

US EPA ARCHIVE DOCUMENT

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Attached, please find the EAB review of:

Reg./File # : 11556-8

Chemical Name : Propoxur

Type Product : Insecticide

Product Name : BAYGON 2% Bait

Company Name : Mobay Corporation

Purpose : Protocol Review for Exposure Study -

Applicator Exposure During Application of Granular Product

Date Received : 4/8/88 Action Code: 352

Date Completed: _____ EAB #(s): 80647

Monitoring study requested: X Total Reviewing Time: 2 days

Monitoring study voluntarily: _____

Deferrals to: _____ Ecological Effects Branch
_____ Residue Chemistry Branch
_____ Toxicology Branch

1.0 INTRODUCTION

In December 1987 the Agency issued a Data Call In Notice (DCI) requiring exposure data for several uses of propoxur. Propoxur is an organophosphate insecticide with a number of indoor and outdoor uses around occupied structures in addition to numerous agricultural formulations. Mobay Corporation responded to the DCI with a package containing protocols for seven exposure studies addressing use of products containing this compound (Accession Nos. 219810-219819). This study is designed to measure the potential dermal and respiratory exposures of workers applying BAYGON 2% bait. BAYGON 2% bait is a granular product designed to be applied by hand to areas around structures. The study is also intended to serve as a surrogate for other granular products used either inside structures or out of doors.

2.0 DESCRIPTION OF STUDY

2.1 Description of Treatment

The test material, BAYGON 2% Bait, will be applied by hand to areas around foundations, patios, driveways, or sidewalks. Application of the material will be to a 2-3 foot band around these areas at a rate of 4 ounces per 1000 square feet (0.08 oz AI/1000 sq. ft.) which is the prescribed label rate. The applicator will be a commercial pest control operator (PCO) who normally applies such products as part of his/her job. All normal functions associated with an application will be performed by this worker including application, any equipment maintenance, and travel to and from application sites. Each replicate will consist of the application and associated tasks for one half of a normal work day. Sixteen such replicates using three different applicators will be monitored.

2.2 Exposure Monitoring

Dermal exposure of the body will be measured using dermal patches attached to the applicator's clothing. The patches will consist of a 3 x 3 inch, 12 ply, gauze encased in a waterproof paper envelope with a 5.8 cm diameter circle cut in the outer side of the envelope. Applicators will wear long sleeved cotton/polyester coveralls, a cap, and chemical resistant gloves, which will represent normal work clothing. Dermal dosimeters will be located both inside and outside of the clothing on the upper arms, the forearms, chest, back, front of both thighs, and on the shins. Care will be taken to avoid overlap of inner and outer patches on the same regions of the body. An additional dosimeter will be attached to the front of the cap.

Exposure of the hands will be measured by hand rinse with 200 ml of absolute ethanol. Each hand will be washed twice. The ethanol will be stored in a labeled bottle until analyzed.

Airborne concentrations of propoxur will be determined by drawing air, at a known rate, through filters using calibrated personal sampling pumps. The filters will be attached to the applicator's clothing in the breathing zone. The pump and filter will be operating throughout the treatment period. In addition the particle size distribution of airborne material will be determined.

2.3 Analytical Chemistry and Quality Assurance

Exact analytical procedures were not presented in the protocol. Samples will be stored and shipped on dry ice. The analytical methods will be validated by determining the recovery of propoxur from fortified samples of the test media. A storage stability study, covering the expected maximum time periods between sampling and analysis, will also be performed. Field validation will be conducted by exposing fortified media to the test conditions for the length of a complete sampling replicate. Blank and fortified media will also be included with the study samples to assess any degradation or loss of the material that may occur during shipment and storage. At least one gauze patch will be fortified for each worker for each half day replicate. Quality assurance samples will make up approximately ten percent of the total study samples.

3.0 CONCLUSIONS

EAB finds the proposed protocol to be acceptable. The analytical methods, although not specified in the protocol, must be properly documented and strict quality assurance must be followed at all stages of the study. Exposure is often correlated with the total amount of material applied as well as the concentration of pesticide used. Therefore the total amount applied at each replicate should be included in the final report. The amount of time spent actually applying the product should also be reported. The study should provide a reliable estimate of the potential exposures of individuals applying granular formulations of propoxur and is designed

such that the evaluation of several protective clothing scenarios will be possible. The latter will be necessary for homeowner products of this type.



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