

US EPA ARCHIVE DOCUMENT

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To: Product Manager
TS-767 Garner (23)

Through: Dr. Gunter Zweig, Chief
Environmental Fate Branch

From: Review Section No. 1 *R. May*
Environmental Fate Branch

Attached please find the environmental fate review of:

Reg./File No.: 100-583,597, 9F2203

Chemical: metolachlor

Type Product: Herbicide

Product Name: Dual 6E, 8E

Company Name: GIBA-GEICY

Submission Purpose: potatoes

ZBB Code: Sec. 3

Date in: 5/25/79

Date Completed: OCT 23 1979

Deferrals To:

Ecological Effects Branch

Residue Chemistry Branch

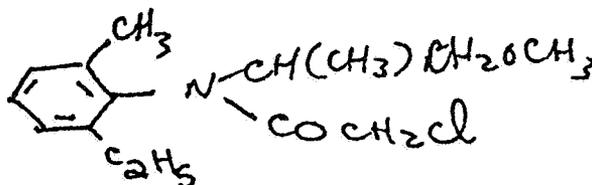
Toxicology Branch

I. Introduction

This is a request for amendment of existing registration of Dual 6E^R (EPA reg. no 100-583), and Dual 8E (EPA reg. no 100-597) to include use on potatoes for weed control. Each product is proposed for application either alone or in combination with Sencor or Lexon as tank mixture. The two products are registered for use on crops of the same category as potatoes. Submission does not include new EC data. Past reviews applicable to this request are found in the following records.

EC review dated 8/28/79; reg. file no. 100-583,597,9F2213
EC review dated 1/30/79; reg. file no. 100-583

Active Ingredient common name=metolachlor;
chemical name = 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methyl-ethyl) acetamide;
Structure=



Percent active ingredient
Dual 6E - 68.5% metolachlor, 6 lbs. a.i./gal.
Dual 8E - 86.5% metolachlor, 8 lbs. a.i./gal.

2.2 Directions for use

2.1 Dual 6E:

a) Apply alone either preplant incorporated (into the top 3" of soil), post plant incorporated (evenly distributed in the top 2" of soil), or preemergence after planting and before emergence of the crop and weeds-or after final drag-off treatment-using the appropriate rate from the following table.

Soil Texture	Broadcast rate/acre	
	3% OM	3% OM
<u>Coarse</u> (sand, loamy sand, sandy loam)	2-2 1/3 pts.	2 2/3 pts.
<u>Medium</u> (loam, silt loam, silt)	2- 2/3-3 1/3 pts.	2 2/3-3 1/3 pts.
<u>Fine</u> (silty clay loam, sandy clay loam, silty clay, sandy clay, clay loam, clay)	2 2/3-3 1/3 pts.	3 1/3 - 4 pts.
Muck or peat soils	Do not use	

b) Apply Dual 6E + Sencor or LExon after planting as a preemergence delayed preemergence - or after final drag-off treatment but before the crop or weeds emerge using the appropriate rate shown below. Do not incorporate into soil.

Soil Texture	Broadcast rate/Acre	
	Dual 6E	Sencor 50WP* or Lexone
<u>Coarse</u>	2-2 2/3 pts.	3/4 - 1 lbs.
<u>Medium</u>	2 2/3 - 3 1/3 pts.	1 - 1 1/2 lbs.
<u>Fine</u>	3 1/3 pts.	1 - 1 1/2 lbs.
Muck or peat soils	Do not use	

* When using Sencor 4 or LExone 4L, substitute pints for pounds (1 pt.=1 lb).
When using Lexone DF, multiply pounds by 0.67.

Precaution: Do not use Dual + Sencor or LExone on potatoes in Kern County, California.

Do not apply to sweet potatoes or yams.

Note: Potatoes treated with Dual 6E alone or in tank mixture with Sencor or Lexone cannot be harvested within 70 days after application.

2.2 Dual 8E:

a) Apply alone same as Dual 6E using the appropriate application rate indicated below.

Soil Texture	Broadcast rate/acre	
	3% OM	3% OM
<u>Coarse</u>	1 1/2 - 2 pts.	2 pts.
<u>Medium</u>	2-2 1/2 pts.	2-2 1/2 pts.
<u>Fine</u>	2- 2 1/2 pts.	2 1/2-3 pts.
Muck or peat soils	Do not use	

b) Apply Dual 8E and Sencor^R or Lexone^R same as Dual 6E mixture using the appropriate rate of application indicated.

<u>Soil Texture</u>	<u>Broadcast rate/Acre</u>	
	<u>Dual 8E</u>	<u>Sencor 50WP* or Lexon</u>
<u>Coarse</u>	1 1/2-2 pts.	3/4-1 lb.
<u>Medium</u>	2-2 1/2 pts.	1-1 1/2 lbs.
<u>Fine</u>	2 1/2 pts.	1/1 1/2 lbs.

muck or peat soils Do not use

* When using Sencor 4 or Lexone 4L. Substitute pints for pounds (1 pint equals 1 pound). When using Lexone DF, multiply pounds by 0.67

Precaution: same as Dual 6E.

Note: same as Dual 6E

Rotational Crops: Refer to the crop rotation instructions for Dual 6E alone, Dual 8E alone on this label and for Sencor/Lexone alone on the Sencor or Lexone labels. *[Rotational crops may be planted 18 months after application]*

3. Discussion of Data

No new EC data are needed.

4. Conclusions

4.1 Executive Summary

Metolachlor is a stable herbicide to hydrolysis under normal environmental conditions; its half-life is greater than 200 days at 20°C, and pH 5, 7 and 9. It leaches to considerable extent, in sand, sandy loam, and loam, and leaches very little in silt loam and not at all in muck. Also, the aged metabolites leached into lower layers of soil and were found in high concentrations in the leached water. Photolysis of metolachlor is very slow under natural sunlight, and so is the microbial degradation. Rate of degradation is slower in anaerobic soil than in aerobic soil.

Metolachlor is persistent in soil to the extent that residues can be ^{up} ~~up~~ taken by rotational crops and bioaccumulated (BA) by fish. The BA factor in bluegill tissues was 28x with no plateau reached in the study.

In essence, metolachlor has a potential of leaching to groundwater and be available for uptake by non-target organisms.

5. Recommendation

5.1 *potentially* The fate of metolachlor is known and it is found that metolachlor can contaminate ground water and be available for uptake by non-target organisms.

Ron Mey, Jr.

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Review Section #1
Environmental Fate Branch