

US EPA ARCHIVE DOCUMENT

Baygon

Nov 9, 76 Chemagro - authorized
EPA to use data to support

Boyle - Midway 475-173
Rec in EC 1/9/77 Out

Jan 17/77 Request for Waiver
475-173

Rec in EC 2/21/77 Out (2/3/77)

We do NOT and I again
state we do NOT have
a Chemagro submission
AT ALL in EC. ~~EC~~

Studies in progress as of
Jan 1976 - Mobay Chem. Corp.
Chemagro Agr. Div.
Soil metabolism, aged leaching
photodegradation in progress

[2% Mole Cricket Bait
Requested by Southern Mill
6720 - EAU on Lawns,
golf courses, ornamental
turfs & pastures

Baygon

Sand 25% lost in 100 days
Silt loam no decline in 6 months

(579) In Indian Journal of Entomology
1966 Vol 28 (3) 482 - 493

Autodegradation 250711 (1/11)

(3) Journal of Ag & Food Chem
1966 Vol 14 297 - 298

TO BILL POFF
FROM NEY

1. Report 30589

Runoff \rightarrow put into report evaluation
Kd

~~Hydrolysis studies needs to be reported in
contract as to~~

~~Hydrolysis - what are the hydrolytic
products have they been analyzed~~

~~Photodegradation in soil and H₂O needed~~

\rightarrow Not enough
data in this study
to make such
estimates

2. Report 30590 - How much Bound in time?

What is the $1/2$ life of Baygon?

How long to a time when only
10% remains?

Have degradation products been characterized? No

3. Do we have $1/2$ life? If not do we need? I do not think
No based
on study 30589.

study \rightarrow Photodegradation studies in H₂O and on soil?

Rotational crop data? No

Fish accumulation data? No

in pools of water and bottom sediment - half-life = 12 hrs

4. In all studies are residues accounted for?

No. +

3.0 Discussion of Data:

3.1 The following environmental chemistry data are submitted by reference in Mobay Chemical Corporation letter of Nov. 9, 1976

Supplement No. 1 dated January 16, 1975 ^{RECORDED} the brochure entitled, "BAYGON - The Effects on ~~the~~ Environment" - submitted on May 9, 1975 and on file under EPA File Symbol 3125-GNA. Accession No. 094546.

Report Nos. 30589 and 44735 - submitted on November 7, 1975 and on file under EPA File Symbol 3125-GNA. Resubmitted on June 23, 1976.

It is noted that ~~in~~ the method of support of item 6. of EPA Form 8570-13 is not ~~not~~ indicated.

Hydrolysis and Water Stability (Repat 30589)
These studies ~~was~~ appear in two different
submissions and were reviewed on 6/6/74 and
8/13/75 and found acceptable.

The studies would not meet current guideline
requirements for the following reasons:

- (a) Only one concentration (10 PPM) was studied.
- (b) Formulated material, a spray concentrate
consisting of 1.5 lb a.i./gallon, was used instead
of active ingredient alone.
- (c) Material balance data are incomplete.
- (d) It is not clear from the data, how long
the hydrolyses were run, what were the sampling
intervals and whether duplicate samples were taken.
- (e) more complete analytical data are needed eg
Rf values and chromatograms.

Leaching studies (Report 30589)

These studies ~~was~~ were reviewed 6/6/74, 8/13/75 and 1/15/76 and found acceptable. Aged leaching studies have not been submitted.

The studies would not meet current guideline requirements for the following reasons:

- (a) An aged leaching study has not been submitted
- (b) Only three soil types were studied while four are required. Soils ~~is~~ are not completely characterized; C.E.C. values are not given. A soil with less than 1% organic matter was not studied as required.
- (c) A formulated spray concentrate instead of active ingredient alone was used.
- (d) Dosage rate used (1.0 P.P.M. column average) is much higher than probable use rate.
- (f) Less than ~~the equivalent of~~ 20 ~~cm~~ inches of water was added to the columns.
- ~~(g) A 15 cm soil column~~
- (g) Soil columns 30 cm. long are recommended rather than the 15 cm. columns used. Larger ~~1/2 inch~~ diameter columns are recommended.

(4) Celite Filter-Aid was mixed with the soil in the columns. Soils should be free of foreign matter.

Fish residue accumulation study (Report 44735)

Accession No. 224694

This study was reviewed 1/15/76 and ~~found~~ accepted. Accumulation in whole fish was found to be 1.2X at 28 days.

The study would not meet current guideline requirements for the following reasons:

- (a) An accumulation study on catfish in a static system using pesticide treated soil is needed.
- (b) Catfish were used in the dynamic study submitted; ~~sunfish~~ sunfish are preferred.
- (c) Study was not extended to 30 days of exposure and did not include a 14 day depuration period. Samples were not taken at all of the recommended intervals i.e. 0, 1, 3, 7, 10, 14, 22 and 30 days of exposure and 0, 1, 3, 7, 10 and 14 days during depuration.
- (d) The amount and identity of residue in water, whole body fish, edible tissue, and viscera at each sampling interval have not been determined.

(2) The combustion method should be used in preparing fish tissue samples for radioassay.

(3) Representative raw data in ~~photo~~ photographic ~~form~~ or diagrams of TLC plates and sample calculations have not been submitted.

The fate of Baygon (o-isopropoxyphenyl-N-methylcarbamate) in soil. Report 30590

Accession No. 224691

This is essentially a study on the effects of soil microorganisms on Baygon. It was accepted on 8/13/75

The study would not be acceptable under current guidelines requirements for the following reasons:

- (a) Formulated product and not active ingredient alone was used in most of the study. Material was carbonyl labelled and not ring labelled
- (c) Soil suspensions in water rather than bulk soils were used in most of the study.
- (d) Study was not extended to 30 days and samples were not taken at preferred intervals of 1, 3, 7, 14, 20 and 30 days.
- (e) No attempts were made to identify organisms responsible for pesticide degradation.
- (f) Test media have not been completely identified.

Effect of Baygon on Microbial Populations
(Report No. 35131) Accession No. 224691

Study was reviewed and found acceptable
8/13/75

The study would not be acceptable under current guideline requirements for the following reasons:

- (a) Population studies ~~should~~ ^{must} be made on $\frac{1}{3}$ typical soil microorganisms identified by binomial name as well as common name. Microorganisms were not identified in the study submitted.

Sensitized photodecomposition and photosensitizer activity of Pesticide Chemicals Exposed to Sunlight on Silica Gel Chromatoplates (Report No 41946) (Accession No 224691)

The photodecomposition of carbamate insecticides (Report No. 16458) (Accession No. 224691)

These studies were reviewed on 8/13/75 and found to be unacceptable. ~~Photodegradation~~ Photodegradation was not ~~studied~~ studied in water and on soil surfaces as required by current guidelines.

The degradation of two insecticides by soil microorganisms (Report no. 33364)
(Accession no. 224691)

This study was reviewed 8/13/75 and found acceptable. It is essentially a study of the effects of microbes on Baygon and complements material in Report no. 30590.

The study would not be acceptable under current guideline requirements for the following reasons:

- (a) Photographs of claimed pure cultures have not been submitted.
- (b) Details of the analytical method used including standard curves are needed. Direct chemical analyses for Baygon is preferred.

Baygon residues in soil (Report no. 30533)
Accession no. 224691

Study was reviewed 8/13/75 and found to be unacceptable. The following comments are outstanding: ~~at what is it~~

- (1) What is the depth of the soil samples taken?
- (2) Data on sample storage and stability are needed.
- (3) Data on the analysis of control samples stored under similar conditions is needed.

Study would be unacceptable as a field dissipation study ^{under} ~~in~~ current guidelines for the following reasons:

- (1) The formulation used, 5% Granules, differs from the 2% bait material under review
- (2) Application rate of 10 P.P.M. is much higher ~~than~~ than can be expected ^{from} ~~from~~ ant-trap use.

Review was interrupted on 2/16/77
to complete proofing of ~~Cass~~ Curator 4E
and prepare for meeting with Buckman
4 2/18

The uses around homes and buildings are supported by data that has been previously accepted and are still acceptable but are deficient based on current operating procedures.

If the bait (trap) is applied at the rate of one trap per ant mound, there would be enough acceptable data on file. ~~to be~~ ~~but~~ ^{these} are deficient based on current operating procedures.

Based on the use pattern ^(one trap/mound) it is unlikely that this use would present a problem in the ~~cover~~ environment.

The hydrolytic products of baygon have not been identified, but baygon (parent) is found to rapidly hydrolyze in water above pH 2 and stable below.

The fate of baygon in soil is not adequately defined as soil degradate have not been identified.

Baygon has been found to be mobile in soils as shown by leaching and runoff studies.

The mobility of degradates has not been studied nor are the degradates known.

Soil microbes degrade baygon but the degradates are not known.

We do not know if residues¹⁸

will accumulate in fish which
is the required indicator
organisms to determine
bioaccumulation. The
study submitted on catfish
without soil did show that
accumulation would not
be a problem. However,
catfish studies are to be
with treated soil. A
~~test~~ sunfish study is
also needed.