

308/2E
February 16th, 2009



Mr. Wesley C. Smith
Board of Pesticides Control
ME Department of Agriculture
28 State House Station
Augusta, ME 04333-0028

**APPLICATION FOR A SPECIAL LOCAL NEED 24(C) REGISTRATION
GOALTENDER (A.I. OXYFLUORFEN)
EPA REGISTRATION NUMBER: 62719-447
FOR POSTEMERGENCE USE IN BROCCOLI**

Dear Mr. Smith:

At the request of Maine broccoli growers Dow AgroSciences respectfully submits this application for a FIFRA Section 24(c), Special Local Need registration for GoalTender™ herbicide (a.i. oxyfluorfen; EPA Reg. No. 62719-447) for use on broccoli in Maine for postemergence control of several broad leaf weed species. This application is made with the strong encouragement and support of Dr. Peter Sexton, Crops Specialist at University of Maine Cooperative Extension.

Currently, GoalTender™ herbicide may be applied as a pre-transplant (preplant) application for preemergence suppression/control of susceptible broadleaf weed species prior to transplanting of broccoli. However, several broadleaf weeds are problems after the crop has emerged requiring post-emergence applications of herbicides. Few products are registered for post emergent applications to broccoli due to unacceptable crop injury. Research carried out at Rutgers Agricultural Research and Extension Center and by Cornell University weed scientists has shown that GoalTender (oxyfluorfen, EPA Reg. No. 62719-447) provides effective postemergence control of weeds with a greater degree of crop safety than other herbicides applied post plant (see enclosed letter of support from Dr. Robin Bellinder, Cornell University, and supporting data from B. Majek and R. Bellinder).

Post-transplant or postemergence (over the top) applications are not permitted on the federal Section 3 label. This restriction was originally due to unacceptable injury from earlier solvent-based formulations. Residue trials were conducted by IR-4 to determine if post-plant applications would result in residues that exceed the current tolerance of 0.05 ppm. The enclosed analytical summary report from IR-4 demonstrates that post-plant over the top applications with a PHI of at least 35 days are unlikely to result in residues that exceed the federal tolerances.

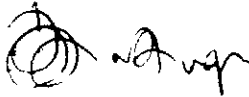
GoalTender would be extremely valuable to Maine broccoli growers because the number of herbicides available to manage weeds in broccoli is very limited, particularly for controlling broadleaf weeds that escape preemergence herbicides. Both Dr. Peter Sexton, of the University of Maine and Ms. Emily Smith of Smith's Farms Inc., underline the difficulties experienced in controlling weeds such as night shade, which is a carrier of the late blight disease that infects the potato crop, grown in rotation with broccoli. Postemergence use of Goal Tender would allow effective control of these weeds and the consequently the disease carried.

Enclosed please find the following:

1. Section 24(c) request for Special Local Need (this letter).
2. EPA Form 8570-25 – “Application for/Notification of State Registration of a Pesticide to Meet a Special Local Need”.
3. Copy of proposed Section 24(c) label for Goaltender “For postemergence use in broccoli” label code R204-051.
4. Efficacy and crop safety data as follows:
 - Broadleaf Weed Control in Transplanted Cole Crops, Protocol no. US 028/06/01, Author B.Majek, Rutgers Agricultural Research and Extension Center, 12/20/2006
 - Cole Crop Herbicide Screen-2007 Trial ID: COLTRL Location N-2, Investigator Dr. Robin Bellinder, Horticulture Department, Cornell University.
5. Residue data:
 - Oxyfluorfen: Magnitude of Residue on Broccoli. IR-4 National Pesticide Clearance Protocol PR No. 08806. Date 01/04. 8pp.
 - Oxyfluorfen: Magnitude of Residue on Broccoli. Analytical Summary Report. PR No. 08806, Jo Engebretson, IR-4 Western Region Laboratory. 12pp.
6. Letter of support, dated May 6th 2008, from Dr. Peter Sexton, Crops Extension Specialist, University of Maine.
7. Letter of support, dated November 12th, from Dr. Robin Bellinder of Cornell University summarizing her research on the post emergence applications of GoalTender to cole crops.
8. Letter of support from Emily Smith, dated December 2nd 2008, of Smith Farms Inc.

Please contact Tracey Wiley, State Regulatory Assistant, at 317-337-4675 or me at 317-337-3149 if you have any questions or require additional information.

Sincerely,



Kerry Hastings, Ph.D.
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cc Dr. Peter Sexton, ME
Dr. Robin Bellinder, NY
Ms. Emily Smith, ME

KH/trw

Enclosures

United States Environmental Protection Agency
Office of Pesticide Programs, Registration Division (7505C)
Washington, DC 20460



**Application for/Notification of State Registration
of a Pesticide To Meet a Special Local Need**
(Pursuant to section 24(c) of the Federal Insecticide,
Fungicide, and Rodenticide Act, as Amended)

For State Use Only
Registration No. Assigned
Date Registration Issued

1. Name and Address of Applicant for Registration Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, IN 46268-1054		2. Product is (Check one) <input checked="" type="checkbox"/> EPA-Registered EPA Registration Number 62719-447 <input type="checkbox"/> New (not EPA-registered) Attach EPA Form 8570-4, Confidential Statement of Formula for new products. EPA Company Number 62719	
4. Product Name GoalTender		3. Active Ingredient(s) in Product Oxyfluorfen	
6. Type of Registration (Give details in Item 13 or on a separate page, properly identified and attached to this form): a. To permit use of a new product. <input type="checkbox"/> b. To amend EPA registrations for one or more of the following purposes: <input type="checkbox"/> (1) To permit use on additional crops or animals. <input type="checkbox"/> (2) To permit use at additional sites. <input type="checkbox"/> (3) To permit use against additional pests. <input checked="" type="checkbox"/> (4) To permit use of additional application techniques or equipment. <input type="checkbox"/> (5) To permit use at different application rates. <input type="checkbox"/> (6) Other (specify below)		5. If this is a food/feed use, a tolerance or other residue clearance is required. Cite appropriate regulations in 40 CFR Part 180, 185, and/or 186. 0.05ppm	
10. Has FIFRA section 24(c) registration for this use of the product ever, by another State, been (check appropriate box(es), if known): <input checked="" type="checkbox"/> Sought <input checked="" type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Revoked If any of the above are checked, list States in Item 13 below. <input type="checkbox"/> No FIFRA section 24(c) Action		7. Nature of Special Local Need (check one) <input type="checkbox"/> There is no pesticide product registered by EPA for such use. <input checked="" type="checkbox"/> There is no EPA-registered pesticide product which, under the conditions of use within the State, would be as safe and/or as efficacious for such use within the terms and conditions of EPA registration. <input type="checkbox"/> An appropriate EPA-registered pesticide product is not available.	
Certification I certify that the statements I have made on this form and all attachments thereto are true, accurate, and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law.		8. If this registration is an amendment to an EPA-registered product, is it for a "new use" as defined in 40 CFR 152.3 ? <input type="checkbox"/> Yes (describe in Item 13 below) <input checked="" type="checkbox"/> No	
Signature of Applicant or Authorized Representative Title Regulatory Specialist		9. Has an EPA Registration or Experimental Use Permit for this chemical ever been (check applicable box(es), if known): <input checked="" type="checkbox"/> Sought <input checked="" type="checkbox"/> Issued <input type="checkbox"/> Denied <input type="checkbox"/> Cancelled <input type="checkbox"/> Suspended <input checked="" type="checkbox"/> Registration <input type="checkbox"/> Experimental Use Permit <input type="checkbox"/> No Previous Permit Action	
Telephone Number 317-337-3149		Date 2/18/09	
Determination by State Agency This registration is for a Special Local Need and is being issued in accordance with section 24(c) of FIFRA, as amended. To the best of our knowledge, the information above is correct, except as noted in "Comments" below or in attachments.			
Name, Title, and Address of State Agency Official		Comments (by State Agency Only)	
Title		Received by EPA	
Telephone Number		Date	

Supplemental Labeling



Dow AgroSciences LLC

9330 Zionsville Road

Indianapolis, IN 46268-1054 USA

GoalTender[®]

EPA Reg. No. 62719-447

24(c) Special Local Need Registration SLN ME-_____

For Postemergence Use in Broccoli
(For Distribution and Use Only in the State of Maine)

Conditions and Risks of Use for Special Local Need

USE OF GoalTender[®] HERBICIDE (THE "PRODUCT") ON BROCCOLI (THE "CROP") FOR THIS SPECIAL LOCAL NEED MAY RESULT IN CROP INJURY, CROP YIELD REDUCTION AND/OR CROP LOSS AS FURTHER DISCUSSED BELOW. READ AND UNDERSTAND THESE CONDITIONS AND RISKS OF USE FOR SPECIAL LOCAL NEED BEFORE USING THE PRODUCT ON THE CROP.

This Product is available for use in the manner described in this Supplemental Labeling on the basis that, in the sole opinion of the user, the benefits and utility derived from the use of the Product on the Crop outweigh the potential risk of Crop injury, Crop yield reduction or Crop loss. The decision to use this Product in the manner described in this Supplemental Labeling must be made by each individual user on the basis of anticipated benefits versus (i) the potential risk of Crop injury, Crop yield reduction and Crop loss, (ii) the severity of the target pest infestation, (iii) the cost and availability of alternative pest controls and (iv) any other relevant factors.

By purchasing the Product for use, or using the Product, in the manner described in this Supplemental Labeling, you acknowledge and accept that, to the extent permitted by law:

- (1) you assume all risk of Crop injury, Crop yield reduction and Crop loss;
- (2) Dow AgroSciences does not make, and do not authorize any agent or representative to make, any representations or recommendations regarding the use of this Product on the Crop other than the statements on this Supplemental labeling;
- (3) Dow AgroSciences does not make, and does not authorize any agent or representative to make, any warranties, express or implied, with respect to the use of the Product on the Crop and disclaim all warranties, expressed or implied, including any implied warranty of merchantability;
- (4) Dow AgroSciences disclaims all liability for any damages, losses, expenses, claims or causes of actions arising out of or relating to Crop injury, Crop yield reduction and/or Crop loss;
- (5) these Conditions and Risks of Use for Special Local Need supersede any contrary representations or recommendations by Dow AgroSciences, or its respective agents or representatives, and any provisions in or on any Product literature or labeling including any provisions on the label affixed to the Product container.

If these Conditions and Risks of Use for Special Local Need are not acceptable, the unopened Product may be returned to the seller for a refund or used for a different labeled use in accordance with the label affixed to the Product container.

These Conditions and Risks of Use for Special Local Need are required by Dow AgroSciences and not specified by the US EPA or the State of Maine.

ATTENTION

- It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
- This label must be in the possession of the user at the time of pesticide application.
- Read this SLN labeling and the label affixed to the container for GoalTender™ herbicide before applying. All applicable use directions, precautions and restrictions on this SLN labeling and the label affixed to the product container must be followed.

Directions for Use

GoalTender® herbicide may be applied as a broadcast or directed spray for the postemergence suppression/control of susceptible broadleaf weed species in direct-seeded or transplanted broccoli.

Crop Tolerance Information: Broccoli are tolerant to postemergence applications of GoalTender; however, under certain conditions, GoalTender can cause severe crop injury. Application to crops grown under very mild (cool, cloudy) conditions can produce leaf cupping, crinkling, stunting, or necrotic lesions. When injury occurs, it is usually limited to the treated leaves with new leaves emerging undamaged. Delay in crop development and/or maturity, and yield reduction can result under these conditions.

Do not use GoalTender on plants that are weakened or are under stress due to temperature, disease, fertilizer, soil, salts, nematodes, insects, pesticides, drought, excessive moisture, flooding, or soil crusting.

Application Rate, Timing and Method of Application: Apply GoalTender as a broadcast postemergence application at the rate of 4 to 6 fl oz per acre (0.125 to 0.188 lb active). GoalTender may also be applied as a directed application at a rate of 4 to 8 fl oz per acre (0.125 to 0.25 lb active). Directed applications are those where spray mixtures are applied in such a way as to minimize contact to crop leaves, directing the spray toward the soil at the base of the crop.

For direct-seeded crops apply when the crop reaches a minimum of four true leaves. For transplanted crops apply after a minimum of two weeks after planting.

For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.

Apply only with ground equipment in a spray volume of 20 gallons or more of water per acre. Increase the spray volume to ensure complete and uniform coverage as weed height and density increases. Use a low-pressure sprayer equipped with flat fan nozzles operated at the manufacturer's recommended pressure.

Weeds Controlled or Suppressed Postemergence: GoalTender provides postemergence control/suppression of the following weeds when used at recommended dosages:

Common Name	Scientific Name
burning nettle	<i>Urtica urens</i>
cheeseweed (Malva)	<i>Malva parviflora</i>
nightshade, black	<i>Solanum nigrum</i>
pigweed, redroot	<i>Amaranthus retroflexus</i>
purslane, common	<i>Portulaca oleracea</i>
shepherdspurse	<i>Capsella bursa-pastoris</i>
sowthistle, annual	<i>Sonchus oleraceus</i>

Cultural Considerations: Best weed control results when GoalTender is applied to young (1-4 leaf), actively growing weeds.

Use Restrictions

In addition to the General Use Restrictions in the product label for GoalTender, the following use restrictions must be observed:

- For direct-seeded crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post emergence treatment.
- For transplanted crops, do not apply more than 8 fl oz per acre (0.25 lb active) per crop as a post-transplant treatment. If a pre-transplant (preplant) treatment has previously been made, the combination of pre- plus post-transplant treatments must not exceed 16 fl oz per acre per season (0.5 lbs active).
- Do not add any adjuvant or liquid fertilizer to the spray mixture.
- For postemergence use in broccoli do not mix GoalTender with adjuvants (oils, surfactants), liquid fertilizer or pesticides.
- Do not apply within 35 days of harvest.
- Do not apply when weather conditions favor drift. Avoid drift to all non-target areas. GoalTender is phytotoxic to susceptible plant foliage.
- **Chemigation:** Under this SLN label, do not apply this product through any type of irrigation system.
- Avoid application if heavy rainfall is predicted to occur within 24 hours after planned application.
- The use directions under this SLN label supersede the Section 3 label prohibitions for broccoli.
- Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 24 hours.

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R204-051

Approved: ___/___/___

Initial printing

ANALYTICAL SUMMARY REPORT
Oxyfluorfen: Magnitude of the Residue on Broccoli

PR#08806

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Laboratory Study ID.: #08806.04-CAR04

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Field Trial ID. Numbers

08806.04-TX17, 08806.04-OR05, 08806.04-CA*25,
08806.04-CA*26, 08806.04-CA*27, 08806.04-CA28,
08806.04-CA29

Study Timetable

Study Initiation Date: 01/20/2004
Experimental Termination Date: 04/21/05

Report Date

08/02/05

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Injector Temp: 250°C; Detector Temp: 280°C
 Purge/Pack Injection: 3 µL injection vol.
 Carrier Gas: Helium at ~15.0 mL/min
 Detector Gas (ECD): argon/methane at 30 mL/min.
 Retention Time: ~3.0 minutes

Calculations:

Peak areas were measured using electronic integration of peak areas. A set of three to five levels of standards was injected prior to and following the sample injections. In addition, selected standards were interspersed within the sample analyses. Samples were injected in duplicate. A Totalchrom® data acquisition system was used to calculate a best fit line between peak area versus standard concentrations for oxyfluorfen and picogram levels in samples were calculated from the best fit line. The limit of detection is 10% below the standard curve. The Excel® spreadsheet was used to calculate average ppm.

$$\frac{\text{pg determined}}{\text{mg crop} * 1000} = \text{ppm found}$$

The percentage recovery was reported as follows:

$$\frac{\text{ppm found}}{\text{ppm expected}} * 100\% = \% \text{ Recovery}$$

Example: 16572V0.1R2

$$\frac{56 \text{ pg determined}}{0.60 \text{ mg crop} * 1000} = 0.0930 \text{ ppm found}$$

$$\frac{0.093 \text{ ppm found}}{0.100 \text{ ppm expected}} * 100\% = 93\% \text{ Recovery}$$

VII. Results and Discussion:

Results are listed below. No out of range recoveries occurred.

**OXYFLUORFEN/BROCCOLI
 PR#08806**

Validation Range (%)	89-108
Concurrent Recovery Range (%)	77-98

FIELD:	CONTROL (ppm)	TREATED 0.125 lb.ai/A (ppm)	TREATED 0.25 lb.ai/A (ppm)
08806.04-TX17	<0.010, <0.010	<0.010, <0.010	<0.010, <0.010
08806.04-OR05	<0.010	<0.010, <0.010	<0.010, <0.010
08806.04-CA*25	<0.010	<0.010, <0.010	<0.010, <0.010
08806.04-CA*26	<0.010	<0.010, <0.010	<0.010, <0.010
08806.04-CA*27	<0.010	<0.010, <0.010	0.0163, 0.0168
08806.04-CA29	<0.010	<0.010, <0.010	<0.010, <0.010
08806.04-CA28	<0.010	<0.010, <0.010	<0.010, <0.010

RESIDUE DATA REPORTING FORM
Method Validation Results for Oxyfluorfen on Broccoli

Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenMethod ValidationLab ID#: 08806.04-CAR04

Sample ID	Fortification Level (ppm)	Dimethenamid-p Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16572V.1R1	0.10	0.0923	92	92 ± 2
16572V.1R2	0.10	0.0930	93	
16572V.1R3	0.10	0.0894	89	
16572V.01R1	0.010	0.0108	108	100 ± 7
16572V.01R2	0.010	0.0097	97	
16572V.01R3	0.010	0.0095	95	

Refer to page 46 and 47 for the complete method validation data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-TX17

Lab ID#: 08806.04-CAR04Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenHarvest Date: 05/16/04Maximum Time between Harvest and Extraction (Treated Samples): 36 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16572	A	01	06/17/04	06/17/04	<0.010
16573	B	01	06/21/04	06/21/04	<0.010
16574	C	02	06/21/04	06/21/04	<0.010
16575	D	02	06/21/04	06/21/04	<0.010
16576	E	03	06/21/04	06/21/04	<0.010
16577	F	03	06/21/04	06/21/04	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16573V.01R4	0.010	0.0096	96	93 ± 4
16573V.01R5	0.010	0.0089	89	
16573V.01R6	0.010	0.0095	95	

Refer to pages 46 through 49 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-OR05

Lab ID#: 08806.04-CAR04

Commodity: Broccoli

Crop Fraction: Flower Head

Analysis of Residues of: Oxyfluorfen

Harvest Date: 07/20/04

Maximum Time between Harvest and Extraction (Treated Samples): 13 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16632	A	01	08/02/04	08/03/04	<0.010
16633	B	01	Not Analyzed		
16634	C	02	08/02/04	08/03/04	<0.010
16635	D	02	08/02/04	08/03/04	<0.010
16636	E	03	08/02/04	08/03/04	<0.010
16637	F	03	08/02/04	08/03/04	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16632V.01R7	0.010	0.0097	97	92 ± 8
16632V.01R8	0.010	0.0098	98	
16632V.01R9	0.010	0.0083	83	

Refer to pages 50 through 52 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-CA*25

Lab ID#: 08806.04-CAR04

Commodity: Broccoli

Crop Fraction: Flower Head

Analysis of Residues of: Oxyfluorfen

Harvest Date: 09/01/04

Maximum Time between Harvest and Extraction (Treated Samples): 29 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16766	A	01	09/30/04	09/30/04	<0.010
16767	B	01	Not Analyzed		
16768	C	02	09/30/04	09/30/04	<0.010
16769	D	02	09/30/04	09/30/04	<0.010
16770	E	03	09/30/04	09/30/04	<0.010
16771	F	03	09/30/04	09/30/04	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16766C.01R10	0.010	0.0093	93	96 ± 3
16766C.01R11	0.010	0.0098	98	
16766C.01R12	0.010	0.0098	98	

Refer to pages 53 and 54 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-CA*26

Lab ID#: 08806.04-CAR04Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenHarvest Date: 11/04/04Maximum Time between Harvest and Extraction (Treated Samples): 137 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16862	A	01	03/21/05	03/21/05	<0.010
16863	B	01	Not Analyzed		
16864	C	02	03/21/05	03/21/05	<0.010
16865	D	02	03/21/05	03/21/05	<0.010
16866	E	03	03/21/05	03/21/05	<0.010
16867	F	03	03/21/05	03/21/05	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16862C.01R13	0.010	0.0098	98	93 ± 5
16862C.01R14	0.010	0.0093	93	
16862C.01R15	0.010	0.0088	88	

Refer to pages 55 and 56 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-CA*27

Lab ID#: 08806.04-CAR04Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenHarvest Date: 12/20/04Maximum Time between Harvest and Extraction (Treated Samples): 93 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16970	A	01	03/23/05	03/24/05	<0.010
16971	B	01	Not Analyzed		
16972	C	02	03/23/05	03/24/05	<0.010
16973	D	02	03/23/05	03/24/05	<0.010
16974	E	03	03/23/05	03/24/05	0.0163
16975	F	03	03/23/05	03/24/05	0.0168

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16970C.01R16	0.010	0.0098	98	94 ± 4
16970C.01R17	0.010	0.0092	92	
16970C.01R18	0.010	0.0093	93	

Refer to pages 57 and 58 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-CA29

Lab ID#: 08806.04-CAR04Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenHarvest Date: 12/08/04Maximum Time between Harvest and Extraction (Treated Samples): 120 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
16964	A	01	04/07/05	04/07/05	<0.010
16965	B	01	Not Analyzed		
16966	C	02	04/07/05	04/07/05	<0.010
16967	D	02	04/07/05	04/07/05	<0.010
16968	E	03	04/07/05	04/07/05	<0.010
16969	F	03	04/07/05	04/07/05	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
16964C.02R1	0.020	0.0171	85	84 ± 2
16964C.02R2	0.020	0.0163	81	
16964C.02R3	0.020	0.0168	84	

Refer to pages 59 and 60 for the complete sample analysis data.

RESIDUE DATA REPORTING FORM
Analysis Results for Broccoli Samples from Field Study #08806.04-CA28

Lab ID#: 08806.04-CAR04Commodity: BroccoliCrop Fraction: Flower HeadAnalysis of Residues of: OxyfluorfenHarvest Date: 2/21/05Maximum Time between Harvest and Extraction (Treated Samples): 59 days

Lab. Sample ID	Field Sample ID	TRT #	Date Extracted	Date Analyzed	Oxyfluorfen (ppm)
17026	A	01	04/21/05	04/21/05	<0.010
17027	B	01	Not Analyzed		
17028	C	02	04/21/05	04/21/05	<0.010
17029	D	02	04/21/05	04/21/05	<0.010
17030	E	03	04/21/05	04/21/05	<0.010
17031	F	03	04/21/05	04/21/05	<0.010

Concurrent Recoveries

Lab. Sample ID	Fortification Level (ppm)	Oxyfluorfen Found (ppm)	Percent Recovery (%)	Average Percent Recovery (%)
17026C.02R4	0.020	0.0154	77	80 ± 3
17026C.02R5	0.020	0.0164	82	
17026C.02R6	0.020	0.0165	82	

Refer to pages 61 and 62 for the complete sample analysis data.

TRIAL SUMMARY
GENERAL SITE INFORMATION

TRIAL #: US 028/06/01 000 A1 ALTERNATE ID#: CAB - BROC (TRANS)
PROTOCOL#: US 028/06/01 ALTERNATE ID#: CAB - BROC
CREATED BY: US MAJEX B

CREATED: 07/24/2006 REVISED: 12/20/2006 COMPLETED: Y
TITLE: Broadleaf Weed Control in Transplanted Cole Crops
COORDINATOR: US 000 Not Applicable

TRIAL TYPE: HERBICIDE
PROJECT#2:

RESEARCHER: B. Majek CONFIDENCE: TO BE SELECTED
REPORTED BY: US Not Applicable And Not Applicable
COOPERATOR: Rutgers A.R.EC.

LOCATION: RAREC DATA SOURCE: UNIVERSITY
CITY: BRIDGETON TYPE: FIELD TRIAL
COUNTRY: CUMBERLAND SUBDIVISION: NEW JERSEY
ZIP: 08302

COUNTRY: UNITED STATES
WEATHER SITE: SEE BOOK -- SEE PRINTED BOOK DISTANCE TO TRIAL: 0.00 FT
WEEKS PRIOR TO FIRST APPLICATION: 4 WEEKS AFTER LAST APPLICATION: 4
EARLY WEATHER: NA MID WEATHER: NA LATE WEATHER: NA

SOIL INFORMATION
% SAND: 60 TILLAGE: COT
% SILT: 30 PH: 6.6
% CLAY: 10 CEC: 3.6
TEXTURE: SL % OM: 1.7
SOIL GEN: F

PREVIOUS CROP: NA - NONE
% RESIDUE: 0
PLOT WIDTH: 5.00 FT
PLOT LENGTH: 20.00 FT
PLOT AREA: 100.00 SFT

TRIAL INFORMATION
DESIGN: RCB RESIDUE TRIAL: ---
ACTUAL REPS: 4 ACTUAL BLOCKS: 1
ACTUAL TRTS: 8 ACTUAL SUB-BLOCKS: 8

APPL. NUMBER	01	02	03	UNIT
TIMINGS	01	02	03	
TYPE	LIQMIX	LIQMIX	LIQMIX	AME
APPLICATION DATE	09/08/06	09/08/06	10/03/06	24H
TIME - BEGIN	11:00	15:00	09:00	24H
TIME - END	11:10	16:00	09:20	F
AIR TEMPERATURE	83	83	72	
% REL. HUMIDITY	70	65	70	
WIND DIRECTION	---	SOUTH	SOUTHWEST	M/H
WIND SPEED	0.0	2.0	2.0	
CLOUD COVER	PARTCLDY	CLEAR	CLEAR	
DEW	YES	NO	YES	
SOIL MOISTURE	MOIST/MOI	DRY/MOIST	MOIST/MOI	
SOIL CONDITION	FRIABLE	FRIABLE	COMPACT	
SOIL TEMP/DEPTH	78/4.00	80/4.00	62/4.00	F /
METHOD	SPRAY	SPRAY	SPRAY	
EQUIPMENT	SPRBEL	SPRBEL	SPRBEL	
PROPELLANT	COMCO2	COMCO2	COMCO2	
PLACEMENT	BRFOSO	BRFOSO	BRFOSO	
NOZZLE	FLATFAN	FLATFAN	FLATFAN	
NOZZLE VOLUME	0.40	0.40	0.40	GPM
NOZZLE NUMBER	3	3	3	
NOZZLE SPACING	20.000	20.000	20.000	IN
SCREEN SIZE	NA	NA	NA	
SCREEN SZ DESC	5.0	5.0	5.0	FT
SWATH WIDTH	18.0	18.0	24.0	IN
BOOM HEIGHT	3.00	3.00	3.00	M/H
SPEED	0.230	0.230	0.230	
MIX SIZE	GAL	GAL	GAL	
MIX SIZE UNIT	25.00	25.00	25.00	
SPRAY VOLUME	GPA	GPA	GPA	
SCREEN SIZE	33.00	33.00	33.00	PSI
PRESSURE	WATER	WATER	WATER	
DILUENT				
INC. DATE				AME
INC. START				24H
INC. END				24H
INC. DEPTH				IN
INC. EQUIPMENT	---	---	---	

* TIMING CODES / PRETRANSPLANT / POST TRANSPLANT / POSTEMERGENCE

01 = PRETRA / PRETRANSPLANT

02 = POSTTR / POST TRANSPLANT

03 = POSPOS / POSTEMERGENCE

* NOZZLE DESCRIPTION

01 = 8004

02 = 8004

03 = 8004

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TRIAL # US 028/06/01 000 A1 : CAB - BROC (TRANS)
SPECIES STAGES

12/20/2006

01 P BR Sok - BROCCOLI

VAR/SPC INFO: GYPSY

TARGET: CROP	SITE: FG	POPULATION: 8712.00 IPA	PLANTED: 09/08/2006			
PLANTING DEPTH: 3.0	IMPLANTING SPACE: 24.0	IN ROW WIDTH: 30.0	IN			
INFESTATION DATE: /	METHOD: NA					
STAGE ON 10/03/2006	STAGE CODE 19	POPULATION MN SIZE 8.00	MX SIZE 8.00	AV SIZE 8.00	CROP VIGOR TUR	NOTES

02 P GASCI - GALINSOGA, HAIRY

PLANTED:

TARGET: PEST	SITE: FG					
INFESTATION DATE: /	METHOD: NA					
STAGE ON 10/03/2006	STAGE CODE 14	HGH 50.00	IP A 1.00	POPULATION MN SIZE 1.00	MX SIZE 2.00	AV SIZE 1.50
						IN
						TUR
						NOTES

* STAGE CODE -- BROCCOLI

19 = 9 OR MORE TRUE LEAVES UNFOLDED

* STAGE CODE -- GENERAL

14 = 4TH TRUE LEAVES/LEAF PAIRS/WHORLS UNFOLDED

TITLE: Broadleaf Weed Control in Transplanted Cole Crops
 CREATED: 07/24/2006 REVISIED: 12/20/2006 COMPLETED: Y
 PROJECT TYPE: HERBICIDE
 LOCATION: RAREC RESEARCHED BY: B. Majek
 DESIGN: RANDOMIZED COMPLETE BLOCK DESIGN
 PLOT SIZE: 5.00 FT WIDE X 20.00 FT LONG
 PLOT AREA: 100.00 SFT

REPS: 04

TRT TREATMENT NUM COMPONENT	LOT NUMBER	RATE	UNIT	TM	DOSAGE	PL ALL	CON %	PHY %	VAR 01	PL ALL	CON %	PHY %	VAR 01	PL ALL	CON %	PHY %	VAR 01	
1A»HANDWEDED	0	0.00	NA	0		0	100	0	0	0	100	0	0	0	0	0	0	75
2A UNTREATED CHECK	0	0.00	NA	0		0	0	0	0	0	0	0	0	0	0	0	0	0
3A GOAL 2XL (2EC)	1	0.25	LAA	1		0	100	0	0	0	100	0	0	0	0	0	0	100
B PREFAR 4E (EC)	2	4.00	LAA	2														
4A PREFAR 4E (EC)	2	4.00	LAA	2		0	0	0	0	0	0	0	0	0	0	0	0	0
5A PREFAR 4E (EC)	2	8.00	LAA	2		0	0	0	0	0	0	0	0	0	0	0	0	0
6A PREFAR 4E (EC)	2	16.00	LAA	2		0	0	0	0	0	0	0	0	0	0	0	0	0
7A PREFAR 4E (EC)	2	4.00	LAA	2		0	0	0	0	0	0	0	0	0	0	0	0	83
B»GOALTENDER 4FL	3	0.125	LAA	3														
8A PREFAR 4E (EC)	2	4.00	LAA	2		0	0	0	0	0	0	0	0	0	0	0	0	83
B»GOALTENDER 4FL	3	0.25	LAA	3														

LSD (0.05)
 SIGNIFICANCE OF F
 STANDARD DEVIATION
 COEFFICIENT OF VARIANCE
 DAT APPLICATION # 01 TIMINGS (01)
 DAT APPLICATION # 02 TIMINGS (02)
 DAT APPLICATION # 03 TIMINGS (03)

0.00 NS
 0.00
 0.00
 20
 20
 NA
 0.00
 0.00
 0.00
 20
 20
 NA
 3.40
 1.64
 33.67
 32
 32
 7
 26.00
 12.49
 41.55
 32
 32
 7

NOTE: If a Field Research Director is assigned more than one trial in this study, an independently prepared tank-mix is required in each trial. Also, multiple trials at the same site must be conducted using at least 1) different soil series, or 2) different application dates, or 3) different varieties.

11. TEST SYSTEM DESIGN and STATISTICAL METHOD:

Each test site will consist of one untreated and two treated plot. The individual plots shall be of adequate size to ensure that no more than 50% of the harvestable crop will be needed to provide the necessary plant material requirements for residue sampling outlined in Parts 17 & 18. Employ adequate buffer zones (minimum 15 feet) between the plots to prevent contamination. If this pesticide use is not registered on this crop, federal law requires that the treated crop must be destroyed or handled in such a way that it is not consumed as a human food or animal feed. Mark plots with identifiable markers containing at minimum the Field ID number and treatment number or treatment name that will persist for the duration of the field research trial or that can be readily replaced. This study is not designed for statistical evaluation of field data.

12. TEST SITE PREPARATION:

Prepare or select a test site that has been maintained following good local agricultural practices for the production of broccoli including fertilization, irrigation, if necessary and available, and other practices that ensure good crop production. The test site will have a known pesticide and crop treatment history of a minimum of 1 year and preferably 3 years.

13. TEST/CONTROL SUBSTANCE:

Use **GOAL 4F** formulation (4 lbs active ingredient per gallon) of oxyfluorfen (EPA Reg. No. 62719-447) that has been characterized to meet GLP standards. IR-4 personnel will arrange procurement of GLP test substance from the Registrant. Upon receipt, document the lot/batch number, condition, quantity received and if GLP characterized. Contact the Study Director if there are any concerns regarding the GLP status, labeled identification, etc. of the test substance. The registrant will provide a copy of the Certificate of Analysis to IR-4 Headquarters. Store the test substance in a secure, clean, dry area at temperature ranges noted in the product label or other references. EPA regulations require that test substance container(s) must be retained until the final study report (Pesticide Tolerance Petition) is completed. Field Research Directors may contact the Sponsor at IR-4 Headquarters regarding completion of the final study report or if a waiver from EPA permits proper disposal. Alternatively, some registrants will archive the test substance container(s). See shipping documents for directions or, if none are given, contact the registrant representative: Brian Bret, Dow AgroSciences, (916) 780-7477; Fax: 916-780-7478; e-mail: blbret@dow.com. The registrants will archive a retention sample of the test substance. Control substances are not relevant to this study.

14. TEST SUBSTANCE APPLICATION:

Each field trial requires a unique spray mixture; i.e., do not use the spray mixture from one field trial on another field trial. To ensure that the test substance is well mixed, agitate during the application, if practical. Use application equipment that will provide uniform application of the test substance in **10 to 40 gallons of water per acre**. Apply the test substance as specified, in a manner that represents or simulates the major application technique that is used by area commercial growers. The test substance, if applied in a mixture, must be applied to the test system within 2 hours of mixing.

To ensure accurate delivery, calibration for speed and output must be performed. Just prior to the first application of test substance², completely calibrate for speed (equipment or walking speed) and nozzle or hopper output, by performing a minimum of three consecutive, documented checks. Conduct speed calibration in an area adjacent to the test plot, or on similar terrain. For multiple applications, rechecking of the output is necessary. When application parameters or equipment components have changed between applications such as application type, gallons per acre, application equipment including nozzle tips, etc., from the initial calibration, another complete calibration must be performed and documented, even if the equipment has been changed back to the parameters of the initial calibration. (Use equipment logs to document changes in the equipment parameters.) Otherwise, a single output check may be conducted to confirm consistent delivery (+5% of the last complete calibration) just prior² to subsequent applications. If the recheck results in an output that differs from the mean of the complete calibration by >5%, then the equipment must be completely re-calibrated. Likewise if the variation of any nozzle's output from the mean output is greater than 5% then the equipment must be completely re-calibrated (this statement does not apply to airblast sprayers). If complete calibration data from another trial,

²"Just prior" includes the day prior to the application, but calibration on the day of use is preferred.

performed on the day of or day prior to the application in this trial, is to be used, then a recheck (single output check) must be performed just prior² to the application in this trial but subsequent to any other applications with the application equipment.

The submitted Field Data Book shall contain a true copy of all complete calibrations referenced, along with the rechecks performed for this trial. Calculations for the amount of test substance to be applied will always be based upon mean output calculated from the most recent complete calibration data, not on the recheck results. Record actual application pass times in the Field Data Book and verify the accuracy of the application against the expected (calculated) results. The application is considered acceptable if the accuracy is within -5% and +10% of the protocol specified application rate. If the application did not meet this range, the Study Director must be notified of this deviation before proceeding with this trial.

15. APPLICATION TREATMENTS AND TIMING:

<u>Trt#</u>	<u>TREATMENT</u>	<u>Rate (lbs. ai/A)</u>	<u>Application Type</u>
01	Untreated		
02	OXYFLUORFEN	0.125* (within -5% to +10%)*	Post-emergence, foliar
03	OXYFLUORFEN	0.25** (within -5% to +10%)*	Post-emergence, foliar

TRT 02 & 03) Make one post-emergence application 35 (±3) days before harvest (**preferable before broccoli flower heads start to form**).

Corresponds to 118* and 237** ml product/acre. The nominal formulation concentration of the test substance will be used in calculating application rates. (See Section 13 for the nominal concentration.)

16. SUPPLEMENTAL CROP TREATMENTS:

Protect the integrity of the field trial by managing pests that may cause significant damage to the test crop. Only EPA-registered maintenance pesticides should be used; apply according to labeled directions. Make identical applications to the untreated and treated plots. Consult with Study Director if no registered pesticides are available to control the pests. Document all supplemental crop treatments. DO NOT USE pesticides that are similar to the test substance or other chemicals that might interfere with analysis of the test substance. If unsure, contact the Study Director.

17. RESIDUE SAMPLE COLLECTION:

Collect two samples from each plot. Gather each sample in a manner to assure an impartial sample that represents the entire plot (except plot edges). At 35 (±3) days after the application, starting with the untreated plot first, collect flower heads from a minimum of 12 plants as done commercially. Avoid sampling from the plot edges. Remove dead and/or senesced leaves. If excessive soil adheres to the plants, remove it by lightly brushing it off (document what is used to remove the soil or debris, e.g. a clean brush, clean gloved hand, clean dry towel, or similar method). If necessary, lightly rinse off with a minimal amount of clean water (do not scrub). Pat lightly to dry with clean paper towels. **DO NOT RUB WHILE RINSING OR DRYING THE PLANTS.** Reduce gross sample weight to a minimum of 2 lbs (but preferably not more than 3 lbs) by cutting each flower head (including stem (stalk)) longitudinally into quarters with a clean knife on an uncontaminated surface. Retain at least one quarter of each flower head. Each retained section of the head should contain some florets, stem (stalk), and jacket leaf foliage. Process untreated samples first. Follow proper handling practices with clean or gloved hands and clean tools to prevent transfer of pesticide residue from one sample to another. If practical, complete harvest and sample preparation for one plot before proceeding to the next. Place all samples in plastic-lined cloth bags. Bags may be obtained from the Field Research Coordinator (Section 24). Identify each sample bag** with correct Field ID number, Test Substance (common chemical name and formulation), complete sample ID (see Section 18) and harvest/sampling dates. See Section 19 for residue sample handling directions.

**When using IR-4 plastic lined cloth residue sample bags, complete attached sample tag as follows:
PR No. - enter Field ID Number; Commodity (Crop) - enter crop fraction; Chemical - enter common chemical name and formulation; Rep. No. - enter sample ID; Date Sampled - enter harvest/sampling dates; Applic. Rate (#a./A) - enter application rate and Investigator: Name/Address/Phone # - enter name of Field Research Director.

18. FIELD RESIDUE SAMPLE INVENTORY:

SAMPLE ID	TRT#	TREATMENT	DAYS AFTER LAST APPLIC.	MINIMUM WGT. OF SAMPLE	CROP FRACTION
A	01	Untreated	NA	2 lbs.	Flower Head*
B	01	Untreated	NA	2 lbs.	Flower Head*
C	02	OXYFLUORFEN	35 (±3)	2 lbs.	Flower Head*
D	02	OXYFLUORFEN	35 (±3)	2 lbs.	Flower Head*
E	03	OXYFLUORFEN	35 (±3)	2 lbs.	Flower Head*
F	03	OXYFLUORFEN	35 (±3)	2 lbs.	Flower Head*

*Includes Florets, Stem (Stalk) and Jacket Leaves

19. RESIDUE SAMPLE HANDLING AND SHIPMENT:

After residue sample collection, store samples in a freezer. If the samples cannot be placed into a freezer within approximately one hour, use an appropriate method of cooling samples in order to maintain integrity. Sample handling and storage methods can be outlined generally in SOP's, but describe methods fully in the Field Data Book. For pre-shipment storage, the samples will be held frozen at temperatures generally less than -18 °C (0 °F), allowing for normal variations of less than 24 hours duration due to freezer cycling, sample movement, etc. Freezer logs will be used to document all sample additions to and removals from storage. All on-site storage temperatures will be monitored and documented. Shipment of frozen samples will be by freezer truck or "express" shipment. Shipments sent via "express shipment" (overnight carriers such as Federal Express or Airborne) will require the addition of quantities of dry ice sufficient to maintain sample integrity while in transit to the laboratory. Document the notification made to the sample destination by use of e-mail, fax, telephone log, field data book communication note, etc. For analysis, send samples to: Bronson Hung, CHE, 3792 Old Davis Road, University of California, Davis, CA 95616-8615 (530) 752-4742, FAX# 530-752-5857; e-mail: bkhung@ucdavis.edu

20. FIELD DOCUMENTATION AND RECORD KEEPING:

All operations, data and observations appropriate to this study should be recorded directly and promptly into the IR-4 Field Data Book or equivalent raw data notebook. The content of the Field Data Book should be sufficiently detailed to completely reconstruct the field trial. At a minimum, collect and maintain the following raw data:

- Names of all personnel conducting specific research functions
- Amendments and deviations from protocol and standard operating procedures
- Test site information
- Plot maps
- Test substance receipt, use and container/substance disposition records
- Test substance storage conditions (including temperatures)
- Data regarding calibration and use of application equipment
- Treatment application data
- Crop maintenance pesticides and cultural practices
- Residue sample identification, collection, storage conditions and handling³
- Residue sample shipping information
- Description of crop destruction, or explanation for lack of destruction
- Meteorological/Irrigation records⁴
- Pass times (if applicable) and other data to confirm amount of material applied to plots
- Other applicable data requested in the IR-4 Field Data Book⁵ that are needed to confirm that the study was conducted in accordance with the protocol.

³ Weight measurements are considered estimates for the samples collected from field or processing trials, and the scales/balances used for this purpose do not need to be maintained in strict adherence to GLP.

⁴Weather/irrigation records are required from planting of annual crops or for a minimum of one month prior to the first application onto perennial crops, until last residue sample collection. These records do not need to be determined under GLP standards.

⁵Reporting soil information from typical farm service soil analysis labs, or past history for the farm, or from official documents, such as the SCS Soil Survey for the test plot area is adequate for this study. The nature of this study is such that soil characteristics do not need to be determined under GLP standards.

IR-4 NATIONAL PESTICIDE CLEARANCE PROTOCOL
OXYFLUORFEN/BROCCOLI

Page 5
PR.NO.: 08806

Date: 01/04

This trial requires collection of data to support the field history of residue samples. Compliance with GLP's is not required for the collection of data associated with crop phytotoxicity.

NOTE: For this study we are specifically requesting that crop phytotoxicity ratings be taken at 1, 3, and 6, weeks after application. Also specify the type of injury (stunting, stand loss, leaf burn, etc.). With the last rating evaluate if the crop is stunted and provide an overall assessment (if the level of phytotoxicity would be acceptable in commercial production).

21. PROTOCOL/SOP MODIFICATIONS - FIELD RESEARCH:

Consult with the Study Director and the Regional/ARS Field Research Coordinator regarding desired changes in the protocol prior to occurrence. If appropriate, an amendment will be issued. Any deviations from the protocol will require the Field Research Director to complete a written report outlining the changes. Provide this report to the Study Director promptly (e.g. within 14 days of occurrence or recognition) for review and signature. All deviations from the approved SOP's also require documentation and approval by the Study Director.

22. FIELD RESEARCH REPORT/ARCHIVING:

The Field Research Director will forward the completed originals of the IR-4 Field Data Book and other raw data to the Regional/ARS Field Research Coordinator as soon as possible after the shipment of residue samples. The Field Research Director will maintain a complete certified true copy of these field documents. The original IR-4 Field Data Book and other raw data will be forwarded to IR-4 Headquarters for reporting and archiving.

23. LABORATORY PERSONNEL/ID NO.: **LAB ID NO.:** **08806.04-CAR04**

LABORATORY RESEARCH DIRECTOR/TESTING LABORATORY:

Dr. Matt Hengel, University of California, Dept. Of Env. Toxicology, 4419 Meyer Hall, One Shields Ave., Davis, CA 95616, (530) 752-2402, FAX# 530-754-8556; e-mail: mjhengel@ucdavis.edu

24(A). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** **08806.04-CA*25**

FIELD RESEARCH DIRECTOR:

Ms. Sharon D. Benzen, USDA, ARS, Crop Improvement & Protection Research, 1636 East Alisal Street, Salinas, CA 93905, (831) 755-2828, FAX# 831-755-2814; e-mail: sbenzen@pw.ars.usda.gov

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Dr. Paul H. Schwartz, BARC-W, ANRI, Bldg. 003, Room 325, 10300 Baltimore Ave., Beltsville, MD 20705-2350 (301) 504-8256, FAX# 301-504-8142; e-mail: schwartp@ba.ars.usda.gov

24(B). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** **08806.04-CA*26**

FIELD RESEARCH DIRECTOR:

Ms. Sharon D. Benzen, USDA, ARS, Crop Improvement & Protection Research, 1636 East Alisal Street, Salinas, CA 93905, (831) 755-2828, FAX# 831-755-2814; e-mail: sbenzen@pw.ars.usda.gov

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Dr. Paul H. Schwartz, BARC-W, ANRI, Bldg. 003, Room 325, 10300 Baltimore Ave., Beltsville, MD 20705-2350 (301) 504-8256, FAX# 301-504-8142; e-mail: schwartp@ba.ars.usda.gov

24(C). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** **08806.04-CA*27**

FIELD RESEARCH DIRECTOR:

Ms. Sharon D. Benzen, USDA, ARS, Crop Improvement & Protection Research, 1636 East Alisal Street, Salinas, CA 93905, (831) 755-2828, FAX# 831-755-2814; e-mail: sbenzen@pw.ars.usda.gov

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Dr. Paul H. Schwartz, BARC-W, ANRI, Bldg. 003, Room 325, 10300 Baltimore Ave., Beltsville, MD 20705-2350 (301) 504-8256, FAX# 301-504-8142; e-mail: schwartp@ba.ars.usda.gov

24(D). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** **08806.04-CA28**

FIELD RESEARCH DIRECTOR:

Mr. Brent Boutwell, U.C. Coop Extension, Imperial County, 1050 East Holton Road, Holtville, CA 92250-9615, (760) 352-9474, FAX# 760-352-0846; Mobile: 760-996-8074; e-mail: beboutwell@ucdavis.edu

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Ms. Rebecca Sisco, Regional Field Coordinator, Western Region IR-4 Project, Univ. of CA, Dept. of Environmental Toxicology, One Shields Ave., 4218 Meyer Hall, Davis, CA 95616 (530) 752-7634; FAX# 530-752-2866; e-mail: rsisco@ucdavis.edu

24(E). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** 08806.04-CA29
FIELD RESEARCH DIRECTOR:

Mr. Michael Straugh, Kearney Agricultural Center, 9240 S. Riverbend Ave., Parlier, CA 93648, (559) 646-6075/6528, FAX# 559-646-6593, Mobile: 559-909-0697; e-mail: MStraugh@uckac.edu

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Ms. Rebecca Sisco, Regional Field Coordinator, Western Region IR-4 Project, Univ. of CA, Dept. of Environmental Toxicology, One Shields Ave., 4218 Meyer Hall, Davis, CA 95616 (530) 752-7634; FAX# 530-752-2866; e-mail: rsisco@ucdavis.edu

24(F). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** 08806.04-OR05
FIELD RESEARCH DIRECTOR:

Ms. Gina Koskela, OR State Univ., NWREC, 15210 N.E. Miley Road, Aurora, OR 97002, (503) 678-1264 ext. 19, FAX# 503-678-5986; e-mail: Gina.P.Koskela@oregonstate.edu

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Ms. Rebecca Sisco, Regional Field Coordinator, Western Region IR-4 Project, Univ. of CA, Dept. of Environmental Toxicology, One Shields Ave., 4218 Meyer Hall, Davis, CA 95616 (530) 752-7634; FAX# 530-752-2866; e-mail: rsisco@ucdavis.edu

24(G). FIELD PERSONNEL/ID NO.: **FIELD ID NO.:** 08806.04-TX17
FIELD RESEARCH DIRECTOR:

Ms. Lori Gregg, TX Agric. Exp. Station, TX A&M Univ. Agri. Res. & Ext. Center, 2415 E Hwy. 83, Weslaco, TX 78596, (956) 969-5655, FAX# 956-969-5620; e-mail: l-gregg@tamu.edu

REGIONAL/ARS FIELD RESEARCH COORDINATOR:

Dr. Charles Meister, Food & Env. Tox. Lab., Dept. of Food Science & Human Nutrition, Bldg 685 SW 23rd Drive, IFAS, Univ. of Florida, P.O. Box 110720, Gainesville, FL 32611-0720, (352) 392-2399, FAX# 352-392-1988; e-mail: CMeister@mail.ifas.ufl.edu

25. LABORATORY SAMPLE INVENTORY:

Treated and untreated samples of broccoli will be received from each of the field sites in Section 24. Notify appropriate Field Research Director and Regional/ARS Field Research Coordinator of sample receipt.

26. LABORATORY SAMPLE IDENTIFICATION:

Each sample (raw commodity, crop fractions, storage stability, method validation, etc.) is to be assigned a unique laboratory sample number by the laboratory personnel. A cross-reference must be maintained between the assigned laboratory sample number and the identification utilized in the Residue Sample Shipping and Identification Sheet.

27. LABORATORY SAMPLE STORAGE/PREPARATION:

Store samples in a limited access area at temperatures that will maintain frozen sample integrity (generally less than -20°C) until extraction. The samples may be stored whole or ground, depending on the standard procedure of the analytical laboratory. However, if maceration will cause residue deterioration, then samples must be stored whole until analysis. Do not composite samples. Generally, sample extracts should be stored at < 4°C for no longer than 14 days before analysis. Contact Study Director if samples extracts are stored greater than 14 days prior to analysis. All storage temperatures, conditions and location of sample storage are to be monitored and documented.

28. LABORATORY REFERENCE SUBSTANCE:

Obtain the laboratory reference substance(s), oxyfluorfen, from the Registrant. Contact Brian Bret, Dow AgroSciences, (916) 780-7477; FAX# 916-780-7478; e-mail: bibret@dow.com to procure the proper material. Document the date the analytical standards are received, the source, stated purity, storage conditions, and expiration date. Use only reference standards that have been characterized to meet GLP standards. Archival and characterization of the reference substance (purity, identity, stability and solubility) is the responsibility of the registrant.

29. ANALYTICAL METHODOLOGY:

REFERENCE METHOD:

Oxyfluorfen (GOAL) Crop Residue Analytical Method. Rohm and Haas Technical Report No. 34-94-150, 1994.

REFERENCE METHOD MODIFICATIONS/METHOD VALIDATION:

The above listed Reference Method(s) may be modified if needed for the test matrix. The Reference Method, along with any modifications must be validated on each crop fraction prior to residue sample analysis of that

crop fraction. To validate the method, fortify some of the control samples in triplicate with oxyfluorfen at a minimum of 2 concentration levels; lowest level of method validation (LLMV, 0.01 ppm or lower) and 0.1 ppm. Generally, 70-120% is the acceptable recovery range. Document the exact procedures. A minimum of 6 fortification samples (recovery spikes) at the lowest level of method validation (LLMV) is required prior to completion of the analytical phase of the study. The acceptable recovery range is 70-120%. Documented approval from the Study Director is needed for recoveries outside of this range. Document the exact procedures for sample analysis. This validated step-by-step Working Method should incorporate all changes from the Reference Method. Provide the Study Director with a copy of this Working Method and results of method validation prior to treated sample analysis. If the Working Method has been used successfully on the test matrix or a similar matrix, the Study Director may waive the requirement for method validation. Contact the Study Director for details.

SAMPLE ANALYSIS:

Samples will be analyzed for the residues of oxyfluorfen following the Working Method. For each field trial associated with this study, analyze at least one untreated and all treated residue samples for each matrix. Contact the Study Director if residues above the lowest level of method validation for each matrix are detected in the untreated samples. Any changes or modifications to the Working Method require Study Director approval. Whenever possible, notify the Study Director prior to occurrence. Any change or modification to the Working Method should be documented in the raw data and discussed in the final report. A typical analytical set (or run) should consist of calibration standards, untreated sample(s), concurrent recovery sample(s), and treated sample(s). Each analytical set must begin and end with a calibration standard. Additional calibration standards should be injected with sample analysis to ensure goodness of fit to the standard curve. Over the course of residue sample analysis, adequate concurrent recovery samples that bracket the actual residues should be analyzed. At least one concurrent fortification sample should be analyzed per analytical set. The Study Director should be immediately notified if concurrent recoveries deviate from the acceptable recovery range of 70% to 120%. All efforts will be made to resolve existing recovery problems before continuing forward with additional analytical sets. If residues in samples are above the highest Working Method validation concentration, additional recovery samples at levels above actual residues must be run in triplicate as soon as practical. A minimum of 6 fortification samples (recovery spikes) at the lowest level of method validation (LLMV) is required prior to completion of the analytical phase of the study.

STORAGE STABILITY ANALYSIS:

No storage stability data is needed in this study.

STATISTICAL METHOD(S):

Utilize regression analysis to determine the linearity of the standard curve (r^2) or the goodness of fit if the standard curve is non-linear. Criteria for acceptance of the standard curve(s) or other statistical methods shall be determined by Laboratory Research Director and documented in the raw data.

30. DISPOSITION OF SAMPLES:

A minimum of 100 g or all (if less than 100 g) of each of the remaining frozen treated and untreated crop samples is to be retained for at least 12 months after submission of the laboratory report. Long term fortified storage study samples shall be retained for a period of 1 to 5 years, as appropriate, after submission of the final report. Sample extracts can be disposed of after data analysis. The Study Director is to be contacted prior to discarding samples.

31. LABORATORY PROTOCOL/SOP MODIFICATIONS - LABORATORY RESEARCH:

Consult with the Study Director regarding desired changes in the protocol prior to occurrence. If appropriate, an amendment will be issued. Any unauthorized changes to the protocol will require the Laboratory Research Director to complete a written report outlining the changes. This report should be provided to the Study Director promptly (e.g. within 14 days of occurrence) for review and signature. All deviations from the approved SOP's also require documentation and approval by the Study Director.

32. LABORATORY DOCUMENTATION AND RECORD KEEPING:

All operations, data and observations shall be recorded in the analyst's notebook and log books, which must be signed and dated on date of entry. At a minimum, collect and maintain the following raw data:

- Analytical standard(s) receipt, use and disposition records
- Analytical standard(s) storage conditions
- Analytical standard(s) dilution calculations and preparation records
- Sample storage conditions and locations
- Calculation work sheets

- All chromatograms, including those that are not reported
- Chain of custody records
- Deviations from protocol, Working Method and/or standard operating procedures
- Name of personnel conducting specific research functions
- Sample analysis worksheets
- Storage stability fortification records
- Concurrent recovery fortification records

A study file shall be developed and maintained by the Laboratory Research Director in conjunction with the analysis. It will contain a copy of the protocol, all pertinent raw data, documentation, records, correspondence, and the final analytical summary report. In addition, records of equipment maintenance and calibrations will be kept and periodically archived.

33. LABORATORY RESEARCH REPORT:

The analytical summary report sent to IR-4 HQ shall contain, but not be limited to:

- Applicable method validation data
- Applicable storage stability data
- Residue levels for control and treated samples with concurrent fortified recoveries
- Complete copy of the analytical Working Method
- Any modifications or deviations from the protocol and/or Working Method
- Completed IR-4 residue data reporting form or appropriate reporting form which includes information listed on the IR-4 generic residue data reporting form
- A minimum of 10 representative chromatograms of treated samples (if fewer than 10 submit all), a minimum of three chromatograms each of control and fortified control samples, chromatograms (one of each concentration) for at least one set of calibration standards for each compound analyzed, and any chromatograms of samples with unusual or inconsistent results
- Summary of quantitative data associated with samples and spike recovery samples should be provided (e.g. peak heights, injection volumes, sample sizes, final volumes, etc.)
- Clearly presented example calculations or statistical evaluations
- Discussion of results (including purpose of method modifications, sample storage conditions, etc.)
- Summary data associated with calibration standards (dilution and use records, calibration curves, etc.)

34. LABORATORY ARCHIVES:

When the final analytical summary report is completed and sent to the sponsor representative, all original raw data including a "true copy" of the final analytical summary report shall be secured in the archives of the Laboratory Research Director/Testing Facility.

TITLE: Broadleaf Weed Control in Transplanted Cole Crops
 CREATED: 07/24/2006 REVISED: 12/20/2006 COMPLETED: Y
 PROJECT TYPE: HERBICIDE
 LOCATION: RAREC RESEARCHED BY: B. Majek
 DESIGN: RANDOMIZED COMPLETE BLOCK DESIGN
 PLOT SIZE: 5.00 FT WIDE X 20.00 FT LONG
 PLOT AREA: 100.00 SFT

REPS: 04

TRT NUM	005 RAW 10/24/06 P BRSOK	006 RAW 10/24/06 P GASCI	007 CALC 12/11/06 P BRSOK	008 CALC 12/11/06 P BRSOK
	VAR 01 PHY % 1.00 PL ALL	CON % 1.00 PL ALL	VAR 01 YLD BU 1.00 A HD	VAR 01 YLD LB 1.00 A HD
1A»	0	100	281	1467
2A	0	0	290	1133
3A B	0	100	290	1757
4A	0	0	281	1235
5A	0	0	272	1089
6A	0	0	290	1264
7A B»	18	93	290	1467
8A B»	20	93	281	1655
LSD.05	2.60	3.40	25.59	289.46
F	**	**	NS	**
SD	1.25	1.64	12.30	139.16
COV	37.71	4.81	6.12	14.23
DAT 01	46	46	94	94
DAT 02	46	46	94	94
DAT 03	21	21	69	69

» = SUPPLEMENTAL CHEMICAL

* TIMING CODES

00 = UNTRCHK / UNTREATED TIMING
 01 = PRETRA / PRETRANSPLANT 09/08/2006 (1)
 02 = POSTTR / POST TRANSPLANT 09/08/2006 (2)
 03 = POSPOS / POSTEMERGENCE 10/03/2006 (3)

H#	CUSTOM#1	CUSTOM#2	EV.DATE	S#	TYP	SPECIE	STAGE	RAW	PRT	SYM	MTH	CNF	BASIS	C.M	CTRT	SS	NOTE
001	BRSOK	% INJURY	09/28/2006	01	P	BRSOK		RAW	ALL	PHY	%	H	1.00 PL	NO	0001	0	N
002	GASCI	CON %	09/28/2006	02	P	GASCI		RAW	ALL	CON	%	H	1.00 PL	NO	0001	0	N
003	BRSOK	% INJURY	10/10/2006	01	P	BRSOK		RAW	ALL	PHY	%	H	1.00 PL	NO	0001	0	N
004	GASCI	CON %	10/10/2006	02	P	GASCI		RAW	ALL	CON	%	H	1.00 PL	NO	0001	0	N
005	BRSOK	% INJURY	10/24/2006	01	P	BRSOK		RAW	ALL	PHY	%	H	1.00 PL	NO	0001	0	N
006	GASCI	CON %	10/24/2006	02	P	GASCI		RAW	ALL	CON	%	H	1.00 PL	NO	0001	0	N
007	BRSOK	BU/ACRE	12/11/2006	01	P	BRSOK		CALC	HD	YLD	BU	H	1.00 A	UDC	0001	0	N
008	BRSOK	LB/ACRE	12/11/2006	01	P	BRSOK		CALC	HD	YLD	LB	H	1.00 A	UDC	0001	0	N

* VARIETY/SPECIE INFO CODES

VAR 01 = GYPSY

* SPECIES COMMON NAME - VARIETY/SPECIE INFO (IF APPLICABLE)

01 = GYPSY

* USER DEFINED CALCULATIONS

US 028/06/01 000 A1--- 007 -- {RAW}*36.3

US 028/06/01 000 A1--- 008 -- {RAW}*580.8

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Crop Name
Rating Date 10-15-07
Rating Data Type YIELD
Rating Unit KG/15 HD

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage	
1	TRIFLURALIN				PPI	17.5
2	S-METOLACHLOR	7.62	EC	0.94	PRETP	20.0
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP	20.8
4	OXYFLUORFEN	2	L	0.5	PRETP	24.4
5	OXYFLUORFEN	4	F	0.5	PRETP	21.6
6	CLOMAZONE	3	ME	0.5	PRETP	21.1
7	PENDIMETHALIN	3.8	CS	1.0	PSSTP	20.7
8	PENDIMETHALIN	3.8	CS	1.0	PSTTP	21.0
9	OXYFLUORFEN	2	L	0.5	PRETP	23.8
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP	
10	OXYFLUORFEN	4	F	0.5	PRETP	21.2
10	S-METOLACHLOR	7.62	EC	0.94	PST-TP	
11	OXYFLUORFEN	4	F	0.5	PRETP	20.8
11	S-METOLACHLOR	7.62	EC	0.94	PRETP	
12	S-METOLACHLOR	7.62	EC	0.94	PSTTP	21.6
12	OXYFLUORFEN	2	L	0.0625	PST-2WK	
13	S-METOLACHLOR	7.62	EC	0.94	PSTTP	21.6
13	OXYFLUORFEN	4	F	0.0625	PST-2WK	
14	CLOMAZONE	3	ME	0.5	PRETP	24.7
14	OXYFLUORFEN	2	L	0.5	PRETP	
15	CLOMAZONE	3	ME	0.5	PRETP	21.6
15	OXYFLUORFEN	4	F	0.5	PRETP	
16	CLOMAZONE	3	ME	0.5	PRETP	22.8
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP	
17	PENDIMETHALIN	3.8	CS	1.0	PRETP	20.6
17	OXYFLUORFEN	4	F	0.5	PRETP	
18	SULFENTRAZONE	4	F	0.1	PRETP	17.5
18	S-METOLACHLOR	7.62	EC	0.94	PRETP	
LSD (P=.10)						4.27
Standard Deviation						3.08
CV						14.45

Horticulture Department
Cornell University

ON-FARM CABBAGE TRIAL - 2007 - ED HANSON

Trial ID: OFCABTRLI07

Location: SENECA CO.

Investigator: Dr. Robin Bellinder

Crop Name						AMBEL	GASCI	CAPBP	MUST. SPP.	CABBAGE
Rating Date						08-03-07	08-03-07	08-03-07	08-03-07	08-03-07
Rating Data Type						CNTRL	CNTRL	CNTRL	CNTRL	INJURY
Rating Unit						(%)	(%)	(%)	(%)	(%)
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage					
1	TRIFLURALIN				PPI	0	17	17	17	0
2	S-METOLACHLOR	7.62	EC	0.94	PRETP	0	92	82	82	0
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP	0	92	85	85	0
4	OXYFLUORFEN	2	L	0.5	PRETP	95	93	95	96	0
5	OXYFLUORFEN	4	F	0.5	PRETP	95	98	98	96	0
6	CLOMAZONE	3	ME	0.5	PRETP	53	67	70	67	0
7	PENDIMETHALIN	3.8	CS	1.0	PSSTP	50	37	33	33	0
8	PENDIMETHALIN	3.8	CS	1.0	PSTTP	47	30	30	30	0
9	OXYFLUORFEN	2	L	0.5	PRETP	83	96	95	96	0
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP					
10	OXYFLUORFEN	4	F	0.5	PRETP	83	96	98	98	0
10	S-METOLACHLOR	7.62	EC	0.94	PST-TP					
11	OXYFLUORFEN	4	F	0.5	PRETP	87	99	98	98	0
11	S-METOLACHLOR	7.62	EC	0.94	PRETP					
12	S-METOLACHLOR	7.62	EC	0.94	PSTTP	85	95	93	93	20
12	OXYFLUORFEN	2	L	0.0625	PST-2WK					
13	S-METOLACHLOR	7.62	EC	0.94	PSTTP	90	93	93	93	8
13	OXYFLUORFEN	4	F	0.0625	PST-2WK					
14	CLOMAZONE	3	ME	0.5	PRETP	92	93	95	95	0
14	OXYFLUORFEN	2	L	0.5	PRETP					
15	CLOMAZONE	3	ME	0.5	PRETP	92	90	95	95	0
15	OXYFLUORFEN	4	F	0.5	PRETP					
16	CLOMAZONE	3	ME	0.5	PRETP	78	98	93	93	0
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP					
17	PENDIMETHALIN	3.8	CS	1.0	PRETP	92	63	92	92	0
17	OXYFLUORFEN	4	F	0.5	PRETP					
18	SULFENTRAZONE	4	F	0.1	PRETP	33	78	85	82	0
18	S-METOLACHLOR	7.62	EC	0.94	PRETP					
LSD (P=.10)						10.5	10.7	10.2	10.0	0.9
Standard Deviation						7.6	7.7	7.4	7.2	0.7
CV						11.78	9.77	9.17	9.04	43.23

Horticulture Department
Cornell University

ON-FARM CABBAGE TRIAL - 2007 - ED HANSON

Trial ID: OFCABTRLI07

Location: SENECA CO.

Investigator: Dr. Robin Bellinder

Crop Description

Variety: SUPER ELITE

Planting Date: 07-10-07

Row Spacing, Unit: 30 IN

Site and Design

Plot Width, Unit: 10 FT

Plot Length, Unit: 20 FT

Replications: 3 Study Design: Randomized Complete Block

Application Description

Application Date:	07-10-07	07-31-07	08-15-07
Time of Day:	9:00 AM	9:00 AM	3:00 PM
Application Timing:	PRE/PSTTP	PST-2WK	PST
Air Temperature, Unit:	80 F	74 F	80 F
Wind Velocity, Unit:	1 MPH	1 MPH	4 MPH
Wind Direction:	W	N	SW
Soil Temperature, Unit:	73 F	70 F	76 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	20	0	

Crop Stage At Each Application

Stage Scale Used:	CABBAGE	CABBAGE	CABBAGE
Stage Majority, Percent:	TP(3-L)	4-5L	12-14"

Pest Stage At Each Application

Pest 1 Code, Disc., Scale:	GASCI	GASCI	GASCI
Stage Majority, Percent:	PRE	COT	COT-10
Pest 2 Code, Disc., Scale:	AMBEL	AMBEL	AMBEL
Stage Majority, Percent:	PRE	COT-2L	4-10L
Pest 3 Code, Disc., Scale:	CAPBP	CAPBP	CAPBP
Stage Majority, Percent:	PRE	COT	1-4"

Application Equipment

Appl. Equipment:	10FT CO2 BP	10FT CO2 BP	10FT CO2 BP
Operating Pressure, Unit:	32 PSI	36 PSI	34 PSI
Nozzle Type:	XRFLATFAN	XRFLATFAN	XRFLATFAN
Nozzle Size:	11103VS	11103VS	11103VS
Nozzle Spacing, Unit:	30 INCH	30 INCH	30 INCH
Boom Length, Unit:	10 FT	10 FT	10 FT
Boom Height, Unit:	18 INCH	18 INCH	18 INCH
Ground Speed, Unit:	2.5 MPH	2.5 MPH	2.5 MPH
Carrier:	H2O	H2O	H2O
Spray Volume, Unit:	34 GPA	34 GPA	34 GPA

Date	By	Notes
08-15-07		CLOPYRALID(0.14 LB AI/A) APPLIED TO TRTS 1,2,3,6,7,8

COLE CROP HERBICIDE SCREEN-2007

Trial ID: COLTRL

Location: N-2

Investigator: Dr. Robin Bellinder

Crop Description

Broccoli

Variety: PATRON

Planting Date: 05-22-07

Row Spacing, Unit: 30 IN Spacing Within Row, Unit: 15 IN

Red Cabbage

Variety: RED JEWEL

Planting Date: 05-22-07

Row Spacing, Unit: 30 IN Spacing Within Row, Unit: 15 IN

Brussels Sprouts

Variety: JADE CROSS E.

Planting Date: 05-22-07

Row Spacing, Unit: 30 IN Spacing Within Row, Unit: 18 IN

Cauliflower

Variety: FREMONT

Planting Date: 05-22-07

Row Spacing, Unit: 30 IN Spacing Within Row, Unit: 15 IN

Site and Design

Plot Width, Unit: 10 FT

Plot Length, Unit: 20 FT

Replications: 3 Study Design: Randomized Complete Block

Field Prep./Maintenance:

PLOWED 5/11; FERTILIZED 700# 13-13-13; HARROWED 5/15

Soil Description

Description Name: N-2

% Sand: 45.2 % OM: 2.2 Texture: GRAVEL LOAM

% Silt: 41.6 pH: 6 Soil Name: HOWARD

% Clay: 13.2

Application Description

Application Date:	05-21-07	05-22-07	06-25-07
Time of Day:	10:00 AM	3:30 PM	1:45 PM
Application Timing:	PRE-TP	PST-TP	4+ LVS
Air Temperature, Unit:	54 F	63 F	88 F
Wind Velocity, Unit:	3 MPH	1 MPH	1 MPH
Wind Direction:	N	NE	SW
Soil Temperature, Unit:	50 F	63 F	86 F
Soil Moisture:	DRY	DRY	DRY
% Cloud Cover:	0	50	10

Pest Stage At Each Application

Pest 1 Code, Disc., Scale:	CHEAL	CHEAL	CHEAL
Stage Majority, Percent:	PRE	PRE	4-10L
Pest 2 Code, Disc., Scale:	POLCO	POLCO	POLCO
Stage Majority, Percent:	PRE	PRE	6-12L

Application Equipment

Appl. Equipment:	10FT CO2 BP	10FT CO2 BP	10FT CO2 BP
Operating Pressure, Unit:	32 PSI	32 PSI	32 PSI
Nozzle Type:	XRFLATFAN	XRFLATFAN	XRFLATFAN
Nozzle Size:	11103VS	11103VS	11103VS
Nozzle Spacing, Unit:	30 INCH	30 INCH	30 INCH
Boom Length, Unit:	10 FT	10 FT	10 FT
Boom Height, Unit:	18 INCH	18 INCH	18 INCH
Ground Speed, Unit:	2.5 MPH	2.5 MPH	2.5 MPH
Carrier:	H2O	H2O	H2O
Spray Volume, Unit:	34 GPA	34 GPA	34 GPA

Date	By	Notes
05-24-07		IRRIGATED 0.50"

Horticulture Department
Cornell University

COLE CROP HERBICIDE SCREEN-2007

Trial ID: COLTRL

Location: N-2

Investigator: Dr. Robin Bellinder

Crop Name						BROCCOLI	BROCCOLI	BROCCOLI	BROCCOLI
Rating Date						06-07-07	07-08-07	07-23-07	07-23-07
Rating Data Type						STUNTING	STUNTING	HARVEST	HARVEST
Rating Unit						(%)	(%)	# CROWNS	KG/20'
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage				
1	WEEDY CHECK					0	20	8	1.9
2	HANDWEEDED					0	0	8	1.9
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	0	8	2.3
3	SULFENTRAZONE	4	F	0.1	POST				
4	SULFENTRAZONE	4	F	0.1	PRETP	0	0	8	1.8
5	SULFENTRAZONE	4	F	0.2	PRETP	10	0	8	2.1
6	CLOMAZONE	3	ME	0.5	PRETP	5	0	6	1.2
7	OXYFLUORFEN	4	F	0.5	PRETP	0	0	8	2.0
8	OXYFLUORFEN	2	XL	0.5	PRETP	0	0	9	2.1
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	0	9	2.5
9	OXYFLUORFEN	4	F	0.0625	POST				
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	0	6	1.8
10	OXYFLUORFEN	4	F	0.125	POST				
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	0	0	10	2.2
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	5	0	6	1.4
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	7	0	10	2.1
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	15	0	8	1.6
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	0	9	2.7
15	SULFENTRAZONE	4	F	0.1	PSTTP72H				
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	10	9	2.6
16	SULFENTRAZONE	4	F	0.1	POST				
16	NIS .25% V/V								
LSD (P=.10)						7.8	3.0	3.0	1.04
Standard Deviation						5.6	2.2	2.2	0.75
CV						174.55	115.47	27.04	37.23

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Crop Name						BROCCOLI	BROCCOLI	BROCCOLI	BROCCOLI
Rating Date						07-27-07	07-27-07	08-01-07	08-01-07
Rating Data Type						HARVEST	HARVEST	HARVEST	HARVEST
Rating Unit						# CROWNS	KG/20'	# CROWNS	KG/20'

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage				
1	WEEDY CHECK					4	1.0	2	0.3
2	HANDWEEDED					5	0.9	1	0.2
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	1.2	2	0.4
3	SULFENTRAZONE	4	F	0.1	POST				
4	SULFENTRAZONE	4	F	0.1	PRETP	5	1.3	1	0.1
5	SULFENTRAZONE	4	F	0.2	PRETP	5	1.1	1	0.4
6	CLOMAZONE	3	ME	0.5	PRETP	8	1.5	2	0.4
7	OXYFLUORFEN	4	F	0.5	PRETP	6	1.4	1	0.1
8	OXYFLUORFEN	2	XL	0.5	PRETP	5	1.2	1	0.2
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	1.0	3	0.4
9	OXYFLUORFEN	4	F	0.0625	POST				
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	7	1.5	1	0.2
10	OXYFLUORFEN	4	F	0.125	POST				
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	4	0.9	0	0.0
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	7	1.5	1	0.2
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	4	0.9	2	0.3
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	6	1.2	2	0.3
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	1.1	0	0.0
15	SULFENTRAZONE	4	F	0.1	PSTTP72H				
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	6	1.2	0	0.1
16	SULFENTRAZONE	4	F	0.1	POST				
16	NIS .25% V/V								
LSD (P=.10)						2.9	0.69	1.4	0.28
Standard Deviation						2.1	0.50	1.0	0.20
CV						40.39	42.3	83.42	92.67

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Crop Name						BROCCOLI	BROCCOLI	CABBAGE	CABBAGE
Rating Date								06-07-07	07-08-07
Rating Data Type						TTL HRVST	TTL HRVST	STUNTING	STUNTING
Rating Unit						KG/20'	G/CROWN	(%)	(%)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage				
1	WEEDY CHECK					3.1	226.4	0	23
2	HANDWEEDED					3.0	222.6	0	0
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.8	252.5	0	0
3	SULFENTRAZONE	4	F	0.1	POST				
4	SULFENTRAZONE	4	F	0.1	PRETP	3.2	237.8	0	0
5	SULFENTRAZONE	4	F	0.2	PRETP	3.6	244.9	0	0
6	CLOMAZONE	3	ME	0.5	PRETP	3.1	196.1	5	0
7	OXYFLUORFEN	4	F	0.5	PRETP	3.5	236.4	0	0
8	OXYFLUORFEN	2	XL	0.5	PRETP	3.4	240.6	0	0
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.9	264.5	13	0
9	OXYFLUORFEN	4	F	0.0625	POST				
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.5	247.6	3	0
10	OXYFLUORFEN	4	F	0.125	POST				
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	3.1	217.2	0	0
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	3.1	216.5	0	0
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	3.2	211.0	5	0
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	3.1	207.8	15	0
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.8	267.4	3	0
15	SULFENTRAZONE	4	F	0.1	PSTTP72H				
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.9	260.0	3	5
16	SULFENTRAZONE	4	F	0.1	POST				
16	NIS .25% V/V								

LSD (P=.10)	0.63	45.41	5.7	3.7
Standard Deviation	0.45	32.77	4.1	2.6
CV	13.31	13.98	135.14	149.18

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Crop Name						CABBAGE	CABBAGE	CABBAGE	CABBAGE	CABBAGE
Rating Date						07-27-07	07-27-07	08-01-07	08-01-07	08-10-07
Rating Data Type						HARVEST	HARVEST	HARVEST	HARVEST	HARVEST
Rating Unit						# HEADS	KG/20'	# HEADS	KG/20'	# HEADS

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage					
1	WEEDY CHECK					0	0.0	2	1.6	4
2	HANDWEEDED					3	3.0	4	3.0	8
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	2.9	5	4.5	5
3	SULFENTRAZONE	4	F	0.1	POST					
4	SULFENTRAZONE	4	F	0.1	PRETP	3	3.0	5	4.0	5
5	SULFENTRAZONE	4	F	0.2	PRETP	2	2.2	6	5.8	6
6	CLOMAZONE	3	ME	0.5	PRETP	2	1.8	3	2.7	8
7	OXYFLUORFEN	4	F	0.5	PRETP	3	3.5	4	3.4	6
8	OXYFLUORFEN	2	XL	0.5	PRETP	1	1.4	8	6.3	5
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	2.6	5	3.9	5
9	OXYFLUORFEN	4	F	0.0625	POST					
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	3.1	6	4.7	5
10	OXYFLUORFEN	4	F	0.125	POST					
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	2	2.1	4	2.0	4
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	3	2.8	4	3.4	6
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	3	3.6	4	3.3	5
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	3	2.7	3	2.3	4
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	3.6	4	3.6	6
15	SULFENTRAZONE	4	F	0.1	PSTTP72H					
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	3.5	5	4.9	6
16	SULFENTRAZONE	4	F	0.1	POST					
16	NIS .25% V/V									
LSD (P=.10)						2.0	1.95	2.5	2.38	3.0
Standard Deviation						1.5	1.41	1.8	1.72	2.1
CV						59.0	53.55	41.38	46.23	39.22

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Crop Name
Rating Date
Rating Data Type
Rating Unit

CABBAGE
08-10-07
HARVEST
KG/20'

CABBAGE
TTL HRVST
KG/20'

CABBAGE
TTL HRVST
G/HEAD

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage			
1	WEEDY CHECK					2.5	5.2	696.1
2	HANDWEEDED					5.8	11.8	806.8
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.9	11.3	891.2
3	SULFENTRAZONE	4	F	0.1	POST			
4	SULFENTRAZONE	4	F	0.1	PRETP	3.6	10.6	821.9
5	SULFENTRAZONE	4	F	0.2	PRETP	4.5	12.5	890.0
6	CLOMAZONE	3	ME	0.5	PRETP	4.7	9.3	712.6
7	OXYFLUORFEN	4	F	0.5	PRETP	4.2	11.2	851.1
8	OXYFLUORFEN	2	XL	0.5	PRETP	4.4	12.0	842.7
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	4.2	10.7	870.1
9	OXYFLUORFEN	4	F	0.0625	POST			
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.7	11.6	848.1
10	OXYFLUORFEN	4	F	0.125	POST			
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	2.9	7.0	738.1
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	4.0	10.2	788.4
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	3.4	10.3	908.1
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	2.8	7.8	862.7
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	4.5	11.7	933.2
15	SULFENTRAZONE	4	F	0.1	PSTTP72H			
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.9	12.3	854.3
16	SULFENTRAZONE	4	F	0.1	POST			
16	NIS .25% V/V							
LSD (P=.10)						1.85	2.65	137.39
Standard Deviation						1.34	1.91	99.04
CV						33.97	18.45	11.9

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Crop Name BRUSSELS SPROUTS BRUSSELS SPROUTS
 Rating Date 06-07-07 07-08-07
 Rating Data Type STUNTING STUNTING
 Rating Unit (%) (%)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage		
1	WEEDY CHECK					0	20
2	HANDWEEDED					0	0
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	0
3	SULFENTRAZONE	4	F	0.1	POST		
4	SULFENTRAZONE	4	F	0.1	PRETP	0	0
5	SULFENTRAZONE	4	F	0.2	PRETP	8	0
6	CLOMAZONE	3	ME	0.5	PRETP	0	0
7	OXYFLUORFEN	4	F	0.5	PRETP	0	0
8	OXYFLUORFEN	2	XL	0.5	PRETP	0	0
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	15	0
9	OXYFLUORFEN	4	F	0.0625	POST		
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3	0
10	OXYFLUORFEN	4	F	0.125	POST		
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	0	0
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	5	0
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	5	0
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	10	0
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	12	0
15	SULFENTRAZONE	4	F	0.1	PSTTP72H		
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	0
16	SULFENTRAZONE	4	F	0.1	POST		
16	NIS .25% V/V						
LSD (P=.10)						8.1	0.0
Standard Deviation						5.8	0.0
CV						147.59	0.0

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Crop Name							BRUSSELS SPROUTS	BRUSSELS SPROUTS
Rating Date							09-18-07	09-18-07
Rating Data Type							TTL HARVEST	TTL HARVEST
Rating Unit							# STALKS	KG/20'
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage			
1	WEEDY CHECK					7.7	4.2	
2	HANDWEEDED					8.7	8.2	
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	8.0	7.4	
3	SULFENTRAZONE	4	F	0.1	POST			
4	SULFENTRAZONE	4	F	0.1	PRETP	8.7	7.1	
5	SULFENTRAZONE	4	F	0.2	PRETP	7.7	5.8	
6	CLOMAZONE	3	ME	0.5	PRETP	7.3	6.0	
7	OXYFLUORFEN	4	F	0.5	PRETP	8.0	7.1	
8	OXYFLUORFEN	2	XL	0.5	PRETP	7.7	7.4	
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	7.0	6.2	
9	OXYFLUORFEN	4	F	0.0625	POST			
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	8.3	8.2	
10	OXYFLUORFEN	4	F	0.125	POST			
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	8.3	5.3	
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	8.7	6.2	
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	8.0	6.3	
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	6.7	5.8	
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	8.3	7.6	
15	SULFENTRAZONE	4	F	0.1	PSTTP72H			
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	8.7	8.5	
16	SULFENTRAZONE	4	F	0.1	POST			
16	NIS .25% V/V							
LSD (P=.10)						0.88	1.36	
Standard Deviation						0.64	0.98	
CV						7.99	14.6	

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Crop Name						CAULIFLOWER	CAULIFLOWER	CAULIFLOWER
Rating Date						06-07-07	07-08-07	07-27-07
Rating Data Type						STUNTING	STUNTING	HARVEST
Rating Unit						(%)	(%)	# HEADS

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage			
1	WEEDY CHECK					0	20	4
2	HANDWEEDED					0	0	4
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	0	8
3	SULFENTRAZONE	4	F	0.1	POST			
4	SULFENTRAZONE	4	F	0.1	PRETP	0	0	8
5	SULFENTRAZONE	4	F	0.2	PRETP	5	0	8
6	CLOMAZONE	3	ME	0.5	PRETP	5	0	3
7	OXYFLUORFEN	4	F	0.5	PRETP	0	0	4
8	OXYFLUORFEN	2	XL	0.5	PRETP	0	0	9
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	18	0	5
9	OXYFLUORFEN	4	F	0.0625	POST			
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	7	0	6
10	OXYFLUORFEN	4	F	0.125	POST			
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	3	0	9
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	12	0	7
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	5	0	7
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	17	0	6
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	8	0	5
15	SULFENTRAZONE	4	F	0.1	PSTTP72H			
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	10	20	6
16	SULFENTRAZONE	4	F	0.1	POST			
16	NIS .25% V/V							
LSD (P=.10)						9.7	1.7	3.5
Standard Deviation						7.0	1.3	2.5
CV						125.05	50.0	41.15

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Crop Name CAULIFLOWER CAULIFLOWER CAULIFLOWER
 Rating Date 07-27-07 08-01-07 08-01-07
 Rating Data Type HARVEST HARVEST HARVEST
 Rating Unit KG/20' # HEADS KG/20'

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage	07-27-07 HARVEST KG/20'	08-01-07 HARVEST # HEADS	08-01-07 HARVEST KG/20'
1	WEEDY CHECK					1.8	3	1.3
2	HANDWEEDED					3.2	5	4.3
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5.0	5	3.0
3	SULFENTRAZONE	4	F	0.1	POST			
4	SULFENTRAZONE	4	F	0.1	PRETP	4.7	5	2.6
5	SULFENTRAZONE	4	F	0.2	PRETP	6.0	3	2.1
6	CLOMAZONE	3	ME	0.5	PRETP	1.5	5	3.2
7	OXYFLUORFEN	4	F	0.5	PRETP	2.9	5	2.5
8	OXYFLUORFEN	2	XL	0.5	PRETP	6.6	3	2.3
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.0	4	2.9
9	OXYFLUORFEN	4	F	0.0625	POST			
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.4	4	3.1
10	OXYFLUORFEN	4	F	0.125	POST			
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	5.6	6	4.1
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	4.8	5	2.4
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	5.1	5	3.3
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	3.7	5	2.7
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.7	3	3.0
15	SULFENTRAZONE	4	F	0.1	PSTTP72H			
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	3.7	5	3.0
16	SULFENTRAZONE	4	F	0.1	POST			
16	NIS .25% V/V							
LSD (P=.10)						2.77	3.0	2.31
Standard Deviation						2.00	2.1	1.67
CV						49.49	48.47	58.28

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Crop Name CAULIFLOWER CAULIFLOWER CAULIFLOWER
 Rating Date 08-10-07 08-10-07
 Rating Data Type HARVEST HARVEST TTL HRVST
 Rating Unit # HEADS KG/20' KG/20'

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage			
1	WEEDY CHECK					7	2.8	5.8
2	HANDWEEDED					5	4.0	11.6
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	2	0.8	8.8
3	SULFENTRAZONE	4	F	0.1	POST			
4	SULFENTRAZONE	4	F	0.1	PRETP	3	3.4	10.7
5	SULFENTRAZONE	4	F	0.2	PRETP	4	2.9	11.0
6	CLOMAZONE	3	ME	0.5	PRETP	7	3.6	8.4
7	OXYFLUORFEN	4	F	0.5	PRETP	5	3.5	8.9
8	OXYFLUORFEN	2	XL	0.5	PRETP	2	1.4	10.3
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	6	4.2	10.1
9	OXYFLUORFEN	4	F	0.0625	POST			
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	4	2.6	9.2
10	OXYFLUORFEN	4	F	0.125	POST			
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	1	0.5	10.2
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	4	4.2	11.4
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	3	3.1	11.5
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	4	2.3	8.7
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	5	4.0	10.7
15	SULFENTRAZONE	4	F	0.1	PSTTP72H			
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	4	2.2	8.9
16	SULFENTRAZONE	4	F	0.1	POST			
16	NIS .25% V/V							
LSD (P=.10)						2.8	2.93	2.93
Standard Deviation						2.0	2.11	2.11
CV						49.14	74.21	21.66

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Crop Name							CAULIFLOWER	AMARE	POROL	CHEAL
Rating Date								06-12-07	06-12-07	06-12-07
Rating Data Type							TTL HRVST	CONTROL	CONTROL	CONTROL
Rating Unit							G/HEAD	(%)	(%)	(%)
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage					
1	WEEDY CHECK					132.8	0	0	0	
2	HANDWEEDED					187.1	0	0	0	
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	157.0	96	99	90	
3	SULFENTRAZONE	4	F	0.1	POST					
4	SULFENTRAZONE	4	F	0.1	PRETP	191.1	90	98	98	
5	SULFENTRAZONE	4	F	0.2	PRETP	391.6	98	98	99	
6	CLOMAZONE	3	ME	0.5	PRETP	139.4	72	99	99	
7	OXYFLUORFEN	4	F	0.5	PRETP	164.7	99	99	96	
8	OXYFLUORFEN	2	XL	0.5	PRETP	253.2	99	99	99	
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	202.6	99	99	80	
9	OXYFLUORFEN	4	F	0.0625	POST					
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	188.8	99	99	88	
10	OXYFLUORFEN	4	F	0.125	POST					
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	166.3	73	53	93	
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	218.1	77	77	96	
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	271.5	82	57	96	
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	159.7	90	90	99	
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	267.1	99	99	99	
15	SULFENTRAZONE	4	F	0.1	PSTTP72H					
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	179.3	99	99	95	
16	SULFENTRAZONE	4	F	0.1	POST					
16	NIS .25% V/V									
LSD (P=.10)						156.79	6.1	8.7	8.1	
Standard Deviation						113.15	4.4	6.3	5.8	
CV						55.36	5.58	7.97	7.04	

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Crop Name						GASCI	DIGSA	AMARE	POROL	CHEAL
Rating Date						06-12-07	08-12-07	07-08-07	07-08-07	07-08-07
Rating Data Type						CONTROL	CONTROL	CONTROL	CONTROL	CONTROL
Rating Unit						(%)	(%)	(%)	(%)	(%)
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage					
1	WEEDY CHECK					0	0	99	95	99
2	HANDWEEDED					0	0	75	97	97
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99	97	95	99
3	SULFENTRAZONE	4	F	0.1	POST					
4	SULFENTRAZONE	4	F	0.1	PRETP	83	0	99	99	99
5	SULFENTRAZONE	4	F	0.2	PRETP	87	0	61	65	33
6	CLOMAZONE	3	ME	0.5	PRETP	87	0	94	99	66
7	OXYFLUORFEN	4	F	0.5	PRETP	93	50	89	90	66
8	OXYFLUORFEN	2	XL	0.5	PRETP	99	53	94	98	89
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99	85	92	95
9	OXYFLUORFEN	4	F	0.0625	POST					
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99	68	92	58
10	OXYFLUORFEN	4	F	0.125	POST					
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	33	96	96	95	98
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	60	95	61	66	33
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	53	98	99	94	99
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	78	96	98	93	98
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99	73	85	0
15	SULFENTRAZONE	4	F	0.1	PSTTP72H					
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99	55	65	0
16	SULFENTRAZONE	4	F	0.1	POST					
16	NIS .25% V/V									
LSD (P=.10)						11.6	3.7	38.3	38.4	47.9
Standard Deviation						8.4	2.7	27.5	27.8	34.4
CV						11.47	4.38	32.7	31.11	48.7

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Crop Name
Rating Date
Rating Data Type
Rating Unit

GASCI
07-08-07
CONTROL
(%)

DIGSA
07-08-07
CONTROL
(%)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Growth Stage	GASCI (%)	DIGSA (%)
1	WEEDY CHECK					99	99
2	HANDWEEDED					92	50
3	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	99	99
3	SULFENTRAZONE	4	F	0.1	POST		
4	SULFENTRAZONE	4	F	0.1	PRETP	99	99
5	SULFENTRAZONE	4	F	0.2	PRETP	58	60
6	CLOMAZONE	3	ME	0.5	PRETP	89	98
7	OXYFLUORFEN	4	F	0.5	PRETP	66	96
8	OXYFLUORFEN	2	XL	0.5	PRETP	93	66
9	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	80	33
9	OXYFLUORFEN	4	F	0.0625	POST		
10	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	57	30
10	OXYFLUORFEN	4	F	0.125	POST		
11	PENDIMETHALIN	3.8	CS	0.5	PRETP	88	0
12	PENDIMETHALIN	3.8	CS	1.0	PRETP	58	32
13	PENDIMETHALIN	3.8	CS	0.5	PSTTP72H	99	99
14	PENDIMETHALIN	3.8	CS	1.0	PSTTP72H	83	33
15	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	0	90
15	SULFENTRAZONE	4	F	0.1	PSTTP72H		
16	S-METOLACHLOR	7.62	EC	0.94	PSTTP72H	37	62
16	SULFENTRAZONE	4	F	0.1	POST		
16	NIS .25% V/V						
LSD (P=.10)						45.6	58.3
Standard Deviation						32.7	41.9
CV						43.76	64.16

Wiley, Tracey (TR)

From: Hastings, Kerry (KA)
Sent: Monday, December 08, 2008 2:33 PM
To: Hastings, Kerry (KA)
Subject: FW: Goaltender Maine Label / Smith's Farm Inc.

From: Emily Smith [mailto:emily@smithsfarm.com]
Sent: Wednesday, December 03, 2008 8:43 AM
To: Comeau, Gregory (GR) (DAS Ag)
Subject: Goaltender Maine Label / Smith's Farm Inc.

December 2, 2008

To Whom it may Concern:

Smith's Farm Inc. of Presque Isle, Maine is requesting a Goaltender Label for broccoli. We grow 4000 acres of broccoli in Maine and harvest broccoli for a four month period between July and November. Maine's climate is ideal for broccoli production with highs averaging in the mid-seventies and lows in the mid-fifties.

One of our major obstacles is controlling weeds in our broccoli production. The pests are numerous and range from lambsquarter, mustard and pig weeds to Shepard's purse and night shade. Night Shade is of particular interest to control in Maine. We rotate ground with potato growers in the region and Night Shade is a carrier of the late blight disease in that crop. There are no post-emergent herbicide alternatives on broccoli at this time.

Smith's Farm Inc. has performed extensive research test plots on our crop production in Maine and Florida with the use of Goaltender as a post emergent herbicide. The results have been very favorable. Goaltender has proven to suppress or harden off the various pests listed above, including the Night Shade. There has been no delay in growth of the treated areas and yields have been equal. The trials have shown some crop damage in discoloration of the mature leaves, however the new growth has been unaffected. At Smith's Farm Inc. we feel the rewards of having Goaltender to control the pests in our crop far out way the risks. We understand that if managed properly with appropriate weather conditions Goaltender can be a huge asset to our crop and the potato crops of area growers.

Thank you for your immediate attention and efforts in labeling Goaltender for use on the 2009 Broccoli crop in Maine. We greatly appreciate the Goaltender option and look forward to working with you and your products far into the future.

Sincerely,

Emily G. Smith
Smith's Farm Inc.
emily@smithsfarm.com



Cornell University
College of Agriculture
and Life Sciences

Department of Horticulture
134 A Plant Science Building
Ithaca, New York 14853-5904
Telephone 607.255.4568 / 1789
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Email hort@cornell.edu
www.hort.cornell.edu

November 12, 2008

Dr. Jim Baxter
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268

Re: Support of postemergence use of GoalTender on cole crops in New York State

Dear Dr. Baxter,

I started working with postemergence applications of GoalTender in a preliminary way in 2004. Subsequently in 2007 and 2008 I did 4 trials in cabbage, 2 in broccoli, 2 in cauliflower, and 1 in brussel sprouts. Although there was frequent, slight spotting or necrotic lesions on exposed leaves there was never a negative impact on subsequent growth or yields of any of the crops. The damage was basically 'cosmetic'. The additional weed control obtained with this application is significant, particularly when you consider that there are few options for controlling broadleaf weeds that escape preemergence herbicides in cole crops. This will be extremely beneficial for New York State cabbage growers. I strongly support obtaining the SLN registration for New York.

Sincerely,
Robin R. Bellinder
Professor, Weed Scientist
Dept. of Horticulture
Cornell University

cc. Brian Olson

1865 THE UNIVERSITY OF
MAINE
Cooperative Extension
Potato Program

P.O. Box 727 • Presque Isle, ME 04769 • (207) 764-3361 • Fax:(207) 764-3362

May 6, 2008

Mr. Jim Baxter
Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268


RE: GoalTender (oxyfluorfen) Broccoli label for Maine

Dear Jim:

I am writing to encourage Dow AgroSciences to obtain a 24c label for use of GoalTender postemergence on broccoli in Maine. This is an important use because GoalTender controls several difficult weeds postemergence with a completely different mode of action from other broccoli herbicides. Of particular interest, this compound is reported to control hairy nightshade, which can act as an alternative host for diseases that infect the potato crop. It is also controls mayweed chamomile, which has proven to be a troublesome weed in our potato-based cropping system. GoalTender would be an important asset for controlling these weeds, as well as lambsquarter and pigweed which are always potential problems in our fields.

The broccoli crop is important in northern Maine with more than 5000 acres produced annually. Please contact me if you need more input from me in this matter. My office number is 207-764-3361 and my mobile phone number is 207-227-4105. Thank you for your support of Maine agriculture.

All the best,



Peter Sexton, Ph.D.
Crops Specialist, Potato Program
University of Maine Cooperative Extension

cc. Jim Dwyer, Steve Johnson, John Jemison

www.maine potato ipm.com www.umext.maine.edu

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