

59639-132

12/10/2004

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U.S. ENVIRONMENTAL PROTECTION AGENCY  
Office of Pesticide Programs  
Registration Division (7505C)  
1200 Pennsylvania Ave., N.W.  
Washington, D.C. 20460

EPA Reg.  
Number:

59639-132

Date of Issuance:

DEC 10 2004

**NOTICE OF PESTICIDE:**

☒ Registration  
☐ Reregistration

(under FIFRA, as amended)

Term of Issuance:

Conditional

Name of Pesticide Product:

V-10137 1 EC

Name and Address of Registrant (include ZIP Code):

Valent U.S.A  
1600 Riviera Avenue., Suite 200  
Walnut Creek, California 94596-8025

**Note:** Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Registration Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered/reregistered under the Federal Insecticide, Fungicide and Rodenticide Act.

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA sec. 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration of your product when the Agency requires all registrants of similar products to submit such data.

2. Make the following label change:

- a. Revise the EPA Registration Number to read, "EPA Reg. No. 59639-132".
- b. Within the Agricultural Use Requirement box, please incorporate the additional PPE: coveralls over short-sleeved shirt and short pants, chemical-resistant gloves such as Barrier laminate or Viton  $\geq$  14 mils, chemical-resistant footwear plus socks, protective eyewear, and chemical resistant headgear for overhead exposure.
- c. There is a typographical error noted on page 8 of your product labeling. Within the table entitled "ADDITION OF ADJUVANTS BY CROP" in the row listing onions, shallots, etc under column of adjuvant recommendations, revise the word "weds" to read as "weeds" in the first statement.

Signature of Approving Official:

/s/

Date:

DEC 10 2004

3. Submit, within one (1) year of this pesticide registration notice, the results of the storage stability (GRN 830.6317) and corrosion characteristics (GRN 830.6320) study to the Agency.

4. Submit, within six (6) months of this pesticide registration notice, the results of the miscibility (GRN 830.6319) study to the Agency.

5. Submit, within one (1) year of this pesticide registration notice, a primary eye irritation (OPPTS 870.2400) study according to the Agency memo, dated 03/19/04.

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

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA sec. 6(e). Your release for shipment of the product constitutes acceptance of these conditions.

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

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

Enclosures

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

DEC 10 2004

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

59639-132

## V-10137 1 EC (HERBICIDE)

Active Ingredient	By Wt.
*Clethodim .....	12.6%
Other Ingredients .....	87.4%
Total .....	100.0%

Contains Petroleum Distillates

\*(E)-2-[1-[[[(3-chloro-2-propenyl)oxy]imino]propyl]-5-[2-(ethylthio)propyl]-3-hydroxy-2-cyclohexen-1-one

Contains 0.97 lbs. clethodim per gal.

**KEEP OUT OF REACH OF CHILDREN**

### WARNING - AVISO

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.)

**SEE NEXT PAGE FOR ADDITIONAL PRECAUTIONARY STATEMENTS**

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## PRECAUTIONARY STATEMENTS

### HAZARDS TO HUMANS & DOMESTIC ANIMALS

#### WARNING

Causes substantial but temporary eye irritation. Avoid contact with skin. Do not get in eyes, on skin or on clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

#### FIRST AID

- |                                |  |
|--------------------------------|--|
| <b>If in eyes:</b>             | <ul style="list-style-type: none"><li>• Hold eye open and rinse slowly and gently with water for 15-20 minutes.</li><li>• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>                        |
| <b>If on skin or clothing:</b> | <ul style="list-style-type: none"><li>• Take off contaminated clothing.</li><li>• Rinse skin immediately with plenty of water for 15-20 minutes.</li><li>• Call a poison control center or doctor for treatment advice.</li></ul>  |
| <b>If swallowed:</b>           | <ul style="list-style-type: none"><li>• Immediately call a poison control center or doctor.</li><li>• Do not induce vomiting unless told to do so by a poison control center or doctor.</li><li>• Do not give <b>any</b> liquid to the person.</li><li>• Do not give anything by mouth to an unconscious person.</li></ul> |
| <b>If inhaled:</b>             | <ul style="list-style-type: none"><li>• Move person to fresh air.</li><li>• If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.</li><li>• Call a poison control center or doctor for further treatment advice.</li></ul>                       |

#### 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 **1-800-892-0099** for emergency medical treatment information.

#### NOTE TO PHYSICIAN

Ingestion of this product or subsequent vomiting can result in aspiration of light hydrocarbon liquid, which can cause pneumonitis. If ingested, probable mucosal damage may contraindicate the use of gastric lavage.

#### PERSONAL PROTECTIVE EQUIPMENT (PPE):

Some materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for category G on an EPA chemical resistance category selection chart.

**Applicators and other handlers must wear:** long-sleeved shirt and long pants, chemical-resistant gloves such as Barrier Laminate or Viton  $\geq$  14 mils, shoes plus socks, and protective eyewear.

**Discard clothing and 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 there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**USER SAFETY RECOMMENDATIONS**

Users should:

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

**ENVIRONMENTAL HAZARDS:**

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 apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment washwater or rinsate.

The use of this product may pose a hazard to the federally designated endangered species of Solano Grass and Wild Rice. Use of this product is prohibited in the following areas where the species are known to exist:

Solano Grass: Solano County, California: the vernal lakes area bounded by the Union Pacific Railroad and Hastings Road to the north, Highway 113 to the east, Highway 12 to the south, and Travis Air Force Base to the west.

Wild Rice: Hays County, Texas.

**PHYSICAL OR CHEMICAL HAZARDS:**

Do not use or store near heat or open flame.

## DIRECTIONS FOR USE

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

**READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS, AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.**

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

### AGRICULTURAL USE REQUIREMENTS

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

Do not enter or allow worker entry into treated areas during the restricted-entry interval (REI) of 24 hours.

PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: long-sleeved shirt and long pants, chemical-resistant gloves and shoes plus socks.

### 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.

Keep all unprotected persons out of operating areas, or vicinity where there may be drift.  
Do not enter treated areas without protective clothing until sprays have dried.

**DISCLAIMER, RISKS OF USING THIS PRODUCT,  
LIMITED WARRANTY  
AND LIMITATION OF LIABILITY**

**IMPORTANT:** Read the entire Label including this Disclaimer, Risks of Using this Product, Limited Warranty, and Limitation of Liability before using this product. If the terms are not acceptable THEN DO NOT USE THE PRODUCT; rather, return the unopened product within 15 days of purchase for a refund of the purchase price.

**RISKS OF USING THIS PRODUCT**

The Buyer and User (referred to collectively herein as "Buyer") of this product should be aware that there are inherent unintended risks associated with the use of this product which are impossible to eliminate. These risks include, but are not limited to, injury to plants and crops to which this product is applied, lack of control of the target pests or weeds, resistance of the target pest or weeds to this product, injury caused by drift, and injury to rotational crops caused by carryover in the soil. Such risks of crop injury, non-performance, resistance or other unintended consequences are unavoidable and may result because of such factors as weather, soil conditions, disease, moisture conditions, irrigation practices, condition of the crop at the time of application, presence of other materials either applied in the tank mix with this product or prior to application of this product, cultural practices or the manner of use or application, (or a combination of such factors) all of which are factors beyond the control of Valent. The Buyer should be aware that these inherent unintended risks may reduce the harvested yield of the crop in all or a portion of the treated acreage, or otherwise affect the crop such that additional care, treatment and expense are required to take the crop to harvest. If the Buyer chooses not to accept these risks, THEN THIS PRODUCT SHOULD NOT BE APPLIED. By applying this product Buyer acknowledges and accepts these inherent unintended risks AND AGREES THAT ALL SUCH RISKS ASSOCIATED WITH THE APPLICATION AND USE ARE ASSUMED BY THE BUYER.

Valent shall not be responsible for losses or damages (including, but not limited to, loss of yield, increased expenses of farming the crop or such incidental, consequential or special damages that may be claimed) resulting from use of this product in any manner not set forth on the label. Buyer assumes all risks associated with the use of this product in any manner or under conditions not specifically directed or approved on the label.

**LIMITED WARRANTY**

Valent warrants only that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the label, under average use conditions, when used strictly in accordance with the label and subject to the Risks of Using This Product as described above. EXCEPT AS SET FORTH ABOVE, VALENT MAKES NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED. No agent or representative of Valent or Seller is authorized to make or create any other express or implied warranty.

**LIMITATION OF LIABILITY**

In no event shall Valent or Seller be liable for any incidental, consequential, indirect or special damages resulting from the use or handling of this product. The limitation includes, but is not limited to, loss of yield on all or any portion of the treated acreage, increased care, treatment or other expenses required to take the crop to harvest, increased finance charges or altered finance ratings, emotional or mental distress and/or exemplary damages. THE EXCLUSIVE REMEDY OF THE BUYER, AND THE EXCLUSIVE MAXIMUM LIABILITY OF VALENT OR SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT OR, AT THE ELECTION OF VALENT OR SELLER, THE REPLACEMENT OF THE PRODUCT.

**PROMPT NOTICE OF CLAIM**

Valent must be provided notice as soon as Buyer has reason to believe it may have a claim, but in no event later than twenty-one days from date of planting, or twenty-one days from the date of application, whichever is latter, so that an immediate inspection of the affected property and growing crops can be made.

If Buyer does not notify Valent of any claims, in such period, it shall be barred from obtaining any remedy.

**NO AMENDMENTS**

Valent and Seller offer this product, and Buyer accepts it, subject to the foregoing Disclaimer, Risks of Using This Product, Limited Warranty and Limitation of Liability, which may not be modified by any oral or written agreement.

**TANK MIXES**

**NOTICE:** Tank mixing or use of this product with any other product which is not specifically and expressly authorized by the label shall be the exclusive risk of user, applicator and/or application advisor.

Read and follow the entire label of each product to be used in the tank mix with this product.

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**THE FOLLOWING STATEMENT ON CHEMIGATION WILL BE USED ONLY IF A SUPPLEMENTAL LABEL IS CREATED.**

**CHEMIGATION**

[Do not apply this product through any irrigation system unless the supplemental labeling on chemigation is followed. Refer to supplemental labeling entitled, "Application of V-10137 1.0 EC Onions (dry bulbs and green) and Garlic by Chemigation", for use directions for chemigation.]

May be applied to onions and garlic by sprinkler irrigation systems. Do not apply by chemigation to any other crop, or to this crop using any other type of irrigation system.

**GENERAL INFORMATION**

**FOR USE ON:** Soybeans, Cotton, Ornamentals, Sugar beets, Onions (dry bulbs and green), Garlic, Shallots (dry bulbs and green), Alfalfa, Peanuts, Dry Beans, Sunflower, Canola, Flax, Mustard Seed, Potato, Sweet Potato, Yam (and other Tuberous<sup>1</sup> and Corm<sup>1</sup> Vegetables), Tomatoes, Peppers (bell and non-bell), Eggplants (and other Fruiting Vegetables), Carrot, Radish, Garden Beet, Horseradish (and other Root Vegetables<sup>2</sup>), Leaf Lettuce, Broccoli, Cabbage, Cauliflower (and other Head and Stem Brassica Vegetables<sup>3</sup>), Mustard Greens (and other Leafy Brassica Greens<sup>4</sup>), Spinach, Celery, Rhubarb (and other Leaf Petioles<sup>5</sup>), Cranberry, Strawberry, Squash (including Pumpkins), Cucumber, Melons (including Cantaloupes and Watermelons), Mint, Clover (grown in Idaho, Oregon and Washington only), Conifer Trees, Non-Bearing Food Crops, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-Planted Areas.

- <sup>1</sup> Other tuber and corm vegetables approved for use with V-10137 1.0 EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, tanier, turmeric and bean yam.
- <sup>2</sup> Other root vegetables approved for use with V-10137 1.0 EC include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.
- <sup>3</sup> Other head and stem brassica vegetables approved for use with V-10137 1.0 EC include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard; cavalo broccolo; and kohlrabi.
- <sup>4</sup> Other leafy brassica greens approved for use with V-10137 1.0 EC include; broccoli raab, cabbage, Chinese(bok choy); collards; kale, mizuna, mustard greens, mustard spinach; rape greens and turnip greens.
- <sup>5</sup> Other leaf petiole crops approved for use with V-10137 1.0 EC include: cardoon, Chinese celery, celtuce, Florence fennel, and swiss chard.

V-10137 1.0 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

V-10137 1.0 EC is a selective postemergence herbicide for control of annual and perennial grasses. V-10137 1.0 EC does not control sedges or broadleaf weeds.

Repeated use of V-10137 1.0 EC (or similar postemergence grass herbicide with the same mode of action) may lead to the selection of naturally occurring biotypes that are resistant to these products in some grass species.

If poor performance occurs and cannot be attributed to adverse weather or application conditions, a resistant biotype may be present. This is most likely to occur in fields where other control strategies such as crop rotation, mechanical removal, and other classes of herbicides are not used from year to year.

Do not allow V-10137 1.0 EC to come in contact with desirable grass crops such as corn, rice, sorghum, small grains, or turf, as these and other grass crops will be injured or killed. Minor leaf spotting may occur on treated plants under certain environmental conditions. New foliage is not affected.



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#### **Control Symptoms**

Treated grass weeds show a reduction in vigor and growth. Early chlorosis/necrosis of younger plant tissue is followed by a progressive collapse of the remaining foliage. Symptoms will generally be observed in 7 to 14 days after application, depending on grass species treated and environmental conditions.

### **APPLICATION INFORMATION**

#### **Timing of Applications**

Apply V-10137 1.0 EC postemergence to actively growing grasses according to rate table recommendations. Applications made to grass plants stressed by insufficient moisture, hot or cold temperatures, or to grass plants exceeding recommended growth stages may result in unsatisfactory control. Do not apply under these conditions.

In arid regions where irrigation is used to supplement limited rainfall, V-10137 1.0 EC should be applied as soon as possible, after a irrigation (within 7 days). In arid regions, a second application of V-10137 1.0 EC will generally provide more effective control of perennial grass weeds than a single application. Make second application to actively growing grass 2 to 3 weeks after emergence of new growth.

Cultivation of treated grasses 7 days prior to or within 7 days after application of V-10137 1.0 EC may reduce weed control. DO NOT APPLY V-10137 1.0 EC if rainfall is expected within one hour, since control may be reduced.

## ADDITION OF ADJUVANTS BY CROP

CROP	ADJUVANT RECOMMENDATIONS
Soybeans, Alfalfa, Dry Bean, Cotton, Peanuts, Sugar Beet, Sunflower, Potatoes	<p>For the control of weeds in Roundup Ready (RR) cotton, RR soybeans and sugar beets using tank mixtures, use specific adjuvant recommendations contained in Tables 5, 13, 14 and 17.</p> <p>Always use a crop oil concentrate* or a methylated seed oil at 1.0 qt./A by ground or 1% v/v (but not less than 1 pt./A) in the finished spray volume by air. Non-ionic surfactants may be used in place of crop oil concentrates under certain crop situations (see crop specific use restrictions and limitations).</p> <p>1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to V-10137 1.0 EC applications, in addition to the recommended rate of crop oil concentrate. The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.</p>
Onions (dry bulbs and green), Garlic, Shallots (dry bulbs and green), Carrot, Radish, Garden Beet, Horseradish (and other Root Vegetables), Leaf Lettuce, Broccoli, Cabbage, Cauliflower (and other Head and Stem Brassica Vegetables), Mustard Greens (and other Leafy Brassica Greens), Spinach, Celery, Rhubarb (and other leaf petioles), Cranberry, Sweet Potatoes, Yams (and other tuberous and corm vegetables), Canola, Flax, Mustard Seed, Tomatoes, Peppers (bell and non-bell), Eggplants (and other fruiting vegetables), Strawberry, Squash (including Pumpkins), Cucumber, Melons (including Cantaloupes and Watermelons), Mint, and Clover	<p>For the control of weeds in canola and flax using tank mixtures, use specific adjuvant recommendations contained in Tables 2 and 7.</p> <p>Depending on the crop/weed situation one of the following adjuvants is recommended for use; crop oil concentrate (1.0% v/v), crop oil concentrate blends (1.0% v/v) or non-ionic surfactants (0.25% v/v).</p> <p>Addition of liquid fertilizer is not recommended for these crops.</p>
Ornamental Plants, Non-Bearing Food Crops	Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v). Use of crop oil concentrate is not recommended since it may injure flowers and foliage.
Conifer Trees, Fallow Land (and other non-producing agricultural areas), and Non-Crop or Non-Planted Areas	Always use a crop oil concentrate containing at least 15% emulsifier at 1% v/v (but not less than 1 pt./A) in the finished spray volume.

\*Crop oil concentrate or crop oil concentrate blends are approved for use with V-10137 1.0 EC. Acceptable crop oil concentrates would be those that contain a minimum of 80% oils and 15% emulsifier. Acceptable crop oil concentrate blends would be those that contain a minimum of 60% oils and 25-40% surfactants and emulsifiers. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non-phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

### Ground Application

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 40 gals. of spray solution per acre. Under the following conditions a minimum of 10 gals. per acre is required: ultra narrow row cotton, narrow row soybeans, broadleaf herbicide tank mixes, perennial grasses, volunteer corn, drought or stress conditions, heavy grass pressure or when grasses are at or near maximum height. Failure to use a minimum of 10 gals. per acre under these conditions can result in poor coverage and reduced grass control requiring repeat applications. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

Applications to onions (dry bulbs and green), garlic, or shallots (dry bulbs and green) should be made in a minimum of 20 gals. of spray solution per acre.

### Air Application

Use a minimum of 3 gals. of spray solution per acre unless otherwise directed in this label. Increase spray volumes up to 10 gals. as grass or crop foliage becomes dense. For onions (dry bulbs and green), garlic or shallots (dry bulbs and green): When applying by air do not exceed 16 fl. oz./A in a single application. In California, air applications to onions, garlic, or shallots should be made in a minimum of 20 gals. of spray solution per acre. In states other than California, air application to onions, garlic or shallots should be made in a minimum of 10 gals. of spray solution.

**NOTE: Crop injury may occur when V-10137 1.0 EC is applied to onions, garlic or shallots with aerial equipment.**

### Spot Treatment

When using hand sprayers or high volume sprayers utilizing hand guns, mix 1/3 to 2/3% (0.44 oz. to 0.85 oz. per gal.) V-10137 1.0 EC and treat to wet vegetation, while not allowing runoff of spray solution. For uses requiring crop oil concentrate, include crop oil concentrate at 1% (1.3 oz. per gal.) by volume. For uses requiring non-ionic surfactant, include non-ionic surfactant at 1/4% (0.33 oz. per gal.) by volume.

**NOTE: If V-10137 1.0 EC is applied as a spot treatment care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.**

### CHEMIGATION – ONION (Dry Bulbs and Green) AND GARLIC SPRINKLER IRRIGATION APPLICATION

- Do not apply V-10137 1.0 EC by chemigation in the states of Idaho, Montana, Oregon and Washington.

Apply V-10137 1.0 EC at the high rate recommended for annual grasses (32 fl. oz./A) when the grass height is at the low end of the range (application to larger grasses may not provide adequate control). Add a crop oil concentrate containing at least 15% emulsifier at 1 quart per acre.

Apply V-10137 1.0 EC in 0.1 to 0.2 acre inch of water either at the end of a regular irrigation set or as a separate application not associated with a regular irrigation using the least amount of water that provides proper distribution and coverage. Application of more than label recommended quantities of irrigation water per acre may result in decreased product performance by removing the chemical from the zone of effectiveness. Use a metering device to inject the V-10137 1.0 EC into the irrigation water at a constant flow. Constant agitation must be maintained in the chemical supply tank during the entire period of herbicide application. Inject the product with a positive displacement pump into the main line ahead of a right angle turn to ensure adequate mixing. Allow time for all lines to flush the herbicide through all nozzles before turning off irrigation water. To ensure the lines are flushed and free of remaining herbicide, a dye indicator may be injected into the lines to mark the end of the application period.

It is not recommended that V-10137 1.0 EC be applied through an irrigation system connected to a public water system. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

**Use Precautions**

1. Apply this product only through irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, travelers, big gun, solid set, or hand move. Do not apply this product through any other type of irrigation system.
2. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop may result from non-uniform distribution of treated water.
3. If you have any questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts.
4. Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the label-prescribed safety devices for public water supplies are in place.
5. A person knowledgeable of chemigation system and responsible for its operation or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
6. The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow.
7. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
8. The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.
9. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
10. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
11. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
12. Do not apply when wind speed favors drift beyond the area intended for treatment.

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## RESTRICTIONS AND LIMITATIONS

### GENERAL

Do not apply if rain is expected within 1 hour of application as control may be unsatisfactory.

Do not apply a postemergence broadleaf herbicide within one day following application of V-10137 1.0 EC or reduced grass control may result.

V-10137 1.0 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.

For canola, flax, mustard seed, clover and radish crops, do not apply more than 32 fl. oz. of V-10137 1.0 EC (0.25 lb. ai) per acre per season. For all other crops, do not apply more than 64 fl. oz. of V-10137 1.0 EC (0.50 lb. ai) per acre per season. Application on Long Island, New York, is restricted to no more than 32 fl. oz. of V-10137 1.0 EC (0.25 lb. ai) per acre per season.

Do not apply more than 16 fl. oz./A of V-10137 1.0 EC per application to the following crops: garden beets, carrots, radish, (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 12 fl. oz./A of V-10137 1.0 EC per application to canola or mustard seed. **Exceeding these recommendations may result in unacceptable crop injury.**

Do not apply under conditions of stress. Applying V-10137 1.0 EC under conditions that do not promote active grass growth will reduce herbicide effectiveness. These conditions include drought, excessive water, extremes in temperature, low humidity, and grasses either partially controlled or stunted from prior pesticide applications. Grasses under these kinds of stressful conditions will not absorb and translocate V-10137 1.0 EC effectively, and will be less susceptible to herbicide activity.

Optimal perennial grass control can be obtained if rhizomes or stolons are cut up by preplant tillage practices (discing, plowing, etc.) to stimulate maximum emergence of grass shoots. Cultural practices, such as continuous no-tillage in which the perennial grass rhizomes or stolons are not cut up, results in a very staggered, non-uniform weed emergence. Due to this non-uniform weed emergence, no fewer than 2 V-10137 1.0 EC applications per season per year are recommended at the appropriate weed-growth stage rate under continuous no-till conditions.

Grass crops such as corn, rice, sorghum, small grains, or turf, etc. are highly sensitive to V-10137 1.0 EC.

While all the vegetable crops on this label have been tested and are tolerant to V-10137 1.0 EC, not all specialty varieties of these crops have been tested. It is advised that, before applying V-10137 1.0 EC to specialty varieties of vegetable crops on this label, crop tolerance be investigated first using a small section of the field. It is possible that injury symptoms can occur. Symptoms may appear as leaf speckling or stunting.

Always read and follow the restrictions and limitations for all products whether used alone or in a tank mix. The most restrictive labeling of any product used applies in tank mixtures, including all crop rotational and other crop restrictions.

Tank mixes of V-10137 1.0 EC and broadleaf herbicides may result in reduced grass control. If grass regrowth occurs, an additional application of V-10137 1.0 EC may be necessary.

## **AVOID SPRAY DRIFT**

Do not allow spray from ground or aerial equipment to drift onto adjacent land or crops. When drift may be a problem, do everything possible to reduce spray drift, including:

- Do not spray if wind speeds are or become excessive.
- Do not spray if wind speed is 10 mph or greater. If sensitive crops or plants are downwind, extreme caution must be used under all conditions.
- Do not spray if winds are gusty.
- Use extreme caution when conditions are favorable for drift (high temperatures, drought, low relative humidity), especially when sensitive plants are located nearby.
- Do not apply when a temperature inversion exists. If inversion conditions are suspected, consult with local weather services before making an application.
- Further reductions in drift can be obtained by:
  1. Using large droplet size sprays. Do not use nozzles that produce small droplets. Orient nozzles downward and slightly backward as needed to reduce drift for ground applications.
  2. Orienting nozzles straight back with the windstream, using straight stream orifices for aerial applications. Use the lowest number of nozzles practical with the largest possible orifice size to obtain the minimum 3 GPA volume. Application height and boom length should be set according to manufacturer's instructions to minimize drift.
  3. Increasing the volume of spray mixture (for example a minimum of 10 GPA for ground applications) by using higher flow rate nozzles. Using lower pressure with the appropriate nozzle to obtain higher volumes will also reduce drift.
  4. Applying as close to target plants as practical while maintaining a good spray pattern for adequate coverage.

**Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption.**

## CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC

Crop <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rate Per Acre	Crop Oil Concentrate Rate Per Acre <sup>(2)</sup>	Special Use Instructions
<b>Alfalfa</b> including: Sainfoin, Holy clover, Birdsfoot trefoil <sup>(3)</sup>	15 days before grazing, feeding or harvesting (cutting) for forage or hay	12-32 fl.oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Do not plant rotational crops until 30 days after application of V-10137 1.0 EC <sup>(6)</sup>  The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Beans, Dry</b>	30 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Beet, Garden</b>	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Carrot</b>	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Canola</b>	70 days	8-12 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when V-10137 1.0 EC is applied during the bloom period.  Do not exceed 32 fl. oz./A in a season.
<b>Celery</b> includes: Cardoon Chinese celery Celtuce Florence fennel Swiss chard	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

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## CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC (continued)

Crop <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rate Per Acre	Crop Oil Concentrate Rate Per Acre <sup>(2)</sup>	Special Use Instructions
Clover	15 days before grazing, feeding, or harvesting (cutting) for forage or hay	12-32 fl. oz.	1% v/v in the finished spray volume.	For use on clover grown in the states of Idaho, Oregon and Washington only.  Do not exceed 32 fl. oz. in a season.
Cotton	60 days	12-32 fl. oz.	1 qt. By ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock.  The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Cranberry	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  Do not apply between the "hook" stage and full fruit set.  For repeat applications make on a minimum of a 14 day interval.
Cucurbits including: Cantaloupes (all) Cucumber Gherkin Honeydew Melon Muskmelons (all) Pumpkin Squash (all) Watermelon	14 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
Fallow Land Conifer Trees (and other non-producing agricultural areas) Non-Crop or Non-Planted Areas	N/A	12-32 fl. oz.	1% v/v (but not less than 1 pt./A) in the finished spray volume using a crop oil concentrate containing at least 15% emulsifier.	Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
Flax	60 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Apply prior to bloom. Crop injury may occur when V-10137 1.0 EC is applied during the bloom period.  Do not exceed 32 fl. oz. in a season

continued



## CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC (continued)

Crop <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rate Per Acre	Crop Oil Concentrate Rate Per Acre <sup>(2)</sup>	Special Use Instructions
<b>Fruiting Vegetable</b> (Except tomato) including: Eggplant, Groundcherry Pepino Peppers (all) Tomatillo	20 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Head and Stem Brassica Vegetables</b> , including: Broccoli Cabbage Cauliflower Brussel sprouts	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Leafy Brassica Greens</b> , including: Broccoli raab Cabbage, Chinese (bok choy) Collards Kale Mizuna Mustard greens Mustard spinach Rape greens Turnip greens	14 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat application make on a minimum of a 14 day interval.
<b>Leaf Lettuce</b>	14 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Mint</b>	21 days	12-32 fl. oz. <sup>(4)</sup>	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air.	Do not apply more than 32 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Mustard Seed</b>	75 days	8-12 fl. oz.	1% v/v in the finished spray volume.	Do not apply after crop has begun bolting. Crop injury may occur when V-10137 1.0 EC is applied during the bloom period.  Do not exceed 32 fl. oz. in a season.
<b>Onions (Dry Bulbs Only)</b> <b>Garlic</b> <b>Shallots (Dry Bulbs Only)</b>	45 days	12-32 fl. oz. <sup>(7), (8)</sup>	1% v/v in the finished spray volume.	Minimum of 20 gals./A spray volume by ground in entire U.S.  Minimum of 20 gals./A spray volume by air in California <sup>(9)</sup>  In states other than California, air applications to onions, garlic or shallots should be made in a minimum of 10 gals./A.

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## CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC (continued)

Crop <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rate Per Acre	Crop Oil Concentrate Rate Per Acre <sup>(2)</sup>	Special Use Instructions
Onions, Green including: Leeks Scallions or Spring Onions Japanese Bunching Onions Green Shallots Green Eschalots	14 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
Ornamentals	N/A	12-32 fl. oz.	Use of crop oil concentrate is not recommended since it may injure flowers and foliage. See Special Use Instructions	Add a non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25%v/v).
Non-Bearing Food Crops	N/A	12-16 fl. oz. <sup>(8)</sup>		Sugar maples cannot be tapped for syrup within one year of V-10137 1.0 EC application.
Peanut	40 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Potato	30 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
Radish	15 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  Do not apply more than 32 fl. oz. (0.25 lb. ai) per acre in a season.  For repeat applications make on a minimum of a 14 day interval.
Root Vegetables (except Radish), including: Chicory Ginseng Horseradish Turnip	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.

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**CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC (continued)**

<b>Crop<sup>(1)</sup></b>	<b>Minimum Time From Application to Harvest (PHI)</b>	<b>Use Rate Per Acre</b>	<b>Crop Oil Concentrate Rate Per Acre <sup>(2)</sup></b>	<b>Special Use Instructions</b>
<b>Rhubarb</b>	30 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Soybean</b>	60 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Do not graze treated fields or feed treated forage or hay to livestock.  Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses  The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Spinach</b>	14 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Strawberry</b>	4 days	12-16 fl. oz.	1% v/v in the finished spray volume.	Do not apply more than 16 fl. oz./A in a single application.  For repeat applications make on a minimum of a 14 day interval.
<b>Sugar Beet</b>	40 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	Refer to appropriate Table for reduced rate recommendations for the control of small annual grasses.  The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.
<b>Sunflower</b>	70 days	12-32 fl. oz.	1 qt. by ground or 1% v/v (but not less than 1 pt./A) by air <sup>(5)</sup>	The addition of AMS has shown improved grass control for difficult to control species including; quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals, and volunteer corn.

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## CROP-SPECIFIC RESTRICTIONS AND LIMITATIONS FOR V-10137 1.0 EC (continued)

Crop <sup>(1)</sup>	Minimum Time From Application to Harvest (PHI)	Use Rate Per Acre	Crop Oil Concentrate Rate Per Acre <sup>(2)</sup>	Special Use Instructions
Sweet Potato, Yam and other tuberous and corm vegetables (except potato), including: Artichoke, Chinese Jerusalem Cassava, Bitter Sweet Ginger	30 days	12-32 fl. oz.	1% v/v in the finished spray volume.	The addition of AMS has shown improved grass control for difficult to control species including: quackgrass, rhizome Johnsongrass, red rice, wild oats, volunteer cereals and volunteer corn.
Tomato	20 days	12-32 fl. oz.	1% v/v in the finished spray volume.	--

N/A = Not Applicable

- <sup>(1)</sup> V-10137 1.0 EC is not recommended for use on vegetable crops being grown for seed production unless specific use directions are provided.
- <sup>(2)</sup> Crop oil concentrate in this case refers to both crop oil concentrate and crop oil concentrate blends. **Acceptable crop oil concentrates** would be those that contain a minimum of 80% oils and 15% emulsifier. **Acceptable crop oil concentrate blends** would be those that contain a minimum of 60% oils and 25-40% surfactants and emulsifiers. A crop oil concentrate must contain either a petroleum or vegetable oil base and must meet all the following criteria: be non-phytotoxic, contain only EPA-exempt ingredients, provide good mixing quality and be successful in local experience. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils. See the Addition of Adjuvant and Crop Oil Concentrate section for further information.
- <sup>(3)</sup> V-10137 1.0 EC may be applied to seedling or established alfalfa grown for seed, hay, silage, green chop, or direct grazing.
- <sup>(4)</sup> For weed control in established alfalfa and mint, the minimum use rate is 20 fl. oz./A.
- <sup>(5)</sup> 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N or 32%N), or an equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added to V-10137 1.0 EC applications, in addition to the recommended rate of crop oil concentrate.
- <sup>(6)</sup> Do not apply V-10137 1.0 EC and 2,4-DB as a tank mix to alfalfa unless the 60 day feeding, grazing, and harvesting restriction on the 2,4-DB label can be observed.
- <sup>(7)</sup> For ground applications to garlic or shallots, do not exceed 16 fl. oz./A in a single application. For air applications to onions, garlic or shallots, do not exceed 16 fl. oz./A in a single application. For garlic and shallots, do not exceed 2 applications per season. In CA for air applications to onions, do not exceed 2 applications per season.
- <sup>(8)</sup> If V-10137 1.0 EC is applied as a spot treatment to onions, garlic, shallots, or non-bearing food crops care should be taken to not exceed the maximum rate allowed on a "per acre" basis or crop injury may occur.
- <sup>(9)</sup> In California, do not apply V-10137 1.0 EC to onions, garlic, or shallots until crop has at least two full leaves. In California, 14 days spray intervals are recommended between the application of V-10137 1.0 EC and liquid nitrogen or other herbicide applications. Injury to crop may occur when shorter intervals are observed.

**DIRECTIONS FOR USE IN SOYBEANS, COTTON, SUGAR BEETS, ONIONS (Dry Bulbs and Green), GARLIC, SHALLOTS (Dry Bulbs and Green), ALFALFA, PEANUTS, DRY BEANS, SUNFLOWER, CANOLA, FLAX, MUSTARD SEED, POTATO, SWEET POTATO, YAM (and other Tuberous<sup>1</sup> and Corm<sup>1</sup> Vegetables), TOMATOES, PEPPERS (bell and non-bell), EGGPLANTS (and other Fruiting Vegetables), CARROT, RADISH, GARDEN BEET, HORSERADISH (and other Root Vegetables<sup>2</sup>) LEAF LETTUCE, BROCCOLI, CABBAGE, CAULIFLOWER (and other Head and Stem Brassica Vegetables<sup>3</sup>), MUSTARD GREENS (and other Leafy Brassica Greens<sup>4</sup>), SPINACH, CELERY, RHUBARB (and other Leaf Petioles<sup>5</sup>), CRANBERRY, STRAWBERRY, SQUASH (including PUMPKINS), CUCUMBER, MELONS (including CANTALOUPE and WATERMELONS), MINT, AND CLOVER (grown in Idaho, Oregon and Washington only), CONIFER TREES, NON-BEARING FOOD CROPS, AND NON-CROP OR NON-PLANTED AREAS.**

- <sup>1</sup> Other tuber and corm vegetables approved for use with V-10137 1.0 EC include: arracacha, arrowroot, Chinese artichoke, Jerusalem artichoke, edible burdock, edible canna, bitter and sweet cassava, chayote (root), chufa, dasheen (taro), ginger, leren, taniar, turmeric and bean yam
- <sup>2</sup> Other root vegetables approved for use with V-10137 1.0 EC include: burdock, edible; celeriac; chervil, turnip-rooted; chicory; ginseng; parsley, turnip-rooted; parsnip; radish, oriental; rutabaga; salsify; salsify, black; salsify, Spanish; skirret and turnip.
- <sup>3</sup> Other head and stem brassica vegetables approved include: Chinese broccoli; Brussels sprouts; Chinese (napa) cabbage; Chinese mustard; cavalo broccolo; and kohlrabi.
- <sup>4</sup> Other leafy brassica greens approved for use with V-10137 1.0 EC include; broccoli raab, cabbage, Chinese (bok choy); collards, kale, mizuna, mustard greens, mustard spinach; rape greens and turnip greens.
- <sup>5</sup> Other leaf petiole crops include: cardoon, Chinese celery, celtuce, Florence fennel, and swiss chard.

#### **IMPORTANT**

Plant tolerance to V-10137 1.0 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if the herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of V-10137 1.0 EC have investigated the safety factor to plants not listed on the label.

## NON-BEARING FOOD CROPS

V-10137 1.0 EC SHOULD NOT BE APPLIED TO NON-BEARING FRUIT OR NUT CROPS WHICH ARE GROWN FOR ROOT STOCK.

Crop injury to non-bearing fruit and nut crops can occur if V-10137 1.0 EC is improperly applied. V-10137 1.0 EC should not be applied directly over the top of these plant types. Instead spray should be directed at the base of the plant where grassy weeds are growing near the ground.

Non-bearing fruit and nut crops are plants which will not bear fruit or nuts for at least one year following V-10137 1.0 EC application.

COMMON NAME	SCIENTIFIC NAME
Apples	<i>Malus spp</i>
Berries	<i>Vaccinium spp.</i>
	<i>Rubus spp.</i>
Cherry, Sweet	<i>Prunus avium</i>
Citrus Fruits	<i>Citrus spp</i>
Grapes	<i>Vitis spp</i>
Olives	<i>Olea spp</i>
Peach	<i>Prunus persica</i>
Pears	<i>Pyrus communis</i>
Prunes	<i>Prunus spp</i>
Stone Fruits	<i>Prunus spp</i>
Strawberries	<i>Fragaria spp</i>
Tree Nuts	
Almond	<i>Prunus triloba</i>
Filbert	<i>Corylus maxima</i>
Pecan	<i>Carya illinoensis</i>
Pistachio	<i>Pistacia vera</i>
Walnut	<i>Juglans spp</i>

## CONIFER TREES

V-10137 1.0 EC can be used to control labeled grasses in Christmas tree farms, conifer nurseries, and conifer plantations (but not in forests).

COMMON NAME	SCIENTIFIC NAME
Arborvitae, American	<i>Thuja occidentalis</i>
Cedars	<i>Cedrus</i> spp
Cypress	<i>Taxodium</i> spp
Fir, Douglas	<i>Pseudotsuga menziesii</i>
Firs	<i>Abies</i> spp
Hemlock, Canadian/Eastern	<i>Tsuga canadensis</i>
Hemlock, Western	<i>Tsuga heterophylla</i>
Pines	<i>Pinus</i> spp
Spruces	<i>Picea</i> spp
Yew	<i>Taxus</i> spp

## NON-CROP OR NON-PLANTED AREAS

The following areas are considered non-crop or non-planted areas: Rights-of-way including railroads, highways, roads, dividers, medians, pipelines, public utility lines, pumping stations, transformer stations and substations. Around airports, electric utilities, commercial buildings, manufacturing plants, storage yards, rail yards, fence lines, parkways, and post-harvest croplands. Also beneath greenhouse benches and around golf courses.

**RECOMMENDATIONS FOR ANNUAL GRASSES  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT)**

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 16 fl. oz./A of V-10137 1.0 EC per application to the following crops: garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem brassica vegetables), mustard greens (and other leafy brassica greens), spinach, celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 12 fl. oz./A of V-10137 1.0 EC per application to canola or mustard seed.

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (inches)	RATE FL. OZ./ ACRE	HIGH RATE <sup>(4)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	12	16
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	12	16
Brome				
California	<i>Bromus carinatus</i>	2 to 6	12	16
Cheat	<i>Bromus secalinus</i>	2 to 6	12	16
Downy	<i>Bromus tectorum</i>	2 to 6	12	16
Ripgut	<i>Bromus diandrus</i>	2 to 6	12	16
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	12	16
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	12	16
Large	<i>Digitaria sanguinalis</i>	2 to 6**	12	16
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	12	16
Southern	<i>Digitaria ciliaris</i>	2 to 6**	12	16
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	12	16
Fall Panicum	<i>Panicum dichotomiflor</i>	2 to 8	12	16
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	12	16
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	12	16
Green	<i>Setaria viridis</i>	2 to 8	12	16
Yellow	<i>Setaria glauca</i>	2 to 8	12	16
Goosegrass	<i>Eleusine indica</i>	2 to 6**	12	16
Itchgrass	<i>Rottboellia cochinchinensis</i>	2 to 6	12	16
Junglerice	<i>Echinochloa colona</i>	2 to 6	12	16
Lovegrass (Stinkgrass)	<i>Eragrostis ciliaris</i>	2 to 6	12	16
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	12	16
Red Rice	<i>Oryza sativa</i>	1 to 3	12	16
Rygrass				
Hardy	<i>Lolium remotum</i>	2 to 6	12	16
Italian	<i>Lolium multiflorum</i>	2 to 6	12	16
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	12	16
Shattercane	<i>Sorghum bicolor</i>	6 to 18	12	16
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	12	16
Sprangletop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	12	16
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	12	16
Mexican	<i>Leptochloa uninervia</i>	2 to 6	12	16
Red	<i>Leptochloa filiformis</i>	2 to 6	12	16

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**RECOMMENDATIONS FOR ANNUAL GRASSES**  
(EXCEPT FOR IN ESTABLISHED ALFALFA AND MINT) (continued)

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT* (inches)	RATE FL. OZ./ ACRE	HIGH RATE <sup>(4)</sup>
Texas Panicum	<i>Panicum texanum</i>	2 to 6	12	16
Volunteer Cereals <sup>(3)</sup>				
Barley	<i>Hordeum vulgare</i>	2 to 6	12	16
Oats	<i>Avena sativa</i>	2 to 6	12	16
Rye	<i>Secale cereale</i>	2 to 6	12	16
Wheat	<i>Triticum aestivum</i>	2 to 6	12	16
Volunteer Corn <sup>(2)</sup>	<i>Zea mays</i>	4 to 12	8	12
Volunteer Corn (S.R.) <sup>(1)</sup>	<i>Zea mays</i>	4 to 12	16 (suppression only)	
Volunteer Corn <sup>(2)</sup>	<i>Zea mays</i>	12 to 18	10	14
Volunteer Corn <sup>(2)</sup>	<i>Zea mays</i>	18 to 24	12	16
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	12	16
Wild Oats	<i>Avena fatua</i>	2 to 6	12	16
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	12	16
Witchgrass	<i>Panicum capillare</i>	2 to 8	12	16
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	12	16

\*Generally occurs between 3-leaf stage and tillering.

\*\*Length of lateral growth.

<sup>(1)</sup> Sethoxydim resistant volunteer corn.

<sup>(2)</sup> Includes Roundup Ready®, Liberty Link® and IMI-CORN® volunteer corn.

<sup>(3)</sup> When a cereal grain crop (such as wheat) is interseeded for crop establishment or is planted as wind breaks to aid crop establishment, the minimum V-10137 1.0 EC use rate for control is 16 fl. oz./A.

<sup>(4)</sup> Rates higher than 16 fl. oz./A may be applied in certain geographic areas, cropping situations, or environmental conditions, where experience has shown that higher rates are needed for satisfactory control of annual grasses. In these situations, rates from 16 to 32 fl. oz./A may be applied. Do not apply more than 16 fl. oz./A of V-10137 1.0 EC per application to the following crops: garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 12 fl. oz./A of V-10137 1.0 EC per application to canola or mustard seed.

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**RECOMMENDATIONS FOR ANNUAL & PERENNIAL GRASS CONTROL  
IN ESTABLISHED ALFALFA AND MINT WITH V-10137 1.0 EC**

**GRASS SPECIES**

	<b>WEED STAGE</b>	<b>RATE FL. OZ. ACRE</b>	<b>HIGH RATE</b>
Annual & Perennial Grasses Listed in Grass Table	See Table	20	32

**Mowing:** The best control of annual grasses can be achieved by applying V-10137 1.0 EC before grass weeds are mowed. Once a grass is mowed it becomes tougher to control, as much of the available leaf surface has been removed. In areas without a killing frost, some annuals can over-winter after having been mowed multiple times. These grasses form large crowns and may contain many viable buds. These grasses, even though they may be an annual grass, may require repeated applications of V-10137 1.0 EC for partial or complete control.

**Irrigated Alfalfa and Mint:** Irrigation practices can be very critical to the successful use of V-10137 1.0 EC in established alfalfa and mint and may be necessary to initiate active growth of the weeds prior to application. Generally applications 2 to 4 days after an irrigation are most effective. Irrigation made shortly after application (2 days) can be effective, but more consistent grass control occurs when the irrigation is made before the application.

**Aerial Application:** Apply V-10137 1.0 EC in a minimum of 10 GPA in established alfalfa and mint when applying by air.

**Annual Grass Control:** Apply V-10137 1.0 EC at the grass sizes indicated in the Recommendation for Annual Grass Table and rates indicated. If a grass has been cut, apply V-10137 1.0 EC after active growth has resumed and regrowth has reached the minimum height and before it reaches the maximum height indicated. Apply before the alfalfa/mint canopy covers the grasses and interferes with the spray coverage. Some annual grasses are spring- and summer- germinating plants, while others are fall-germinating plants, and the time they are actively growing and most susceptible to V-10137 1.0 EC may vary from region to region. Also some annuals germinate over an extended period of time, and because control of small grasses is desired, applications after each weed flush may be required. As a general rule spray spring and summer germinating grasses as early in the season as possible, after initial green-up. Spray fall -germinating weeds in the fall soon after they begin growing but before any damage is done due to frost. Late fall applications may be less effective due to environmental conditions, such as frost, slower plant growth, or the onset of flowering.

**Perennial Grass Control:** V-10137 1.0 EC effectively controls perennial grasses such as bermudagrass, Johnsongrass, quackgrass, wirestem muhly, tall fescue, foxtail barley and orchardgrass. Due in part to lack of tillage, perennial grasses are more difficult to control in a perennial crop such as established alfalfa or mint. A program of repeated applications is usually necessary for best results. The best way to control perennial grasses is to do so in the year of stand establishment before rhizomes and stolons become large and difficult to kill.

Use the high rate under heavy grass pressure and/or when grasses are at or near maximum height.

Always add a crop oil concentrate at 1 qt./A by ground or 1%v/v (but not less than 1 pt./A) to the finished spray volume by air.

**RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL  
WITH V-10137 1.0 EC**

<b>GRASS SPECIES</b>	<b>WEED STAGE</b>	<b>RATE FL. OZ. ACRE</b>	<b>HIGH RATE</b>
Annual Bluegrass (Poa annua)	to 4-leaf	12*	32

Apply under favorable soil moisture and humidity which exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).

Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.

Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.

Always add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.

\*Use a minimum of 17 fl. oz./A to control annual bluegrass in seedling and established alfalfa and mint.

**DIRECTIONS FOR REDUCED RATE USE IN  
 DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET  
 RECOMMENDATIONS FOR SMALL ANNUAL GRASSES  
 (REDUCED RATE RECOMMENDATIONS NOT FOR USE IN CALIFORNIA)**

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Regrowth by tillering may occur if application is made when plants are stressed by lack of moisture, excessive moisture, low or high temperatures and/or under very low humidity.

GRASS SPECIES	SCIENTIFIC NAME	WEED HEIGHT (Inches)	RATE FL.OZ./ ACRE <sup>(1)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 4	8
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	1 to 4	10
Crabgrass			
Large	<i>Digitaria sanguinalis</i>	1 to 3*	8
Large	<i>Digitaria sanguinalis</i>	1 to 4*	10
Smooth	<i>Digitaria ischaemum</i>	1 to 3*	8
Smooth	<i>Digitaria ischaemum</i>	1 to 4*	10
Southern	<i>Digitaria ciliar</i>	1 to 4*	10
Fall Panicum	<i>Panicum dichotomiflorum</i>	1 to 4	8
Foxtail			
Giant	<i>Setaria faberi</i>	1 to 4	8
Green	<i>Setaria viridis</i>	1 to 4	8
Millet	<i>Setaria italica</i>	1 to 4	10
Yellow	<i>Setaria glauca</i>	1 to 4	8
Seedling Johnsongrass	<i>Sorghum halepense</i>	1 to 6	10
Shattercane	<i>Sorghum bicolor</i>	4 to 10	8
Texas Panicum	<i>Panicum texanum</i>	1 to 4	10
Volunteer Cereals			
Barley	<i>Hordeum vulgare</i>	1 to 4	10
Oats	<i>Avena sativa</i>	1 to 4	10
Wheat	<i>Triticum aestivum</i>	1 to 4	10
Volunteer Corn**	<i>Zea mays</i>	4 to 12	8
Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 6	8
Wild Oats	<i>Avena fatua</i>	1 to 4	10

\*Length of lateral growth

\*\*Not S.R. Corn

<sup>(1)</sup>Always add a crop oil concentrate at 1 qt./A by ground application, to the finished spray volume, unless crop specific restrictions and limitations advise otherwise.

### RECOMMENDATIONS FOR PERENNIAL GRASSES

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.
- Do not apply more than 16 fl. oz./A of V-10137 1.0 EC per application to the following crops: garden beets, carrots, radish (and other root vegetables), green onions, leaf lettuce, broccoli, cabbage, cauliflower (and other head and stem brassica vegetables), celery, rhubarb (and other leaf petioles), cranberry, cucurbits, fruiting vegetables (except tomatoes), non-bearing food crops, flax and strawberry. Do not apply more than 12 fl. oz./A of V-10137 1.0 EC per application to canola or mustard seed.

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL. OZ./ ACRE	HIGH RATE
<b>Bermudagrass (<i>Cynodon dactylon</i>)</b>			
First Application	3 (or up to 6" runners)	16	24
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	16	24
<b>Fescue, Tall (<i>Festuca arundinacea</i>)</b>			
First Application	4 to 8	16	24
Repeat Application(s) (if regrowth occurs)	4 to 8	16	24
<b>Foxtail Barley (<i>Hordeum jubatum</i>)</b>			
First Application	2 to 6	16	24
Repeat Application (if regrowth occurs)	2 to 6	16	24
<b>Orchardgrass (<i>Dactylis glomerata</i>)</b>			
First Application	4 to 8	16	24
Repeat Application(s) (if regrowth occurs)	4 to 8	16	24
<b>Quackgrass* (<i>Elytrigia repens</i>)</b>			
First Application	4 to 12	16	24
Repeat Application(s) (if regrowth occurs)	4 to 12	16	24
<b>Rhizome Johnsongrass (<i>Sorghum halepense</i>)</b>			
First Application	12 to 24	16	24
Repeat Application(s) (if regrowth occurs)	6 to 18	12	16
<b>Wirestem Muhly (<i>Muhlenbergia frondosa</i>)</b>			
First Application	4 to 8	16	24
Repeat Application(s) (if regrowth occurs)	4 to 8	16	24
<b>Perennial Bluegrass</b>			
[Roughstalk ( <i>Poa trivialis</i> )]			
[Kentucky ( <i>Poa pratensis</i> )]			
First Application	2 to 4	16	24
Repeat Application(s)	2 to 4	16	24
<b>Bentgrass* (<i>Agrostis</i> spp.)</b>			
First Application	2 to 4	-	24
Repeat Application(s) (if regrowth occurs)	2 to 4	-	24

\*Control of quackgrass and perennial bluegrass with V-10137 1.0 EC may be enhanced by adding AMS at 2.5 to 4.0 lbs./A.

## **TANK MIXES**

### **GENERAL INFORMATION**

The labels for each of the herbicides recommended for tank mixing with V-10137 1.0 EC are unique to the characteristics of those products and contain restrictions and limitations that may be more restrictive than the V-10137 1.0 EC label in certain considerations. Those concerns may include, but are not limited to:

1. Geographic restrictions - all products are not registered for use in all areas and rates may vary from one region of labeled use to another;
2. Crop rotation restrictions;
3. Applicator certification requirements;
4. Worker safety rules (e.g. protective clothing, reentry time, posting);
5. Soil type or soil characteristics (e.g. pH, OM);
6. Maximum dosage or number of applications per season;
7. Rain free period required; or
8. Application timing (e.g. pre-harvest interval)
9. Do not exceed the total season rates.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

### **TANK MIX APPLICATION OF V-10137 1.0 EC AND BROADLEAF HERBICIDES FOR CONTROL OF GRASSES AND BROADLEAF WEEDS**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply when the first grass or broadleaf weed species in a mixed population reaches the recommended height or growth stage for treatment.
- Apply under favorable soil moisture and humidity that exist a few days after rainfall or within seven days after irrigation.
- Always add the appropriate adjuvant to the spray mix at the rate recommended for each specific tank mix combination.
- Tank mix applications may sometimes result in reduced grass control and possible increases in crop injury as compared to either product used alone. If regrowth occurs, or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC, as specified in the respective size and rate tables.
- Do not tank mix V-10137 1.0 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.

### MIXING INSTRUCTIONS

1. Fill clean spray tank 1/2 to 2/3 of desired level with clean water.
2. While agitating, add the correct amount of V-10137 1.0 EC. Agitation should create a rippling or rolling action on the water surface.
3. If tank mixing V-10137 1.0 EC with other labeled herbicides, add water soluble bags first, followed by dry formulations, flowables, emulsifiable concentrates and then solutions. Prepare no more spray mixture than is required for the immediate spray operation.
4. Add any required adjuvants (crop oil concentrate, non-ionic surfactant and/or nitrogen solution).
5. Fill spray tank to desired level with water. **Agitation should continue until all spray solution has been applied.**

Failure to agitate the spray solution may result in improper mixing of the herbicides and unsatisfactory weed control. Mixing and compatibility qualities should be verified by a jar test.

### INFORMATION ON ANTAGONISM

Tank mixes of V-10137 1.0 EC with postemergence broadleaf herbicides have shown some reduction or failure to control certain grass species which would have otherwise been controlled when V-10137 1.0 EC is applied alone. Activity of the postemergence broadleaf herbicide in the tank mix is not affected.

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## ALFALFA

**Table 1. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR ALFALFA**  
(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + 2,4-DB <sup>(4)</sup>	20 to 32 fl. oz. + Refer to 2,4-DB label	20 to 32 fl. oz. + Refer to 2,4-DB label	1%	1%
V-10137 1.0 EC + PURSUIT® DG <sup>(5)</sup> or PURSUIT <sup>(5)</sup>	20 to 32 fl. oz. + 1.08 to 2.16 oz. or 3 to 6 fl. oz.	-	1%	1%
V-10137 1.0 EC + BUCTRIL® 2L <sup>(6)</sup> or BUCTRIL GEL <sup>(6,7)</sup>	20 to 32 fl. oz. + 1.0 to 1.5 pts. or 0.5 to 0.75 pt.	-	0.5%	0.5%

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(4)</sup>V-10137 1.0 EC plus 2,4-DB may increase the severity of crop injury when tank mixed. Alfalfa plants will generally outgrow this temporary crop injury within a few weeks.

<sup>(5)</sup>Before using this tank mix, read and understand the PURSUIT or PURSUIT DG labels for geographical restrictions and restrictions regarding alfalfa growth stage and type. Failure to do so can result in crop injury to alfalfa. Do not feed, graze, or harvest alfalfa for 30 days following an application of PURSUIT to alfalfa.

<sup>(6)</sup>In the states of Washington, Oregon, Idaho, Montana, Wyoming, Colorado, Utah, Nevada, and the western halves of North Dakota, South Dakota, Nebraska and Kansas: The V-10137 1.0 EC plus BUCTRIL or BUCTRIL GEL tank mix must be applied in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 2 trifoliates. Unacceptable crop injury may occur to alfalfa seedlings less than the 2 trifoliolate leaf stage. V-10137 1.0 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 80°F at and 3 days following application can result in unacceptable crop injury. In the states not listed above, apply in the fall or spring to seedling alfalfa when the majority of the field has a minimum of 4 trifoliolate leaves. When alfalfa stand is uneven and conditions favor leafburn, unacceptable crop injury may occur to alfalfa in the 2 trifoliolate or smaller stage of growth. V-10137 1.0 EC plus BUCTRIL or BUCTRIL GEL applications made when temperatures are expected to exceed 70°F at and 3 days following application can result in unacceptable crop injury. Crop leaf burn can occur following V-10137 1.0 EC plus BUCTRIL or BUCTRIL GEL application. Warm, humid conditions may enhance leaf burn. New crop growth will not be affected.

<sup>(7)</sup>Do not apply when alfalfa is under moisture, temperature, insect or disease stress or has been stressed by other pesticide carryover or application.



## CANOLA

**Table 2. REDUCED RATE V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR CANOLA (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT	APPLICATION RATES/ACRE			
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	AMMONIUM SULFATE	
			GROUND	AIR
V-10137 1.0 EC <sup>(2)</sup> + LIBERTY <sup>(3)</sup>	8 to 10 fl. oz. + 28 to 34 fl. oz.	-	3.0 lb./A	3.0 lb./A

<sup>(1)</sup> Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN, AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES table.

<sup>(2)</sup> Do not apply V-10137 1.0 EC tank mix during or after bolting or flowering or crop injury will occur.

<sup>(3)</sup> For use only on LibertyLink® Canola

## COTTON

**Table 3. V-10137 1.0 EC TANK MIXED WITH COBRA® AND MSMA APPLIED POST DIRECTED TO COTTON**

PRODUCT <sup>(1)</sup>	APPLICATION RATES/ACRE <sup>(2)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> V/V	COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	
V-10137 1.0 EC <sup>(4)</sup> + COBRA + MSMA (4.0 lbs./gal.) or MSMA (6.6 lbs./gal.)	12 to 16 fl. oz.	16 to 32 fl. oz.	1%	Reduce broadcast rate in proportion to the band area actually treated.
	See COBRA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the V-10137 1.0 EC label for weed height and species controlled.			
	See MSMA label for rates to control broadleaf weeds and height limitations for cotton. Refer to the V-10137 1.0 EC label for weed height and species controlled.			

<sup>(1)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(2)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(4)</sup>If at the time of application, grass height is so tall that post-directed applications cannot get good coverage over the top of the grassy weeds, then poor control may result and a second (non-post directed) application of V-10137 1.0 EC may be necessary.

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**COTTON** (continued)**Table 4. V-10137 1.0 EC TANK MIXED WITH BUCTRIL 4 EC TO CONTROL EMERGED WEEDS IN BXN COTTON AS A BROADCAST APPLICATION**

PRODUCT <sup>(1)</sup>	APPLICATION RATE/ACRE <sup>(2)</sup>		CROP OIL CONCENTRATE PER ACRE <sup>(3)</sup>	COMMENTS <sup>(7)</sup>
	ANNUAL GRASSES			
V-10137 1.0 EC + BUCTRIL 4 EC <sup>(4,5,6)</sup>	16 to 32 fl. oz.  See BUCTRIL 4 EC label for rates to control broadleaf weeds and height limitations for cotton.		1 qt.	See charts for grasses controlled

<sup>(1)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage.

<sup>(2)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC at the recommended rate with the appropriate amount of crop oil concentrate in a non-BUCTRIL tank mix.

<sup>(3)</sup>Always add a crop oil concentrate at 1 qt./A by ground in the finished spray solution.

<sup>(4)</sup>Applications of BUCTRIL 4 EC can be made only to cotton that has been genetically modified for crop tolerance to postemergence over-the-top applications of bromoxynil.

<sup>(5)</sup>Do not apply the V-10137 1.0 EC plus BUCTRIL tank mix within 75 days of harvest.

<sup>(6)</sup>Do not exceed 2 applications of BUCTRIL before cotton is 12 inches tall and 1 application after 12 inches tall.

<sup>(7)</sup>Use a minimum of 10 gals. of spray solution per acre.

**Table 5. V-10137 1.0 EC TANK MIXED WITH GLYPHOSATE TO CONTROL EMERGED GRASSES IN COTTON AS A BROADCAST APPLICATION**

PRODUCT	APPLICATION RATE/ACRE <sup>(1)</sup>		ADJUVANT		COMMENTS
	ANNUAL GRASSES	PERENNIAL GRASSES	Glyphosate formulation with built in adjuvant	Glyphosate formulation without built in adjuvant	
V-10137 1.0 EC + GLYPHOSATE	12 to 16 fl. oz.  See glyphosate label for rates to control broadleaf weeds and height limitations for cotton	16 to 32 fl. oz.	Ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier plus Glyphosate label adjuvant recommendation.	Ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier plus non-ionic surfactant @ 0.125 to 0.25% v/v.	See charts for grasses controlled.  Use a minimum of 10 gals. of spray solution per acre.

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC at the recommended rate with the appropriate amount of crop oil.

## DRY BEAN

**Table 6. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR DRY BEANS**  
(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + BASAGRAN®	16 to 20 fl. oz. + 1 to 2 pts.	20 to 32 fl. oz. + 1 to 2 pts.	1%	1%

<sup>(1)</sup> If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup> Broadleaf weed control may be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup> Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

## FLAX

**Table 7. REDUCED RATE V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR FLAX**  
(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT	APPLICATION RATES/ACRE			
	ANNUAL GRASSES <sup>(1)</sup>	PERENNIAL GRASSES	ADJUVANT <sup>(4)</sup>	
			GROUND	AIR
V-10137 1.0 EC + BRONATE ADVANCED™ <sup>(2, 3)</sup>	8 to 10 fl. oz. + 11.4 fl. oz.	-	AMS + NIS	AMS
V-10137 1.0 EC + BRONATE® <sup>(2, 3)</sup>	8 to 10 fl. oz. + 0.9 pt.	-	AMS + NIS	AMS
V-10137 1.0 EC + BUCTRIL <sup>(2, 3)</sup>	8 to 10 fl. oz. + 1.0 pt.	-	AMS + NIS	AMS
V-10137 1.0 EC + MCPA <sup>(2, 3)</sup>	8 to 10 fl. oz. + 0.25 to 0.5 pt.	-	AMS + NIS	AMS

<sup>(1)</sup> Annual grasses and sizes controlled with these tank mixtures are those that are identified in the DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN, AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES table.

<sup>(2)</sup> Do not apply V-10137 1.0 EC tank mix during or after the bud stage or to ornamental flax or crop injury may occur.

<sup>(3)</sup> Do not apply tank mixes if temperatures are expected to exceed 85°F at (or 3 days following) application or crop injury may occur.

<sup>(4)</sup> Ammonium sulfate (AMS) at 2.4 to 4.0 lb./A plus non-ionic surfactant (NIS) at 0.125% v/v is recommended for ground applications. Only ammonium sulfate at 2.5 to 4.0 lbs./A is recommended for air application.

## SOYBEAN

**Table 8. V-10137 1.0 EC TANK MIXES<sup>(3)</sup> TO CONTROL ANNUAL GRASSES WHEN USED AS A BURNDOWN IN NO-TILL SOYBEANS**

PRODUCT	PRODUCT RATE/ACRE <sup>(1)</sup>	GRASS HEIGHT (Inches)	CROP OIL CONCENTRATE /ACRE <sup>(2)</sup>	28%N or 32%N QTS./A or 2.5 TO 4.0 LBS. AMS
V-10137 1.0 EC + 2,4-D ester <sup>(3)</sup>	6 fl. oz.	Foxtail 1 to 3 Fall Panicum 1 to 3	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS
	8 fl. oz.	Foxtail 1 to 4 Fall Panicum 1 to 4	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS
	12 to 16 fl. oz. + 0.5 lb. ai	(See Grass Chart for grasses claimed)	1 qt.	1 to 2 qts./A or 2.5 to 4.0 lbs. AMS

\*2,4-D ester should not be used where drift sensitive crops may be grown.

<sup>(1)</sup>If regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC according to the appropriate size and rate recommendations.

<sup>(2)</sup>Always use a crop oil concentrate with at least 15% emulsifier at the listed rate in the finished spray volume.

<sup>(3)</sup>The following products can be tank mixed with V-10137 1.0 EC plus 2,4-D Ester: VALOR™, AUTHORITY® BROADLEAF, CANOPY XL®, DUAL® 8 E, DUAL II®, DUAL MAGNUM®, PROWL®, SENCOR® and SENCOR plus the DUAL products and TURBO®.

**Table 9. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to the recommendation tables above for specific grasses and growth stages.)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + COBRA	12 to 16 fl. oz. + 12.5 fl. oz.	16 to 32 fl. oz. + 12.5 fl. oz.	0.5 to 1%	1%
V-10137 1.0 EC + BASAGRAN 4 SL	16 to 20 fl. oz. + 1 to 2 pts.	20 to 32 fl. oz. + 1 to 2 pts.	1%	1%
V-10137 1.0 EC + Glyphosate (For use on Roundup Ready soybeans only)	12 to 16 fl. oz. + 0.75 to 3.0 lb. ai.	16 to 32 fl. oz. + 0.75 to 3.0 lb. ai.	0.5 to 1% <sup>(4)</sup>	1% <sup>(4)</sup>
V-10137 1.0 EC + BLAZER® 2 SL	12 to 16 fl. oz. + 1 to 1.5 pts.	16 to 32 fl. oz. + 1 to 1.5 pts.	0.5 to 1%	1%

continued

**Table 9. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
 (Refer to the recommendation tables above for specific grasses and growth stages) (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + FLEXSTAR HL <sup>(6)</sup>	12 to 16 fl. oz.  Refer to the FLEXSTAR HL label for specific application rates.	16 to 32 fl. oz.  Refer to the FLEXSTAR HL label for specific application rates.	1%	1%
V-10137 1.0 EC + CLASSIC® 25 DG	16 to 20 fl. oz. + 0.5 to 0.75 oz.	20 to 32 fl. oz. + 0.5 to 0.75 oz.	1%	1%
V-10137 1.0 EC <sup>(4)</sup> + PURSUIT 70 DG	12 to 16 fl. oz. + 1.44 oz.	16 to 32 fl. oz. + 1.44 oz.	1%	1%
V-10137 1.0 EC <sup>(5)</sup> + COBRA + CLASSIC 25 DG	16 to 20 fl. oz. + 6 to 8 fl. oz. + 0.5 to 0.75 oz.	-	0.5%	1%
V-10137 1.0 EC <sup>(5)</sup> + COBRA + BASAGRAN 4 SL	16 to 20 fl. oz. + 6 to 10 fl. oz. + 1 to 1.5 pts.	-	0.5%	1%
V-10137 1.0 EC <sup>(5)</sup> + COBRA + PURSUIT 70 DG	16 to 20 fl. oz. + 6 to 10 fl. oz. + 1.44 oz.	-	0.5%	1%

continued

**Table 9. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
 (Refer to the recommendation tables above for specific grasses and growth stages) (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC <sup>(5)</sup> + STORM®	16 to 20 fl. oz. + 1.5 pts.	-	0.5%	1%
V-10137 1.0 EC <sup>(5)</sup> + RESOURCE® + PURSUIT 70 DG	16 to 20 fl. oz. + 4 fl. oz. + 1.44 oz.	-	1%	1%
V-10137 1.0 EC <sup>(5)</sup> + RESOURCE + BASAGRAN	16 to 20 fl. oz. + 4 fl. oz. + 1 pt.	-	1%	1%
V-10137 1.0 EC <sup>(5)</sup> + RESOURCE + CLASSIC	16 to 20 fl. oz. + 4 fl. oz. + 0.5 oz.	-	1%	1%
V-10137 1.0 EC <sup>(5)</sup> + COBRA + RESOURCE	12 to 16 fl. oz. + 6 fl. oz. + 4 fl. oz.	-	0.5%	1%
V-10137 1.0 EC <sup>(5)</sup> + FIRSTRATE®	12 to 16 fl. oz. + 0.3 oz.	16 to 32 fl. oz. + 0.3 oz.	1%	-
V-10137 1.0 EC <sup>(5)</sup> + COBRA + FIRSTRATE	12 to 16 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	16 to 32 fl. oz. + 6 to 8 fl. oz. + 0.3 oz.	1%	-
V-10137 1.0 EC <sup>(5)</sup> + RAPTOR® (1 AS)	12 to 16 fl. oz. + 4 to 5 fl. oz.	-	1%	-

continued

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**Table 9. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN**  
(Refer to the recommendation tables above for specific grasses and growth stages) (continued)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> V/V	
			GROUND	AIR
V-10137 1.0 EC <sup>(5)</sup> + COBRA + RAPTOR (1 AS)	12 to 16 fl. oz. + 6 to 8 fl. oz. + 4 to 5 fl. oz.	-	1%	-
V-10137 1.0 EC <sup>(5)</sup> + SYNCHRONY® STS™	12 to 16 fl. oz. <sup>(7)</sup> + 0.5 oz.	-	1 qt.	-
V-10137 1.0 EC <sup>(5)</sup> + COBRA + SYNCHRONY STS™	12 to 16 fl. oz. <sup>(7)</sup> + 4 to 8 fl. oz. + 0.5 oz.	-	1 pt.	-
V-10137 1.0 EC <sup>(5)</sup> + RESOURCE	12 to 16 fl. oz. + 4 to 12 fl. oz.	-	1 qt.	-
V-10137 1.0 EC <sup>(5)</sup> + FRONTROW™	16 to 20 fl. oz. + Refer to FRONTROW label for use rates	-	1%	-
V-10137 1.0 EC + FIRSTRATE + FLEXSTAR HL <sup>(5)</sup>	12 to 16 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	16 to 32 fl. oz. + 0.3 oz. + Refer to the FLEXSTAR HL label for specific application rates.	1%	-

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(4)</sup>The addition of 8.5 to 17 lbs. of ammonium sulfate per 100 gals. of spray solution is required when V-10137 1.0 EC is tank mixed with glyphosate. If the glyphosate formulation has a stand alone built in adjuvant, only ammonium sulfate plus the adjuvant on the glyphosate label is recommended. If the glyphosate formulation does not have a built in adjuvant system, add 0.125 to 0.25% non-ionic surfactant plus ammonium sulfate (8.5 to 17 lbs. per 100 gals. of spray solution), or add crop oil concentrate at 0.5% v/v plus ammonium sulfate.

<sup>(5)</sup>The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is recommended when V-10137 1.0 EC is tank mixed with PURSUIT, RESOURCE, STORM, FIRSTRATE, SYNCHRONY, RAPTOR, FRONTROW, COBRA plus CLASSIC, COBRA plus BASAGRAN, COBRA plus PURSUIT, COBRA plus FIRSTRATE, COBRA plus SYNCHRONY and COBRA plus RAPTOR. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

<sup>(6)</sup>Refer to FLEXSTAR HL label for geographic and rotational restrictions.

<sup>(7)</sup>Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES** table.



# **SOYBEAN** (continued)

**Table 10. REDUCED RATE V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR SOYBEAN (Refer to table for reduced rate use in dry bean, canola, flax, mustard seed, soybean, and sugar beet recommendations for small annual grasses for specific grasses and growth stages)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES <sup>(2)</sup>	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3,4)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + FIRSTRATE	8 to 16 fl. oz. + 0.3 oz.	-	1%	1%
V-10137 1.0 EC + PURSUIT 70 DG	8 to 12 fl. oz. + 1.44 oz.	-	1%	1%

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Annual grasses and sizes controlled with these tank mixtures are those that are identified in the **DIRECTIONS FOR REDUCED RATE USE IN DRY BEAN, CANOLA, FLAX, MUSTARD SEED, SOYBEAN AND SUGAR BEET RECOMMENDATIONS FOR SMALL ANNUAL GRASSES** table.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(4)</sup>The addition of 1 to 2 qts./A of liquid fertilizer (10-34-0, 28%N, or 32%N) is required when V-10137 1.0 EC is tank mixed at reduce rates. An equivalent amount (2.5 to 4.0 lbs./A) of spray grade ammonium sulfate (AMS) may be added in place of liquid fertilizer. Fertilizer adjuvants are to be added in addition to the crop oil concentrate.

## PEANUT

**Table 11. V-10137 1.0 EC TANK MIXES WITH BROADLEAF HERBICIDES FOR PEANUT**  
(Refer to the recommendation tables above for specific grasses and growth stages.)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + BASAGRAN	16 to 20 fl. oz. + 1.0 to 2.0 pts.	-	1%	1%
V-10137 1.0 EC + BLAZER	16 to 20 fl. oz. + 0.5 to 1.5 pts.	-	1%	1%
V-10137 1.0 EC + STORM	16 to 20 fl. oz. + 1.5 pts.	-	1%	1%

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

RECOMMENDATIONS FOR GRASS SUPPRESSION FOR HARVEST EFFICIENCY IN PEANUT WITH V-10137 1.0 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height charts "RECOMMENDATIONS FOR ANNUAL GRASSES & "RECOMMENDATIONS FOR PERENNIAL GRASSES"	Up to and including grasses in the seed head stage	32	64
Do not apply as part of a tank mix when applying V-10137 1.0 EC for grass suppression.			
Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.			

## SUGAR BEET

**Table 12. V-10137 1.0 EC TANK MIXED WITH STINGER® APPLIED TO SUGAR BEET**  
(Refer to the recommendation tables above for specific grasses and growth stages)

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
V-10137 1.0 EC + STINGER	12 to 16 fl. oz.	16 to 32 fl. oz.	1%	1%
	See STINGER label for rates.			

<sup>(1)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Broadleaf weed control may be reduced when grass populations are tall enough or dense enough to intercept the spray pattern and

prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

**Table 13. V-10137 1.0 EC TANK MIXED WITH BETAMIX® or BETANEX® APPLIED TO SUGAR BEET**

PRODUCT <sup>(2)</sup>	WEEDS CONTROLLED		WEED HEIGHT (inches)	APPLICATION RATE / ACRE <sup>(1)</sup>
	COMMON NAME	SCIENTIFIC NAME		
V-10137 1.0 EC <sup>(3)</sup> + BETAMIX or BETANEX	Barnyardgrass	<i>Echinochloa crus-galli</i>	1 to 3	16 fl. oz.
	Foxtail	<i>Setaria</i> spp.	1 to 3	
	Foxtail Millet	<i>Setaria italica</i>	1 to 3	
	Wild Oat	<i>Avena fatua</i>	1 to 3	
	Wild Proso Millet	<i>Panicum miliaceum</i>	1 to 3	See BETAMIX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>  See BETANEX label for rates to control broadleaf weeds. <b>No additives are recommended in the tank mix.</b>

<sup>(1)</sup>Do not use crop oil concentrate. No additives are recommended in the tank mix. If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix herbicide), according to the appropriate size and rate recommendations.

<sup>(2)</sup>Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(3)</sup>If grass regrowth occurs or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC at full label rate with appropriate rate of crop oil concentrate.

**TABLE 14. V-10137 1.0 EC PLUS BETANEX OR BETAMIX TANK MIX FOR THREE SEQUENTIAL APPLICATIONS FOR ANNUAL GRASS CONTROL (MICRO RATE APPLICATION)**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>			
	ANNUAL GRASSES	GRASSES CONTROLLED (inches)	METHYLATED SEED OIL <sup>(2)</sup> (V/V)	
			GROUND	AIR
V-10137 1.0 EC + BETANEX or BETAMIX	4 to 6 fl. oz. + 0.8 to 12 fl. oz. <sup>(3)</sup> or 0.8 to 12 fl. oz. <sup>(3)</sup>	Green Foxtail (1-2) Yellow Foxtail (1-2) Barnyardgrass (1-2) Wild Oat (1-2) Volunteer Cereals (1-2)	1.5%	1.5%

<sup>(1)</sup> Broadleaf weed control may be reduced when grass populations are tall or dense enough to intercept the spray pattern and prevent them from receiving complete coverage. Tank mixing is not recommended in these situations.

<sup>(2)</sup> Always use a methylated seed oil at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(3)</sup> Use 16 fl. oz./A rate when sugar beet are in the cotyledon to 4-leaf stage. Rate can be increased up to 24 fl. oz./A when the smallest sugar beet plants in the field are in the 4-true leaf stage or larger.

#### **Directions for Use for Micro-Rate Applications to Sugar Beet**

##### **General Information**

Multiple micro-rate applications of V-10137 1.0 EC in tank mixtures with reduced rates of BETANEX or BETAMIX and methylated seed oils may be applied by air or ground equipment to sugar beet to control early germinating annual grasses listed above. The rate of BETANEX or BETAMIX must not exceed 0.12 lb. ai./A (broadcast application) when in combination with these spray adjuvants. Note that maximum rate allowed varies depending on crop growth stage. The use of wetting agents or spray adjuvants with conventional rates (0.73 to 1.22 lb. ai./A) or multiple low rate (0.24 to 0.73 lb. ai./A) applications of BETANEX or BETAMIX is prohibited on the BETANEX and BETAMIX master label. Favorable climatic conditions (good conditions for plant growth and development) are essential for adequate weed control. All use precautions and restrictions on the BETANEX and BETAMIX master labels must be followed.

##### **Directions for Using Micro-Rate Multiple Applications of V-10137 1.0 EC Tank Mixes**

Apply V-10137 1.0 EC in broadcast applications only at a rate of 4 to 6 fl. oz./A in tank mixture with either BETANEX or BETAMIX following the Directions for Use on the tank mix partner label. A minimum of 3 sequential applications of 4 fl. oz./A or a minimum of 2 sequential applications of 6 fl. oz./A should be utilized for V-10137 1.0 EC tank mixtures. A minimum of 3 sequential applications of BETAMIX or BETANEX should be used. Accurate timing is essential; make initial application immediately after weeds emerge and make repeat applications on 5 to 7 day intervals. If weed control is not adequate due to climatic conditions, spray coverage or other factors, return to conventional application rates of V-10137 1.0 EC (12 to 16 fl. oz./A) and add rates of BETANEX or BETAMIX as directed on their label. When using conventional rates of BETANEX or BETAMIX in tank mixtures with V-10137 1.0 EC, a spray adjuvant is not recommended.

##### **Use Precautions for Micro-Rate Applications: (See V-10137 1.0 EC, BETANEX and BETAMIX master label for further use precautions.)**

Not all weeds will be adequately controlled, even with favorable climatic conditions. Conventional rates of V-10137 1.0 EC, BETANEX or BETAMIX and/or hand labor may be required if multiple micro-rate applications do not adequately control weeds. Plugging of spray nozzles may be encountered due to the potential for formation of a precipitate in the spray solution that is often associated with micro-rate applications. Valent will not be responsible for any nozzle plugging that may occur with the use of multiple micro-rate applications. Methylated seed oils must not be added if the BETANEX or BETAMIX rate exceeds 0.12 lb. ai./A broadcast, as the addition of methylated seed oils could increase the possibility of crop injury at dosage rates greater than 0.12 lb. ai./A.

##### **GROUND APPLICATION**

Use of sufficient spray volumes and pressure is essential to ensure complete coverage. Use a minimum of 10 gals. and a maximum of 20 gals. of spray solution per acre. Spray pressures should reflect a minimum of 30 psi and a maximum of 60 psi at the nozzle. Do not use flood nozzles.

##### **AERIAL APPLICATION**

Use of sufficient spray volumes is essential to ensure complete coverage. Use a minimum of 5 gals. and a maximum of 15 gals. of spray solution per acre.

**Table 15. TANK MIX APPLICATION OF V-10137 1.0 EC AND FUNGICIDES FOR CONTROL OF GRASS WEEDS AND DISEASES IN SUGAR BEET**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>		
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE <sup>(3)</sup> (V/V)
V-10137 1.0 EC + EMINENT®	12 to 16 fl. oz. + 13 fl. oz.	16 to 32 fl. oz. + 13 fl. oz.	1%

<sup>(1)</sup> If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix fungicide) according to the appropriate size and rate recommendations.

<sup>(2)</sup> Refer to V-10137 1.0 EC and fungicide label for rates and weeds and diseases controlled.

<sup>(3)</sup> Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

**Table 16. TANK MIX APPLICATION OF V-10137 1.0 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, PEANUT, SOYBEAN AND SUNFLOWER**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
V-10137 1.0 EC + ORTHENE® 75 S or ORTHENE 97	12 to 16 fl. oz. + 0.33 to 1.33 lbs. 0.25 to 1.0 lb.	16 to 32 fl. oz. + 0.33 to 1.33 lbs. 0.25 to 1.0 lb.	1%		X	X	X		
V-10137 1.0 EC + ORTHENE 90 S <sup>(6)</sup>	12 to 16 fl. oz. + 0.25 to 1 lb.	16 to 32 fl. oz. + 0.25 to 1 lb.	1%		X	X	X	X	
V-10137 1.0 EC + DANITOL® 2.4 EC	12 to 16 fl. oz. + 10 2/3 to 16 fl. oz.	16 to 32 fl. oz. + 10 2/3 to 16 fl. oz.	1%		X		X		
V-10137 1.0 EC + ASANA XL®	12 to 16 fl. oz. + Refer to ASANA XL label	16 to 32 fl. oz. + Refer to ASANA XL label	1%						X
V-10137 1.0 EC + WARRIOR®	12 to 16 fl. oz. + Refer to WARRIOR label	16 to 32 fl. oz. + Refer to WARRIOR label	1%						X
V-10137 1.0 EC + WARRIOR	20 to 32 fl. oz. <sup>(7)</sup> + Refer to WARRIOR label	20 to 32 fl. oz. + Refer to WARRIOR label	1%	X					
V-10137 1.0 EC + BAYTHROID®	20 to 32 fl. oz. <sup>(7)</sup> + Refer to BAYTHROID label	20 to 32 fl. oz. + Refer to BAYTHROID label	1%	X					

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**Table 16. TANK MIX APPLICATION OF V-10137 1.0 EC AND INSECTICIDES FOR CONTROL OF GRASS WEEDS AND INSECTS IN ALFALFA, COTTON, PEANUT, SOYBEAN, AND SUNFLOWER (continued)**

PRODUCT <sup>(2)</sup>	APPLICATION RATES/ACRE <sup>(1)</sup>			CROP					
	ANNUAL GRASSES	PERENNIAL GRASSES	CROP OIL CONCENTRATE (V/V) <sup>(3)</sup>	Alfalfa <sup>(4)</sup>	Cotton	Mint <sup>(4,5)</sup>	Peanut	Soybean	Sunflower
V-10137 1.0 EC + DIMETHOATE	20 to 32 fl. oz. <sup>(7)</sup> + Refer to DIMETHOATE label	20 to 32 fl. oz. + Refer to DIMETHOATE label	1%	X					
V-10137 1.0 EC + LORSBAN®	20 to 32 fl. oz. <sup>(7)</sup> + Refer to LORSBAN label	20 to 32 fl. oz. + Refer to LORSBAN label	1 to 2 pt. <sup>(8)</sup>	X					
V-10137 1.0 EC + POUNCE®	20 to 32 fl. oz. <sup>(7)</sup> + Refer to POUNCE label	20 to 32 fl. oz. + Refer to POUNCE label	1%	X					

<sup>(1)</sup>If grass regrowth occurs, or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC alone (without a tank mix insecticide) according to the appropriate size and rate recommendations.

<sup>(2)</sup>Refer to V-10137 1.0 EC and insecticide label for rates and weeds and insects controlled.

<sup>(3)</sup>Always use a crop oil concentrate at the listed rate (but not less than 1 pt./A) in the finished spray volume.

<sup>(4)</sup>Certain insecticides may cause temporary phytotoxic symptoms on alfalfa and mint foliage. Refer to the insecticide label for further information. It is suggested that prior to using any of these insecticide/herbicide tank mixtures, that a small area of the field be treated first and observations for crop injury be made prior to treating the whole field.

<sup>(5)</sup>The V-10137 1.0 EC rate should be 12 to 16 fl. oz./A for annual grass control in baby mint, minimum of 16 fl. oz./A for annual grass control in established mint and 16 to 32 fl. oz./A for perennial grass control. Crop oil concentrate should be added at the rate of 1.0 to 2.0 pts./A.

<sup>(6)</sup>Insecticide tank mix use with ORTHENE 90 S in soybeans is permitted only in a state having an approved Section 24(c) registration for ORTHENE 90 S use in soybean.

<sup>(7)</sup>The V-10137 1.0 EC rate should be 12 to 16 fl. oz./A for annual grass control in seedling alfalfa.

<sup>(8)</sup>For the V-10137 1.0 EC plus LORSBAN tank mix, reduce the adjuvant rate down to 1.0 pt./A when the LORSBAN rate is 1.0 pt./A or higher.

**Table 17. RECOMMENDATIONS FOR ROUNDUP READY VOLUNTEER CORN CONTROL IN ROUNDUP READY SOYBEANS WITH V-10137 1.0 EC HERBICIDE TANK MIX**

ROUNDUP READY VOLUNTEER CORN HEIGHT (inches)	V-10137 1.0 EC RATE/ACRE	Glyphosate <sup>(1)</sup> rate for formulations <b>with</b> built in adjuvant	ADJUVANT
4 to 12	8 fl. oz.	1.0 to 2.0 lbs. ai./A (approximately equivalent to 22 to 44 fl. oz./A of Roundup Weather Max)	Ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier plus additional adjuvant recommended on glyphosate label.
12 to 18	10 fl. oz.		
18 to 24	12 fl. oz.		

ROUNDUP READY VOLUNTEER CORN HEIGHT (inches)	V-10137 1.0 EC RATE/ACRE	Glyphosate <sup>(1)</sup> rate for formulations <b>without</b> built in adjuvant	ADJUVANT
4 to 12	8 fl. oz.	Up to 2.0 lbs. ai./A (equivalent to 32 to 64 fl. oz./A of Roundup Original)	Ammonium sulfate @ 8.5 to 17 lbs. per 100 gals. of carrier plus additional adjuvant recommended on glyphosate label.
12 to 18	10 fl. oz.		
18 to 24	12 fl. oz.		

<sup>(1)</sup> Glyphosate formulation must be labeled for use on Roundup Ready soybeans.

**THE MOST RESTRICTIVE LABELING OF ANY PRODUCT USED IN A TANK MIX MUST BE FOLLOWED.**

- Apply only to actively growing grass and broadleaf weeds at recommended height or growth stage listed on each label.
- Apply under favorable soil moisture and humidity which exist a few days after rainfall or within seven days after irrigation.
- Tank mix applications may sometimes result in reduced grass control. If regrowth occurs, or an additional flush of new grass emerges, make a second application of V-10137 1.0 EC, as specified in the respective size and rate tables.
- Do not tank mix V-10137 1.0 EC when broadleaf weeds are tall and/or dense enough to prevent proper grass coverage.
- This tank mix may be applied postemergence to ROUNDUP Ready soybeans up through the full flowering stage. Do not apply less than 60 days before harvest.
- Avoid contact with foliage, green stems, or fruit crops, or any desirable plants and trees, other than soybeans with the ROUNDUP Ready gene as severe injury or destruction will result.
- Do not allow the V-10137 1.0 EC plus ROUNDUP to mist, drip, drift or splash onto desirable vegetation as minute quantities of the tank mix can cause severe damage or destruction to the crops, plants or other areas on which treatment was not intended. The likelihood of injury occurring from drift of this product is greatest when winds are gusty or in excess of 5 miles per hour. Even under lesser wind velocities, avoid conditions that allow spray drift to occur such as combinations of spray pressure and nozzle type that will result in fine particles (mist) that are likely to drift.

## FALLOW LAND

### DIRECTIONS FOR USE

V-10137 1.0 EC may be used to control annual and perennial grasses in land that has been left fallow the previous year and other non-producing agricultural areas. Apply V-10137 1.0 EC at 12 to 16 fl. oz./A for annual grasses and 16 to 32 fl. oz./A for perennial grasses. When both grass and broadleaf weeds are the target pest, V-10137 1.0 EC may be tank mixed with 2,4-D Ester or BANVEL® SGF for broad spectrum control. When both annual and perennial grasses occur in the same field, use a minimum of 16 fl. oz./A. V-10137 1.0 EC rate.

### GENERAL INFORMATION:

- Use a minimum spray volume of 5 gals./A for aerial applications and 15 gals./A for ground applications. Apply only to actively growing grasses when the first grass reaches the recommended weed height as specified by the Recommendations for Annual and Perennial Grasses section of this label.
- Annual grasses that emerge after the V-10137 1.0 EC application will not be controlled, and a second application may be necessary.
- The control of perennial grasses may require more than 1 application in non-tilled areas.
- Do not plant any crop for 30 days after application unless clethodim is registered for use in that crop.
- Do not apply to grasses that have tillered, formed seedheads or exceeded recommended growth stage.
- Do not use flood jet nozzles.
- Do not apply to drought stressed grasses.
- Do not mow area for 2 weeks prior to or after the V-10137 1.0 EC application.

**TABLE 18. V-10137 1.0 EC IN TANK MIXES TO CONTROL ANNUAL AND PERENNIAL GRASSES IN FALLOW LAND**

PRODUCT	APPLICATION RATES/ACRE <sup>(1)</sup>		CROP OIL CONCENTRATE <sup>(2)</sup> (V/V)	
	ANNUAL GRASSES	PERENNIAL GRASSES	GROUND	AIR
V-10137 1.0 EC + 2,4-D Ester or BANVEL SGF	12 to 16 fl. oz. + 0.5 lb./A or See BANVEL SGF label for rates.	16 to 32 fl. oz. + 0.5 lb./A or See BANVEL SGF label for rates	1%	1%

<sup>(1)</sup> Refer to V-10137 1.0 EC label for weed height and species control. Review BANVEL SGF and 2,4-D labels for crop restrictions, use rates and weeds controlled.

<sup>(2)</sup> Always use a crop oil concentrate or methylated seed oil containing at least 15% emulsifier at the listed rate (but not less than 1 pt./A) in the finished spray volume.

RECOMMENDATIONS FOR GRASS SUPPRESSION IN NON-CROP AREAS WITH V-10137 1.0 EC			
GRASS SPECIES	WEED STAGE	RATE FL. OZ./ ACRE	HIGH RATE
Annual and perennial grasses that exceed height claimed for control on height chart above.	Up to and including grasses in the seed head stage	24	32
Do not apply as part of a tank mix when applying V-10137 1.0 EC for grass suppression.			
Add a crop oil concentrate at 1 qt./A by ground to the finished spray volume.			



TABLE 19. V-10137 1.0 EC FOR THE CONTROL AND/OR SUPPRESSION OF TALL FESCUE IN NATIVE PRAIRIE WARM-SEASON GRASS RESTORATION PROJECTS

PRODUCT	PRODUCT RATE (fl. oz./A)	GRASS WEEDS CONTROLLED/SUPPRESSED		WEED STAGE
		Common Name	Scientific Name	
V-10137 1.0 EC	12 to 16	Tall Fescue	<i>Festuca arundinacea</i>	4 to 6 inches tall (40 to 60% green-up)
Adjuvant: V-10137 1.0 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lbs./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add V-10137 1.0 EC, then add crop oil concentrate.				

SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS
Burn or mow fields a minimum of 3 weeks prior to application to remove excess crop residue. Apply in the spring, at 40 to 60% tall fescue green-up, prior to emergence of warm-season grasses. Do not mow area for 2 weeks after the V-10137 1.0 EC application.
Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 PSI at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood jet nozzles.
Apply only to fields that have warm-season grasses established for 2 years. Applications of V-10137 1.0 EC to emerged warm-season grasses may cause injury. Do not apply to warm-season grasses grown for seed.
Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.
<b>NOTE:</b> V-10137 1.0 EC applications are most effective if applied when average nighttime temperatures are consistently greater than or equal to 47 degrees Fahrenheit.

TABLE 20. V-10137 1.0 EC FOR THE SUPPRESSION OF TALL FESCUE SEED-HEADS IN NON-PRODUCING AGRICULTURAL AREAS

PRODUCT	PRODUCT RATE/ACRE	SUPPRESSION	APPLICATION TIMING
V-10137 1.0 EC	3 to 4 fl. oz.	Tall Fescue Seed-Heads ( <i>Festuca arundinacea</i> )	(50 to 90% Tall Fescue green-up in the spring) or 3 weeks prior to dormancy in the fall.
ADJUVANT: V-10137 1.0 EC must be applied with crop oil concentrate at 1 qt./A, plus a spray grade ammonium sulfate at 2.5 to 4 lb./A. Recommended Mixing Order: Thoroughly mix spray grade ammonium sulfate in water, add V-10137 1.0 EC, then add crop oil concentrate. Note: Use crop oil concentrate at 2 pts./A with fall applications.			

**SPECIAL APPLICATION INSTRUCTIONS/PRECAUTIONS**

Apply at 50 to 90% tall fescue green-up.

Use the higher V-10137 1.0 EC rate if less tall fescue green matter is present.

Do not mow area for 2 weeks after the V-10137 1.0 EC application.

Apply in a minimum of 15 to 20 gals. of water per acre at a spray pressure of 40 to 60 psi at the nozzle. Apply using flat fan or hollow cone nozzles. Do not use flood nozzles.

2,4-D ester, Tordon 22K, Grazon P+D or Crossbow maybe added to this tank mix for broadleaf control (see 2,4-D ester label for weeds controlled)

Do not graze treated fields or feed treated forage and or hay to livestock. Do not plant any crop for 30 days after application, unless clethodim is registered for use in that crop.

5/1/59

## DIRECTIONS FOR USE IN ORNAMENTALS

For ornamental plant uses, V-10137 1.0 EC can be used to control labeled grass weeds in greenhouses, hothouses, shadehouses, and around outdoor ornamentals, including nurseries, parks, roadside plantings, and structure landscapes.

### IMPORTANT

V-10137 1.0 EC successfully controls weeds in newly transplanted and established non-grassy ornamentals. Plant tolerance to V-10137 1.0 EC at labeled rates has been found to be acceptable for the indicated genera and species listed below. Due to variability within species, crop growth stage, environmental conditions, and application techniques, it is recommended that the user determine if herbicide can be used safely on a few plants prior to widespread application. Neither the seller nor the manufacturer of V-10137 1.0 EC have investigated the safety factor to ornamental plants not listed on the label.

The following plants have shown a tolerance for V-10137 1.0 EC applications:

### ORNAMENTAL TREES

COMMON NAME	SCIENTIFIC NAME
ALDER, RED	<i>Alnus rubra</i>
ASH	<i>Fraxinus</i> spp.
BASSWOOD	<i>Tilia</i> spp.
BIRCH, EUROPEAN WHITE	<i>Betula pendula</i>
BIRCH, RIVER	<i>Betula nigra</i>
BIRCH, WHITE	<i>Betula papyrifera</i>
CRABAPPLE, FLOWERING	<i>Malus halliana</i>
DOGWOOD, FLOWERING	<i>Cornus florida</i>
GOLDEN CHAIN TREE	<i>Laburnum anagyroides</i>
MAPLES	<i>Acer</i> spp.
MULBERRY, WHITE	<i>Morus alba</i>
OAKS	<i>Quercus</i> spp.
OLIVE, WILD	<i>Elaeagnus angustifolia</i>
REDBUD, EASTERN	<i>Cercis canadensis</i>
SWEET GUM, AMERICAN	<i>Liquidambar styraciflua</i>

### GROUND COVERS

COMMON NAME	SCIENTIFIC NAME
BUGLEWEED, CARPET	<i>Ajuga reptans</i>
IVY, ENGLISH	<i>Hedera helix</i>
JAPANESE SPURGE	<i>Pachysandra terminalis</i>
LILYTURF	<i>Liriope muscari</i>
MONEYWORT	<i>Lysimachia nummularia</i>
MONDO GRASS, WHITE	<i>Ophiopogon jaburan</i>
MONDO GRASS DWARF	<i>Ophiopogon japonicus</i>
PERIWINKLE, LESSER	<i>Vinca minor</i>

## GARDEN FLOWERS AND PLANTS

COMMON NAME	SCIENTIFIC NAME
AGERATUM	<i>Ageratum</i> spp.
ALYSSUM*, SWEET	<i>Lobularia maritima</i>
ASPARAGUS FERN	<i>Asparagus setaceus</i>
BLEEDING HEART	<i>Dicentra spectabilis</i>
CAST IRON PLANT	<i>Aspidistra elatior</i>
CHRYSANTHEMUM	<i>Chrysanthemum</i> spp.
CINQUEFOIL	<i>Potentilla</i> spp.
COLEUS	<i>Coleus</i> spp.
CORALBELLS	<i>Heuchera sanguinea</i>
CRANESBILL	<i>Geranium</i> spp.
DAHLIA	<i>Dahlia</i> spp.
DAISY, TRAILING AFRICAN	<i>Osteospermum fruticosum</i>
DAYLILY	<i>Hemerocallis</i> spp.
DUSTY MILLER	<i>Senecio cineraria</i>
EUONYMUS	<i>Euonymus</i> spp.
GAZANIA	<i>Gazania</i> spp.
GERANIUM, HOUSE	<i>Pelargonium hortorum</i>
HEATHER, FALSE	<i>Cuphea hyssopifolia</i>
HOSTA	<i>Hosta fortunei</i>
IRIS	<i>Iris</i> spp.
JASMINE TOBACCO	<i>Nicotiana glauca</i>
LOOSESTRIFE	<i>Lythrum salicaria</i>
MARIGOLD	<i>Tagetes</i> spp.
PARTRIDGEBERRY	<i>Mitchella repens</i>
PETUNIA*	<i>Petunia hybrida</i>
PHLOX	<i>Phlox</i> spp.
PINKS	<i>Dianthus</i> spp.
PORTULACA	<i>Portulaca grandiflora</i>
SALVIA	<i>Salvia</i> spp.
SAXIFRAGE	<i>Saxifraga</i> spp.
SEDUM	<i>Sedum</i> spp.
SELLOUM	<i>Philodendron selloum</i>
SNAPDRAGON*	<i>Antirrhinum majus</i>
SWEET FLAG	<i>Acorus gramineus</i>
TICKSEED	<i>Coreopsis grandiflora</i>
TOUCH-ME-NOT	<i>Impatiens</i> spp.
VERBENA	<i>Verbena</i> spp.
VIOLET	<i>Viola</i> spp.
YARROW, COMMON	<i>Achillea millefolium</i>
ZINNIA	<i>Zinnia elegans</i>

\*Slight foliage or flower speckling has been observed on these species.

## SHRUBS

COMMON NAME	SCIENTIFIC NAME
ABELIA	<i>Abelia</i> spp.
ANISE, PURPLE	<i>Illicium floridanum</i>
AUCUBA	<i>Aucuba</i> spp.
AZALEA*	<i>Rhododendron</i> spp.
BAMBOO	<i>Bambusa</i> spp.
BARBERRY, JAPANESE	<i>Berberis thunbergii</i>
BARBERRY, MAGELLAN	<i>Berberis buxifolia</i>
BAYBERRY	<i>Myrica pensylvanica</i>
BOTTLEBRUSH	<i>Callistemon citrinus</i>
BOXWOOD, COMMON	<i>Buxus sempervirens</i>
CAMELLIA, COMMON	<i>Camellia japonica</i>
CANDYTUFT	<i>Iberis sempervirens</i>
CLEYERA	<i>Cleyera japonica</i>
CORALBERRY	<i>Ardisia crenata</i>
CRAPE MYRTLE	<i>Lagerstroemia indica</i>
COYOTE BRUSH	<i>Baccharis pilularis</i>
FIG, CREEPING	<i>Ficus pumila</i>
GARDENIA	<i>Gardenia</i> spp.
HOLLY	<i>Ilex</i> spp.
HONEYSUCKLE	<i>Lonicera</i> spp.
INDIAN HAWTHORN	<i>Raphiolepis indica</i>
JASMINE	<i>Jasminum</i> spp.
JASMINE, ASIATIC	<i>Trachelospermum asiaticum</i>
JASMINE, STAR	<i>Trachelospermum jasminoides</i>
JUNIPER	<i>Juniperus</i> spp.
LANTANA	<i>Lantana</i> spp.
NANDINA* BAMBOO, HEAVENLY	<i>Nandinia domestica</i>
OLEANDER, COMMON	<i>Nerium oleander</i>
OREGON GRAPE	<i>Mahonia aquifolium</i>
PHOTINIA	<i>Photinia</i> spp.
PITTOSPORUM	<i>Pittosporum</i> spp.
PODOCARPUS	<i>Podocarpus</i> spp.
PRIVET	<i>Ligustrum</i> spp.
PYRACANTHA	<i>Pyracantha</i> spp.
RHODODENDRON	<i>Rhododendron</i> spp.
ROSE	<i>Rosa</i> spp.
SPIREA	<i>Spiraea bumalda</i>
SWEET OLIVE	<i>Osmanthus fragrans</i>
VIBURNUM	<i>Viburnum tinus</i>
WISTERIA	<i>Wisteria</i> spp.
YELLOW SAGE/SHRUB VERBENA	<i>Lantana camara</i>

\*Slight foliage or flower speckling has been observed on these species

## RECOMMENDATIONS FOR ANNUAL GRASSES IN ORNAMENTALS

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES	SCIENTIFIC NAME	WEED* HEIGHT INCHES	RATE FL. OZ. ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Barnyardgrass	<i>Echinochloa crus-galli</i>	2 to 8	16	32
Broadleaf Signalgrass	<i>Brachiaria platyphylla</i>	2 to 6	16	32
Brome				
California	<i>Bromus cinnatus</i>	2 to 6	16	32
Cheat	<i>Bromus secalinus</i>	2 to 6	16	32
Downy	<i>Bromus tectorum</i>	2 to 6	16	32
Ripgut	<i>Bromus diandrus</i>	2 to 6	16	32
Canarygrass	<i>Phalaris canariensis</i>	1 to 4	16	32
Crabgrass				
Hairy	<i>Digitaria adscendens</i>	2 to 6**	16	32
Large	<i>Digitaria sanguinalis</i>	2 to 6**	16	32
Smooth	<i>Digitaria ischaemum</i>	2 to 6**	16	32
Southern	<i>Digitaria ciliaris</i>	2 to 6**	16	32
Crowfootgrass	<i>Dactyloctenium aegyptium</i>	2 to 6**	16	32
Fall Panicum	<i>Panicum dichotomiflorum</i>	2 to 8	16	32
Field Sandbur	<i>Cenchrus incertus</i>	2 to 6	16	32
Foxtail				
Giant	<i>Setaria faberi</i>	2 to 12	16	32
Green	<i>Setaria viridis</i>	2 to 8	16	32
Yellow	<i>Setaria glauca</i>	2 to 8	16	32
Goosegrass	<i>Eleusine indica</i>	2 to 6**	16	32
Itchgrass	<i>Rottboellia cochin</i>	2 to 6	16	32
Junglence	<i>Echinochloa colona</i>	2 to 6	16	32
Lovegrass (Stinkgrass)	<i>Eragrostis cilianensis</i>	2 to 6	16	32
Rabbitsfootgrass	<i>Polypogon monspeliensis</i>	1 to 4	16	32
Red Rice	<i>Oryza sativa</i>	1 to 3	16	32
Rygrass				
Hardy	<i>Lolium remotum</i>	2 to 6	16	32
Italian	<i>Lolium multiflorum</i>	2 to 6	16	32
Seedling Johnsongrass	<i>Sorghum halepense</i>	4 to 10	16	32
Shattercane	<i>Sorghum bicolor</i>	6 to 18	16	32
Southwestern Cupgrass	<i>Eriochloa gracilis</i>	2 to 6	16	32
Sporangietop				
Amazon	<i>Leptochloa panicoides</i>	2 to 6	16	32
Bearded	<i>Leptochloa fascicularis</i>	2 to 6	16	32
Mexican	<i>Leptochloa unineria</i>	2 to 6	16	32
Red	<i>Leptochloa filiformis</i>	2 to 6	16	32
Texas Panicum	<i>Panicum texanum</i>	2 to 6	16	32
Volunteer Cereals				
Barley	<i>Hordeum vulgare</i>	2 to 6	16	32
Oats	<i>Avena sativa</i>	2 to 6	16	32
Rye	<i>Secale cereale</i>	2 to 6	16	32
Wheat	<i>Triticum aestivum</i>	2 to 6	16	32
Volunteer Corn	<i>Zea mays</i>	4 to 12	12	16
Volunteer Corn	<i>Zea mays</i>	12 to 24	16	32
Volunteer Grain Sorghum	<i>Sorghum bicolor</i>	8 to 12	16	32
Wild Oats	<i>Avena fatua</i>	2 to 6	16	32
Wild Proso Millet	<i>Panicum miliaceum</i>	2 to 10	16	32
Witchgrass	<i>Panicum capillare</i>	2 to 8	16	32
Woolly Cupgrass	<i>Eriochloa villosa</i>	2 to 8	16	32

\*Generally occurs between 3-leaf stage and tillering

\*\*Length of lateral growth.

<sup>(1)</sup>16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.<sup>(2)</sup>32 fl. oz./A = approximately 0.8 fl. oz./1000 sq. ft.

Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).

RECOMMENDATIONS FOR ANNUAL BLUEGRASS CONTROL WITH V-10137 1.0 EC IN ORNAMENTALS			
GRASS SPECIES	WEED STAGE	RATE FL. OZ. ACRE	HIGH RATE
Annual Bluegrass (Poa annua)	to 4-leaf	12	32
<p>Apply under favorable soil moisture and humidity that exists within a few days after rainfall or within 7 days after irrigation. Grass needs to be actively growing at time of application(s).</p> <p>Apply at weed stage indicated on the label, as reduced control can be expected with more mature annual bluegrass.</p> <p>Use the high rate under heavy grass pressure and/or when annual bluegrass is more mature.</p> <p>Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).</p>			

### RECOMMENDATIONS FOR PERENNIAL GRASSES IN ORNAMENTALS

- Apply only to actively growing grasses at recommended weed heights.
- Apply when the first grass weed species in a mixed grass weed population reaches the recommended growth stage for treatment.
- Use the high rate under heavy grass pressure and/or when grasses are at maximum height.

GRASS SPECIES	WEED HEIGHT (inches)	RATE FL. OZ./ ACRE <sup>(1)</sup>	HIGH RATE <sup>(2)</sup>
Bermudagrass ( <i>Cynodon dactylon</i> )			
First Application	3 (or up to 6" runners)	16	32
Repeat Application(s) (if regrowth occurs)	3 (or up to 6" runners)	16	32
Foxtail Barley ( <i>Hordeum jubatum</i> )			
First Application	2 to 6	16	32
Repeat Application(s) (if regrowth occurs)	2 to 6	16	32
Quackgrass ( <i>Elytrigia repens</i> )			
First Application	4 to 8	16	32
Repeat Application(s) (if regrowth occurs)	4 to 8	16	32
Rhizome Johnsongrass ( <i>Sorghum halepense</i> )			
First Application	12 to 24	16	32
Repeat Application(s) (if regrowth occurs)	6 to 18	12	16
Wirestem Muhly ( <i>Muhlenbergia frondosa</i> )			
First Application	4 to 8	16	32
Repeat Application(s) (if regrowth occurs)	4 to 8	16	32

<sup>(1)</sup> 16 fl. oz./A = approximately 0.4 fl. oz./1000 sq. ft.

<sup>(2)</sup> 32 fl. oz./A = approximately 0.8 fl. oz./1000 sq. ft.

Add non-ionic surfactant containing at least 80% active ingredient at the rate of 1 pt. per 50 gals. (0.25% v/v).



## **STORAGE AND DISPOSAL**

### **PROHIBITIONS**

Do not contaminate water, food or feed by storage, disposal or cleaning of equipment.  
Open dumping is prohibited.

### **PESTICIDE STORAGE**

Keep pesticide in original container.  
Do not put concentrate or dilute into food or drink containers.  
Store in cool, dry place.  
Do not store diluted spray.

**Emergency Response:** For help with any spill, leak, fire or exposure involving this material, call day or night 1-800-892-0099.

### **PESTICIDE DISPOSAL**

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

### **CONTAINER DISPOSAL**

Triple rinse (or equivalent). Do not reuse container. Offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

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Manufactured for:

**Valent U.S.A. Corporation**

P.O. Box 8025

Walnut Creek, CA 94596-8025

[www.valent.com](http://www.valent.com)

Made in U.S.A.

EPA Reg. No. 59639-RGE

EPA Est. No.

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## THE VALENT RETURNABLE KEG

**Description:** This keg is a closed-system, refillable container designed for easy handling and convenient dispensing of product with no container disposal.

**Construction:** The keg is made of all stainless steel. Both the gaskets and seals are Viton and are compatible with the Valent product.

**Pump System:** With the versatility of the keg, either a mechanical pump or an air pressure system may be used to dispense the product.

**Coupler:** A specific dry-disconnect coupler is required for dispensing product from the keg. This coupler is available through local agricultural equipment suppliers.

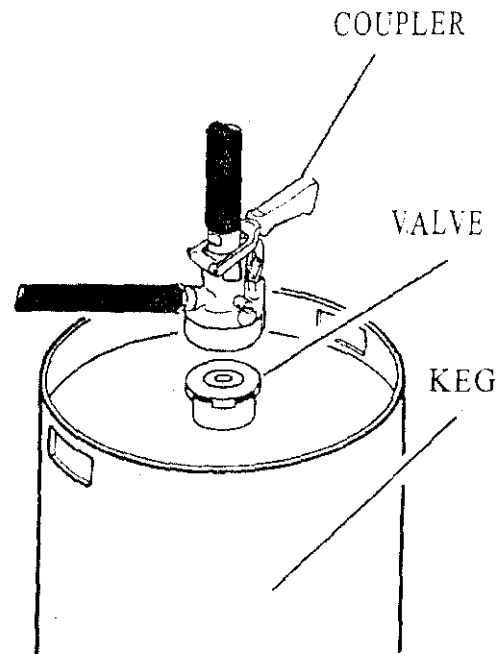
**Container Capacity:** 15 gallons or 56.7 liters (by weight)

### ATTENTION!

This is a closed-system container. Do not try to remove the valve from the keg. The coupler required for removal of product is available from local agricultural equipment suppliers. The keg contains tamper evident seals that, if broken, will incur a fee for the user of the keg. Both the coupler and the valve are designed for one-way operation only. Never try to pump any type of material back into the keg.

### DIRECTIONS FOR USE

The proper coupler must be attached and engaged before removing any product from the keg. Either a mechanical pump or an air pressure system may be used and connected to the 1-inch NPT thread on the top of the coupler.



**IMPORTANT!** Attach a hose or pump to the coupler before engaging coupler. This will prevent the user from being splashed in the event that pressure build-up in the keg forces liquid up through the coupler.

#### To attach and engage the coupler:

1. Pull top of black dust cover back to expose head of valve. The bottom ring of the black dust cover will still be attached to the neck of the valve. Save the dust cover for reuse when returning keg.
2. Before engaging the coupler, securely attach a hose or pump to the threaded connection.
3. Twist coupler onto valve on keg, and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
4. Secure and engage coupler by pulling handle straight out to unlock and then pushing handle down into lower position to open internal valve. Handle will automatically lock in place.
5. You are now ready to begin the pumping operation.

#### To remove coupler from container:

1. Release coupler by pulling handle straight out to unlock and then lifting handle into upper position. Handle will automatically lock in place.
2. Lift coupler from keg. As coupler clears top of valve, pull coupler sideways and lift it off the valve.
3. Wipe valve off and replace dust cover.
4. Flush coupler with water.
5. Wipe coupler and store in a clean place.
6. Properly dispose of cleaning towels and rinsate.

### RETURNING KEGS

Clean the outside of the keg with water or soap before returning the keg to the distributor. Leave all Valent product labels and stickers securely attached. All Valent product labels, stickers and other information must remain on the keg in order to comply with both State and Federal regulations.

All Valent kegs are tracked using the individual keg serial number stamped in the top of the keg. Distributors are responsible for these kegs that have been assigned to them. Return this keg to the distributor from which it was purchased. Notify the distributor if the keg cannot be returned by the specific time.

Valent U.S.A. Corporation  
1333 N. California Blvd., Ste. 600  
Walnut Creek, CA 94596-8025