PC 125301

R.F.
5-13-96

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 13 1996

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

Subject: **PP# 0G3879 - FENOXYCARB (COMPLY®) ON PEARS.**
Amendment of January 24, 1996,
Review of Revised Residue Analytical Method.
CHEMICAL No. 125301
(MRID # 439050-01) [DP Barcode # D224959]

From: Francis D. Griffith, Jr., Chemist
Chemistry Branch I - Tolerance Support

Thru: E. Zager, Acting Branch Chief
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To: D. McCall, Acting Section Head
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EXECUTIVE SUMMARY OF CHEMISTRY DEFICIENCIES

- NONE -

INTRODUCTION

Ciba-Geigy Corporation, Ciba Crop Protection, submitted an EUP for fenoxycarb on pears and proposed a temporary fenoxycarb tolerance on pears at 0.1 ppm. In a letter dated January 24, 1996, signed by R. Wurz, the petitioner submitted a revised residue analytical method, AG-620A, in response to deficiencies noted in the CBTS evaluation (see memorandum by J. Morales dated 7 Oct 94) of the tolerance method validation (TMV) report (see memorandum by D. Swineford dated 15 Jul 94). The revised method will be reviewed with the deficiencies corrections specifically noted. Our conclusion and recommendation follow.

CONCLUSION

CBTS concludes the petitioner has presented a revised residue analytical method as requested in the TMV report. The method, AG-620A, has been adequately validated to gather the magnitude of the residue data, has successfully completed an Agency TMV, and has been found to meet the Guideline requirements for an enforcement method. All deficiencies for method AG-620A noted in the TMV report have been resolved.

RECOMMENDATION

CBTS has previously recommended for the temporary tolerance at 0.1 ppm on pears (see memorandum by J. Morales dated 21 June 94). CBTS recommends the revised residue analytical, AG-620A, be made available to interested parties as requested. However, since the are 4 fenoxycarb petitions currently under review (PP#6F4633 for tree nuts, PP# 6F4617 for citrus fruits, PP# 6F4616 for grass forage and hay, and PP# 6F4618 for pome fruits), CBTS recommends this method not be forwarded to FDA until the review of methods AG-622 submitted with the pome fruits petition, PP# 6F4618; and AG-609 submitted with the grass forage and hay petition, PP# 6F4633 are completed and we decide what method(s) to forward for tolerance enforcement.

DETAILED CONSIDERATIONS

PETITIONER'S RESPONSE (MRID # 439050-01)

The petitioner submitted a revised residue analytical method titled "Analytical method for the Determination of Fenoxycarb in Pears by High Performance Liquid Chromatography" by S. Boyette dated 17 Jan 96 and coded AG-620A.

CBTS COMMENTS

In summary, 50 grams samples are homogenized in acetone using a Polytron with clear glass bottles (amber glass bottles are no longer required; deficiency 4 is resolved). The extract is filtered through a Whatman (GF/D) glass microfiber filter into 500 ml round bottom boiling flasks (500 ml round bottom boiling flasks are now listed in the apparatus section; deficiency 5 is resolved) using low vacuum filtration. The bottle and filter cake are rinsed with acetone, then the filtrate is rotary evaporated at $\leq$ 40°C to remove the acetone (approximately 20 mls).

The extract is diluted with water and 10 mls of sat. NaCl, then partitioned 3 times with hexane. The hexane is dried through Na_2SO_4 into a 500 ml round bottom flask (filtering into an erlenmeyer flask with a transfer into a round bottom flask for evaporation has been removed from the method; deficiency 6 is resolved).

Samples are cleaned by macro 3% deactivated silica gel chromatography using 1.5 X 45 cm columns with a 250 ml reservoir. The petitioner has added instructions to calibrate the elution profile using 5% ethyl acetate in toluene with a spiking standard. The petitioner notes that the elution profile may need to be modified to collect the analyte of interest. The petitioner chose not to change the % deactivation of the silica gel or to change the % ethyl acetate in the toluene eluant. Deficiencies 1a and 1b are resolved. When the column is properly calibrated the first 28 mls of eluant can be discarded with fenoxycarb eluting in the next 155 mls. The eluant is rotary evaporated to dryness; taken up in acetone, transferred to calibrated concentration tubes and evaporated to dryness; and made to volume with the HPLC mobile phase. CBTS concurs with the petition-

er's decision to retain the cleanup step instead of deleting it per the TMV results. We prefer to make the silica gel clean-up an optional step depending on the matrix, and will note this conclusion in the EPA Addendum to the method. Deficiency 2 is resolved.

Determination is by HPLC using a Perkin Elmer model ISS-200 automatic sampler connected to Kratos Spectoflow 400 LC pumps. A spherisorb reverse phase guard cartridge is connected to a Supelicosil LC-18-DB, 15 cm X 4.6 mm (i.d.) column. The mobile phase is (1:1) ACN/0.05 M KH_2PO_4 at a rate of 1 ml/min. The detector is a ABI model 783 variable wavelength UV set at 228 nm.

The instrumental limit of detection is 2 ng which is equivalent to 0.01 ppm in a sample. A skilled analyst can complete a set of 6-8 samples in 12 working hours. Quantitation is by peak heights from a standard curve. The petitioner has deleted the use of a recovery factor to calculate residues. Deficiency 3 is resolved.

The petitioner provided validation data for method AG-620A for fenoxycarb fortified at 0.01, 0.05, and 0.1 ppm in pears. Recoveries ranged from 81 to 95%., averaging 87 $\pm$ 5.5%, n = 6 [CV = 6.3%]. The method has undergone a successful TMV with validation in pears at 0.1 and 0.2 ppm. EPA recoveries ranged from 83 to 110%. CBTS concludes method AG-620A has been adequately validated to collect magnitude of the fenoxycarb residue in pears and to enforce the proposed tolerance. Method AG-620A meets the Guideline requirements for an enforcement method.

The petitioner has provided adequate chromatographic support showing fenoxycarb standards ranging from 2 to 100 ng, reagent and control samples, plus fortified control samples. CBTS concurs that there are no unidentified analytical responses at the elution of fenoxycarb.

To confirm fenoxycarb residues in pears the petitioner suggests use of method AG-622 which has been submitted in conjunction with the petitions for fenoxycarb on pome fruits (PP# 6F4618), citrus fruits, and tree nuts. The petitioner notes that validation data for pears was submitted. However, these data have not yet been reviewed. The petitioner suggests fenoxycarb residues can also be confirmed by use of method AG-609 which has been submitted with the petition for grass forage and hay. No fenoxycarb in pear validation data were submitted with method AG-609. In scanning the methods CBTS notes there are differences; the significance of which we have not determined. CBTS recommends that method AG-620A not be forwarded to FDA at this time until we have completed our review of the other methods and decide on what method(s) to submit for monitoring/tolerance enforcement. The revised residue analytical method, AG-620A, will be made available to interested parties as requested for monitoring and/or tolerance enforcement.

cc:R.Keigwin[PM-10],IRB(7505C);R.F.,Circu.,Reviewer,PP#s0G3879,6F4616,6F4617, 6F4618,and6F4633.
7505C:CBTS:Reviewer(FDG):CM#2:Rm804Q:305-5826:FDG:5/6/96:fdg:5/13/96.
RDI:TPT-1:5/9/96:BrSrSci:RALoranger:5/9/96:ActBrCh:EZager:5/13/96.