

US EPA ARCHIVE DOCUMENT

ALACHLOR ADDENDUM

Final Report

**Task 2: Environmental Fate and
Exposure Assessment**

Contract No. 68-01-6679

JULY 18, 1985

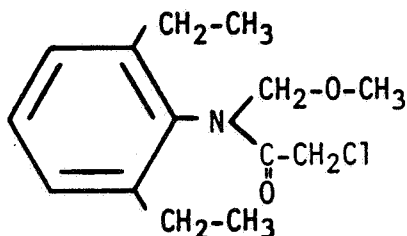
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Environmental Fate and Exposure Assessment

Alachlor Addendum

ALACHLOR, LASSO, ALANEX, CP 50144, LAZO



2-Chloro-2',6'-diethyl-N-(methoxymethyl)acetanilide

The data summarized here are scientifically valid but do not meet registration requirements unless noted.

Phenyl-labeled [^{14}C]alachlor (>98% pure) at 0.94 lb ai/A was taken up by small grain, leafy vegetable and root crops in up to 3 successive croppings planted 30, 160 and 365 days after application to a sandy loam soil (Livingston, No MRID). Total radioactivity in crops planted 30 days after treatment and harvested at maturity was 1.28 and 0.66 ppm, respectively, in barley straw and grain; 0.06 ppm in cabbage; and 1.33 and 0.29 ppm in radish foliage and radishes, respectively. Radioactivity levels in the rotational crops diminished with successive croppings and were generally greater in the small grain crop (forage) than in the other crops.

The following represents the data currently required (EPA Data Requirements for Registering Pesticides) to fully assess the environmental fate and transport of, and the potential exposure to alachlor based on the data previously reviewed by Dynamac for the Alachlor Standard, data reviewed by EPA, and data submitted for this addendum: accumulation studies on rotational crops and reentry studies.

Hydrolysis studies: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Photodegradation studies in water: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Photodegradation studies on soil: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Photodegradation studies in air: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Aerobic soil metabolism studies: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Anaerobic soil metabolism studies: No data were submitted for this addendum; however, data submitted for the Alachlor Standard on anaerobic aquatic metabolism satisfy this requirement. No further data are required.

Anaerobic aquatic metabolism studies: No data were submitted for this addendum; however, data submitted for the Alachlor Standard satisfy the requirement for anaerobic soil metabolism studies. No further data are required.

Aerobic aquatic metabolism studies: No data were submitted for this addendum; however, data are not required to support current uses.

Leaching and adsorption/desorption studies: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Laboratory volatility studies: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Field volatility studies: No data were submitted for this addendum; however,

based on data submitted for the Alachlor Standard, no further data are required.

Terrestrial field dissipation studies: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Aquatic field dissipation studies: No data were submitted for this addendum; however, no data are required because alachlor currently has no registered aquatic or aquatic impact uses.

Forestry dissipation studies: No data were submitted for this addendum; however, no data are required because alachlor currently has no registered forestry uses.

Dissipation studies for combination products and tank mix uses: No data were submitted for this addendum; however, no data are required because data requirements for combination products and tank mix uses are currently not being imposed for this Standard.

Long-term field dissipation studies: No data were submitted for this addendum; however, based on aerobic soil metabolism and terrestrial field dissipation data submitted for the Alachlor Standard, no further data are required.

Confined accumulation studies on rotational crops: One study was reviewed (Livingston, No MRID) that is scientifically valid but does not fulfill data requirements because alachlor was not applied at the highest recommended rate, soil samples were not collected immediately after treatment or at rotational crop planting, crop growing conditions were not reported, and alachlor residues in plant tissues and soils were not characterized. Based on data submitted for the Alachlor Standard: 1) Data on ¹⁴C-uptake by corn seedlings at the four pound per acre rate and on uptake into other crops at the one pound per acre rate are acceptable; however, additional data, including degradate identification and magnitude are needed from rotational crops grown on soils treated at actual use rate; and 2) For crops rotated on treated areas, any one of the following will apply; (a) a tolerance must be obtained for alachlor residues in the rotated crop, (b) the product label must include a restriction against the rotation of crops used for food or feed on treated areas, or (c) data must be provided to determine time intervals at which rotated crops planted on treated areas will

be free of pesticide residues.

Field accumulation studies on rotational crops: One study was reviewed (Hackett and Graham, No MRID) that could not be validated because no soil samples were taken. Additionally, this study would not fulfill data requirements because the purity of the Mcap formulation was not reported; the test soils were incompletely characterized; soils were not sampled at the time of treatment, at rotational crop planting, or at harvest; the field test data (precipitation, irrigation, meteorological) and crop cultural practices were not reported; and nonspecific analytical methods were used. All data are required. For crops rotated on treated areas, any one of the following will apply: (a) a tolerance must be obtained for alachlor residues in the rotated crop, (b) the product label must include a restriction against the rotation of crops used for food or feed on treated areas, or (c) data must be provided to determine time intervals at which rotated crops planted on treated areas will be free of pesticide residues.

Accumulation studies on irrigated crops: No data were submitted for this addendum; however, no data are required because alachlor does not have an aquatic food crop or aquatic noncrop use, is not used in and around holding ponds used for crop irrigation purposes, and has no use involving effluents or discharges to water used for crop irrigation.

Laboratory studies of pesticide accumulation in fish: No data were submitted for this addendum; however, based on data submitted for the Alachlor Standard, no further data are required.

Field accumulation studies of aquatic nontarget organisms: No data were submitted for this addendum; however, no data are required because alachlor has no forestry, aquatic noncrop, or aquatic impact uses.

Reentry studies: No data were submitted for this addendum; however, all data are required. Until data are submitted and evaluated, reentry to treated fields is restricted for 24 hours following the application of alachlor unless protective clothing is worn.

Label Restrictions

1. Groundwater contamination:

The labeling must list specific, currently registered sites that the product is intended to be used on after manufacturing into an end-use product or the manufacturing-use product will be considered to be for manufacturing into end-use products for all registered use sites.

Products labeled for terrestrial use(s) must be classified for "RESTRICTED USE" and the labels must bear the following groundwater precautionary statements:

Alachlor is known to leach through soil and has been found in groundwater. Users are advised to apply this product only where groundwater contamination is unlikely. Do not apply in recharge areas of designated Sole Source Aquifers, or in areas with well-drained soils as defined by Class A of the Soil Conservation Service classification system which overlay shallow aquifers or which are not protected by an overlying impervious layer. Consult the proper state regulatory officials in your area for information on the location of sole source recharge areas, and the local agent of the Soil Conservation Service for information on your specific soil characteristics.

The above label changes must be made by December 31, 1984.

2. Rotational crop restriction:

Do not rotate crops used for food or feed which are not registered for use with alachlor on areas previously treated with this chemical.

3. Reentry restriction:

Do not reenter treated areas for 24 hours following application unless protective clothing is worn.

References

Hackett, A.G. and J.A. Graham. 1985. Analysis of wheat and barley commodities, rotational crops, for 2,6-DEA and 2,6-HEEA yielding alachlor metabolites following 1-12 month crop rotation and preemergent application of Lasso or Lasso Micro-Tech. Report No. MSL-4445. In Information to support the registration of Lasso herbicide. R.D. No. 593. Special Report MSL-4605. Unpublished study received Mar. 19, 1985 under 524-285, -296, -314, -329, -341, -344; submitted by Monsanto Company, St. Louis, MO. Accession No. 257206. (No MRID)

Livingston, C.L. 1982. Uptake of alachlor (2-chloro-2',-6'-diethyl-N-methoxymethylacetanilide) residues in primary, emergency replant and rotation crops. Report No. MSL-2252. In Information to support the registration of Lasso herbicide. R.D. No. 593. Special Report MSL-4605. Unpublished study received Mar. 19, 1985 under 524-285, -296, -314, -329, -341, -344; submitted by Monsanto Company, St. Louis, MO. Accession No. 257206. (No MRID)