes the year following application, or injury may occur. (8) All other crops may be planted 18 months after application.

Bicep Lite Combinations - Corn

Tank Mixture with Dual, Princep or Bladex - Conventional Tillage

Dual: Add up to 1/2 pt. of Dual per acre to the rate of Bicep Lite recommended in Table 1 when heavy infestations of yellow nutsedge, sandbur, or seedling johnsongrass are expected.

Princep (4L, 80W, or Caliber 90): Add up to 1 qt. of Princep 4L (1.25 lbs. 80W or 1.1 lbs. Caliber 90) per acre to the rate of Bicep Lite recommended in Table 1 in the northeastern U.S. where heavy infestations of crabgrass or fall panicum are expected.

Bladex (4L, 80W, or 90DF): Add up to 2 qts. of Bladex 4L (2.5 lbs. 80W or 2.2 lbs. 90DF) per acre. When Bladex is added, the rate of Bicep Lite suggested in Table 1 should be reduced by not more than 25% for a given soil texture in the Clarion-Nicollet-Webster soil association in northern Iowa and southern Minnesota, or in other areas where soybean rotational concerns exist.

Note: Check the compatibility of Bicep Lite tank mixtures with Bladex before mixing in spray tank by using the procedure described under Application in Water or Fluid Fertilizers. Always use Unite (or an equivalent compatibility agent) at

2 pts./100 gals. when using Bladex 80W or Bladex 90DF in tank mixtures with Bicep Lite. Compatibility testing is especially critical when using Bladex 80W or Bladex 90DF combinations. Always add Bladex to the spray tank before Bicep Lite, regardless of which Bladex formulation is used.

Tank Mixtures of Bicep Lite Alone or Bicep Lite plus Bladex, Dual, or Princep, with Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra or Roundup should be tank mixed with Bicep Lite alone or with Bicep Lite plus Bladex, Dual, or Princep. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Bicep Lite portion of the tank mixture provides preemergence control of the weeds listed on this label in the Bicep Lite Alone section for corn. The addition of Bladex, Dual, or Princep offers the advantage indicated for each under Conventional Tillage above.

Application: Apply before, during, or after planting but before corn emerges, at the appropriate rate in Table 5. Two qts. of Bladex 4L (2.5 lbs. 80W or 2.2 lbs. 90DF), or 1/2 pt. of Dual, or 1 qt. of Princep 4L (1.25 lbs. 80W or 1.1 lbs. Caliber 90) per acre may be added to the rate of Bicep Lite recommended in Table 5. Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5 or 2.5-3.0 pts. per acre to 1-3 inches, 3-6 inches, or 6 inch tall weeds, respectively. Apply surfactant at 1 or 2 pts. per 100 gals. of spray mixture with 75% or greater or 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Roundup: 1.5 qts. per acre for control of existing annual weeds, or 2-4 qts. per acre for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in 20-60 gals. of water per acre with conventional spray equipment.

Tank Mixtures of Bicep Lite Alone or Bicep Lite plus Bladex, with 2,4-D or 2,4-D plus Banvel for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where corn is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, Bicep Lite may be applied in combination with Bladex. When used as directed, the Bicep Lite portion of the tank mixture provides preemergence control of the weeds listed on this label in the Bicep Lite Alone section for corn. The addition of Bladex offers the advantage indicated for each under Conventional Tillage above.

Application: Apply Bicep Lite with Bladex before, during, or after planting but before corn emerges, at the appropriate rate of Bicep Lite in Table 5 for the burndown of small existing annual weeds. Up to 2 qts. of Bladex 4L (2.5 lbs. 80W or 2.2 lbs. 90DF) per acre may be added to the rate of Bicep Lite recommended in Table 5.

Where heavy crop residues exist, add an appropriately labeled 2,4-D amine or low volatile ester to the spray tank last and apply in a minimum of 25 gals. of carrier/A.

As carriers, nitrogen solutions and complete liquid fertilizers, applied before corn emergence, enhance burndown of existing weeds, and therefore are recommended instead of water. Add X-77® surfactant at 1.0-2.0 qts./100 gals. of diluted spray, or another surfactant cleared for use on growing crops at its recommended rate. Apply before weeds exceed 3 inches in height. If alfalfa is present, add Banvel to the spray mixture at 0.33-0.5 pt./A and apply before alfalfa exceeds 6 inches in height.

For fields with existing sod grasses (e.g., bromegrass, orchardgrass, rye or timothy), when existing weeds exceed 3 inches in height or when very dry conditions exist, add Gramoxone Extra at the rate of 2.5 pts./A in place of or in addition to 2,4-D as indicated above. Do not apply Gramoxone Extra in suspension-type liquid fertilizer. Observe all directions for use, precautions and limitations on the respective product labels when applying these products in tank mix combination.

Note: When applying Bicep Lite and Bladex in tank mix combination, follow directions under Conventional Tillage above to ensure compatibility of these products in the tank mixture.

Table 5: Bicep Lite for Minimum-Tillage or No-Tillage Corn

Soil Texture	Broadcast Rate Per Acre
Coarse Sand, loamy sand, sandy loam	1.8 qts.
Medium Loam, silt loam, silt	2.4 qts.
Fine Sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	2.4-3 qts.*
Muck or peat soils	DO NOT USE

*For yellow nutsedge control on fine-textured soils above 3% organic matter, apply 3 qts. of Bicep Lite per acre.

Tank Mixture with Linuron for Control of Lambsquarters and Pigweed

For prolonged control of lambsquarters and pigweed in DE, MD, NJ, NY, PA, VA and WV, Bicep Lite may be applied preemergence in combination with linuron. Apply Bicep Lite according to the rates in Table 1 and linuron according to the rates below.

<u>Soil Texture</u>	<u>Broadcast Rate Per Acre</u>
Sandy loam (1-3% organic matter)	0.67 lb. Lorox* or equivalent
Sandy loam (3-6% organic matter)	1.0 lb. Lorox*
Medium and fine-textured soils (1-6% organic matter)	1.0 lb. Lorox*

*When using Lorox L or Lorox DF, use equivalent rates. One pt. of Lorox L equals one lb. of Lorox DF.

Follow instructions and precautions on the Bicep Lite and Lorox labels when tank mixing these products.

Rotational Crops: Follow the crop rotation instructions in the Bicep Lite Alone section for corn.

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Bicep Lite Combinations - Grain Sorghum (Seed treated with Concep)

Tank Mixtures of Bicep Lite with Gramoxone Extra or Roundup for Minimum-Tillage or No-Tillage Systems

In minimum-tillage or no-tillage systems where grain sorghum is planted directly into a cover crop, stale seedbed, established sod, or previous crop residues, the contact herbicides Gramoxone Extra or Roundup may be tank mixed with Bicep Lite. When used as directed, the Gramoxone Extra portion of the tank mixture controls most emerged annual weeds and suppresses many perennial weeds. Roundup combinations will control emerged annual and perennial weeds when applied as directed on the Roundup label. The Bicep Lite portion of the tank mixture provides preemergence control of the weeds listed on this label in the Bicep Lite Applied Alone section.

Refer to the label of each product used in combination and observe the planting details, restrictions, and all other precautions and limitations.

Application: Apply before, during, or after planting but before grain sorghum emerges, at the appropriate rate in Table 6. Add Gramoxone Extra or Roundup at the following broadcast rates:

Gramoxone Extra: 1.5-2.0, 2.0-2.5 or 2.5-3.0 pts. per acre to 1-3 inches, 3-6 inches, or 6 inch tall weeds, respectively. Apply surfactant at 1 or 2 pts. per 100 gals. of spray mixture with 75% or greater or 50-74% nonionic active ingredient, respectively. This treatment will not control weeds taller than 6 inches.

Roundup: 1.5 qts. per acre for control of existing annual weeds, or 2-4 qts. per acre for existing perennial weeds. See the Roundup label for weeds controlled and recommended rates for specific weeds.

Apply in a minimum of 20 gals. of water per acre with conventional spray equipment.

Table 6: Bicep Lite for Minimum-Tillage or No-Tillage Grain Sorghum* (Seed treated with Concep)

Soil Texture	Organic Matter	Broadcast Rate Per Acre
Coarse Sand, loam, sand, sandy loam	any level	DO NOT USE
Medium and Fine Loam, silt loam, silt, sandy clay loam, silty clay loam, clay loam, sandy clay, silty clay, clay	less than 1%	DO NOT USE
	1-1.5%	1.8 qts.
	more than 1.5%	2.1-2.4 qts.

*Do not use in NM or TX except in the Texas Panhandle, Gulf Coast, and Blacklands areas. Do not apply preplant incorporated in AZ or the Imperial Valley of CA.

Precautions: To avoid possible crop injury, (1) Do not apply Bicep Lite on highly alkaline soils (pH greater than 8.0) or on eroded areas where calcareous subsoils are exposed. (2) Do not apply Bicep Lite when sorghum is planted in deep furrows because heavy rains following application can cause excessive concentrations of herbicide in the furrow. (3) Do not apply to sorghum grown under dry mulch tillage. (4) Injury may occur if both Bicep Lite applied early preplant, preplant surface, preplant incorporated, or preemergence and an at-planting systemic insecticide applied in-furrow are used. (5) In addition, sorghum growing under stress caused by minor element deficiency may be injured by Bicep Lite.

Rotational Crops: Follow the crop rotation instructions in the Bicep Lite Alone section.

Storage and Disposal

Storage

Ground water contamination may be reduced by diking and flooring of permanent liquid bulk storage sites with an impermeable material.

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Pesticide Disposal

Do not contaminate water, food, or feed by storage, disposal, or cleaning of equipment. Open dumping is prohibited. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of federal law. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

Container Disposal

Refer to label on container for container disposal instructions.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire or other emergency, call 1-800-888-8372 day or night.

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING/AVISO

May be fatal if inhaled. Do not breathe vapor or spray mist. Wear a mask or pesticide respirator jointly approved by the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health. Harmful if swallowed or absorbed through skin. Causes moderate eye and skin irritation. A skin sensitization reaction may occur in certain individuals. Avoid contact with eyes, skin, or clothing. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

Users are required to wear long-sleeved shirts and long pants (or equivalent), chemical-resistant gloves, and waterproofed boots. Persons involved in mixing/loading operations are required to use heavy-duty chemical-resistant rubber or neoprene gloves and a face shield or goggles.

Statement of Practical Treatment

If inhaled: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

If swallowed: Call a physician or Poison Control Center. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

If in eyes: Flush eyes with plenty of water. Get medical attention if irritation persists.

If on skin: Wash with plenty of soap and water. Get medical attention if irritation persists.

Note to Physician: If ingested, induce emesis or lavage stomach. Use of an aqueous slurry of activated charcoal should be considered.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters. This pesticide contains atrazine, which has been shown to be toxic to aquatic invertebrates. Runoff and drift from treated areas may be hazardous to aquatic organisms in neighboring areas.

Ground Water and Surface Water Advisory

Bicep Lite contains both the active ingredients atrazine and metolachlor.

Atrazine can travel (seep or leach) through soil and can enter ground water which may be used as drinking water. Atrazine has been found in ground water. Users are advised not to apply atrazine to sand and loamy sand soils where the water table (ground water) is close to the surface and where these soils are very permeable, i.e., well-drained. Your local agricultural agencies can provide further information on the type of soil in your area and the location of ground water.

Metolachlor has been identified in limited sampling of ground water and there is the possibility that it may leach through the soil to ground water, especially where soils are coarse and ground water is near the surface. Following application and during rainfall events that cause runoff, metolachlor may reach surface water bodies including streams, rivers, and reservoirs.

Care must be taken when using this product to prevent back siphoning into wells, spills, or improper disposal of excess pesticide, spray mixtures, or rinsates.

Check valves or antisiphoning devices must be used on all mixing equipment.

This product may not be mixed/loaded or used within 50 feet of all wells, including abandoned wells, drainage wells, and sink holes. This product may not be mixed or loaded within 50 feet of intermittent streams and rivers, natural or impounded lakes and reservoirs. This product may not be applied aerially or by ground within 66 feet of the points where field surface water runoff enters perennial or intermittent streams and rivers or within 200 feet around natural or impounded lakes and reservoirs. If this product is applied to highly erodible land, the 66 foot buffer or setback from runoff entry points must be planted to crop or seeded with grasses or other suitable crop.

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