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

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OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Part II Screen of 60 Chemicals for IR-4 to Determine
Status of Residue Chemistry Problems.
DEB No. 5666. HED No. 9-1950. RD Record No. 249,555.

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MTF

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THROUGH: Robert S. Quick, Section Head
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mjn
(for RSQ)

Through memorandum of R. Cool, RD, 8/14/89, IR-4 requested that representatives of the Dietary Exposure Branch meet to discuss their 1990 minor use projects. IR-4 is interested in identifying chemicals that are likely to encounter residue chemistry problems. The meeting was held 9/20/89, and the contents of this memo were delivered orally to representatives of IR-4.

IR-4's list of chemicals has been divided into two parts. Stephanie Willett, TPS II, DEB, is responsible for Part I. We emphasize that due to the length of the project and time constraints on the reviewers that any conclusions are not definitive and do not obligate DEB in any way towards any future submission.

What follows is a listing of 60 chemicals and relevant information from registration standards and/or recent petitions.

IR-4 list of chemicals

- Acephate Registration Standard 9/87. Nature of the residue in plants and animals is understood. Adequate analytical method.
- Amitraz PP#7G3547. Metabolism in cottonseed and livestock

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is adequately understood. Adequate enforcement methods available. Problems with 409 tolerance if residues concentrate on processing.

- Bifenthrin** Nature of residues in plants and ruminants understood for purposes of minor use petition. There has been an outstanding question concerning an impurity in the pesticide. This issue may be resolved by the time any new petition has been submitted.
- Carbofuran** Registration Standard 7/18/84. The nature of the residue in plants and animals is understood. Analytical methods are acceptable. However, the pesticide is the subject of ongoing special review because of its effects on wildlife. Until that review is concluded, it is doubtful that new uses will be permitted (L. Lyons, EEB).
- Chlorpyrifos** Residue Chemistry Chapter of Registration Standard (1/25/84). Second Round Review 11/18/88. The nature of the residue in plants is understood. The nature of the residue in animals is understood. Adequate analytical methods.
- Cypermethrin** PP#7E3487 (Clover forage): Nature of residue in plants and animals understood. Analytical method OK.
- Dimethoate** FRSTR 10/1/87. Nature of residue in plants understood. Metabolism studies in ruminants and poultry required. Analytical method OK pending completion of metabolism studies. For minor use crop registration may be possible.
- Disulfoton** Nature of residue in plants understood. Adequate analytical methods. Residue Chemistry Chapter of Registration Standard, 3/8/84, requires tolerances for meat, milk, poultry and eggs. Livestock metabolism studies have been submitted and are under review. In the meantime, registration possible if animal residues negligible.
- Endosulfan** Registration Standard, 4/82. Metabolism in plants and animals understood. Acceptable analytical methods.
- Esfenvalerate** Fenvalerate enriched in one diastereoisomeric pair. Nature of residue in plants and animals adequately understood. Analytical methods acceptable. No tolerances for poultry and eggs.

Ferbam Old chemical. Tolerances from 1950 Congressional hearings. Metabolism probably understood by analogy to other dithiocarbamates.

Fluvalinate Nature of residue in plants understood. Adequate analytical methods. Tolerances in meat, milk, poultry and eggs are 0.01 ppm (40 CFR 180.427).

Formetanate Hydrochloride Although earlier DEB memos expressed no problem, Second Round Review (SRR) (Residue Chemistry, 3/15/89) stated that the nature of the residue in plants and animals was not adequately understood. For low residues in minor use crops registration may be possible. There are currently no tolerances for meat, milk, poultry and eggs.

Imazalil No Registration Standard. PP#7F3530, memo 3/9/88 -- Fate of imazalil in melons, sweet corn and citrus adequately understood. Metabolism in ruminants understood. Analytical method OK.

Iprodione No Registration Standard. PP#8E3645 (stone fruits), memo of 7/22/88. Nature of residue understood in plants. PP#7F3545/FAP#7H5540 (tomatoes, tomato pomace), memo of 9/4/87. Animal metabolism OK.

Linuron Registration Standard 1984. Linuron is now out of special review. Metabolism in corn is now understood (L. Propst, memo of 12/24/87).

Malathion Registration Standard 2/88. Plant metabolism studies required for alfalfa, cotton, soybeans and either wheat or rice. Ruminant and poultry metabolism studies required. Analytical method provisional. Last petition PP#7E3484 (chayote), before Standard issued.

Mancozeb In Special Review for EBDC's. IR-4 PP#'s 9E3781, 9E3783 have been submitted but not reviewed. Expect delays.

Maneb Also in Special Review for EBDC's.

Mefluidide (Embark) PP#1F2545 (soybeans) -- Nature of residue is understood for low residues + grazing restriction. Analytical method OK.

Metalaxyl Registration Standard, 9/88. Nature of residue in plants understood. Ruminant and poultry metabolism studies required. Analytical method

OK. Should be no problem where negligible residues are expected in animal products.

Methamidophos Residue Chemistry Chapter for Registration Standard 2/12/82. Nature of residue in plants and animals adequately understood. Adequate analytical methods.

Methidathion FRSTR, 6/7/88. Product chemistry data gaps. Nature of residue in plants understood only for tomatoes. Ruminant and poultry metabolism studies required.

Methomyl FRSTR 11/20/87. Metabolism in plants understood. Ruminant and poultry metabolism studies required. Ruminant feeding study required. Analytical methods OK.

Methyl Bromide Requirement for analysis of inorganic bromide has been dropped. Nature of residue in plants not understood. Reasonable chance of obtaining registration for preharvest use.

Metolachlor Registration Standard, 9/80. FRSTR 9/87. There are some plant metabolism data gaps. A potato metabolism study was required. No data gaps in animal metabolism. PP#8E3616 (bell peppers), last memo 7/13/89, had no problems.

Metribuzin Registration Standard, 1985, required plant and animal metabolism studies. These have been submitted and are undergoing review in PP#8F3683/FAP#8H5563. Analytical method is provisional pending acceptance of studies. In the meantime, uses producing only negligible residues can be permitted.

Napropamide Registration Standard 11/15/88. Required 3 plant metabolism studies. Animal studies. Registration is possible for negligible residues.

Nitrapyrin Registration Standard 6/85. Plant and animal data gaps. PP#6E3412 (brussel sprouts) not accepted because of plant metabolism data gaps. Earlier reviews (PP#3F2935) had said nature of residue understood.

Oxamyl Registration Standard 6/87. Plant metabolism O.K. Animal studies required. Latest petition PP#8E3604 for non-bell peppers. Important that method in PAM-II be used which measures combined residues of oxamyl and the oxime metabolite.

Oxydemeton-methyl

Registration Standard 9/87. Neither plant nor animal metabolism is understood. Previous minor use petitions have been approved.

Oxyfluorfen

Nature of the residue in plants understood. Nature of residue in animals is not understood for permanent tolerances. Registration possible for predicted negligible residue in animals.

Oxytetracycline

Registration Standard 12/88. Plant metabolism understood. Animal metabolism understood on the basis of no animal feed items at time of R.S. Analytical method OK.

Oxythioquinox (MORESTAN)

Nature of residue in plants not adequately understood. Company is actively working on metabolism problem. In meantime only negligible residues are permitted.

Paraquat

Registration Standard (paraquat dichloride) 6/87. Nature of residue in plants and animals understood. PP#7F1910, memo of 8/31/89. Analytical method validation for paraquat in animal tissues needed.

Parathion

Registration Standard 4/85. Plant metabolism data gaps. PP#6E3449(lentils), memo of 12/8/86, OK for IR-4 petition. Analytical method OK.

Parathion-methyl (= methyl parathion)

Registration Standard 12/8/86. Nature of residue in plants not understood. Three plant studies needed. Prior to Reg. Std. nature of residue has not been problem. Tolerances may be possible for minor use and/or negligible residues.

PCNB

Plant and animal metabolism not understood. Metabolism studies are in progress on cabbage, potatoes and peanuts. OK if negligible residues are expected.

Pendimethalin

Registration Standard 3/85. Plant and animal metabolism studies required. PP#8F3655 (almonds and almond hulls), memo of 12/22/88. Registration was allowed in spite of plant data gaps because proposed tolerance was at limit of sensitivity. Analytical method OK.

Permethrin OK from residue chemistry viewpoint, but note that due to current exposure calculations, oncogenic risk already exceeds 10^{-6} .

Phorate Registration Standard 12/88. Plant metabolism understood. Ruminant metabolism understood but not poultry metabolism. Analytical method lacked proper validation.

Phosphamidon Registration Standard 12/87. Product chemistry data gaps. Metabolism studies required in apples, potatoes, broccoli; ruminants and poultry. However previous petitions have found no such residue chemistry problems (PP#3E3278, hops). For minor use, registration may be possible.

Prometryn Registration Standard 3/87. Plant and animal metabolism studies required. However, PP#7E3464 (dill) allowed because of minor use.

Pronamide Reg. Std issued but not available. PP#4F3097 (grass forage, fodder, hay) nature of residue in plants and animals understood. Adequate analytical method (memo of 9/24/84). PP#6E3457 (winter peas) memo of 1/15/87 had no problems.

Propachlor Registration Standard 12/84. PP#0E2278 (flax seed and straw) is last petition. According to memo 1/30/80, plant metabolism is OK. Analytical method is OK.

Propanil Registration Standard 12/87. Metabolism studies needed in rice and wheat, ruminants and poultry. In last petition - prior to Reg. Std. - nature of residue in plants was said to be understood (PP#1F2534). Tolerances may be possible for minor use and/or negligible residues.

Propargite Registration Standard 9/86. Metabolism studies in plants, ruminants and poultry required. PP#7E3486 (Avocados). No action has been taken because of deficiency in plant metabolism (memo of 9/8/87).

Propiconazole TILT, CGA-64250. PP#9F3706 (Grass, hay), memo 2/7/89. Nature of the residue in plants is understood. Animal metabolism still not understood. Adequate analytical methodology. TILT is an oncogen and apparently the calculated current exposure is near the limit. A registration is possible for minor use, low volume crops where increase in exposure would be

negligible.

Quizalofop-ethyl

DPX-Y6202, ASSURE. PP#3F3252/FAP#6H5479 (Last memo 6/27/88). Should be no problem for minor use petitions. No Registration Standard.

Terbacil

Second Round Review (SRR) 1/20/89. Earlier Guidance Document (1982) said nature of residue in plants and animals adequately understood. SRR says exactly the opposite. Need apple and sugarcane, ruminant and poultry studies. Tolerances may be possible for minor use and/or negligible residues.

Terbufos

FRSTR 10/6/87. Nature of residue in plants adequately understood. Animal metabolism not understood. Analytical method OK. Should be no problem when only negligible animal residues are predicted.

Thiabendazole

PP#7F3553 (Corn), memo of 7/29/88. Metabolism understood in plants and ruminants. Analytical method acceptable.

Thiobencarb

PP#5F3158 is still active. Last memo 5/9/89. Should be no metabolism problems for minor use petition. Adequate analytical methods.

Thiodicarb

PP#8F3578, memo of 7/22/88. Metabolism in plants and animals understood. Adequate analytical method. Note that acetamide, an oncogen, is an animal metabolite and could cause problems.

Thiophanate-methyl

Registration Standard, 5/86. Nature of residue in plants is understood. Additional animal studies required. Better validation data requested. There was no problem in PP#7E3555, for potatoes.

Triallate

No Registration Standard. Last petition PP#6F3346, wheat and barley forage is still pending. Nature of residue in plants is not adequately understood (memo of conference 6/1/88). Regulation based on negligible residues may be possible.

Tricyclopyr

No Registration Standard. PP#8G3571 (rice grain, animal products). Plant metabolism OK. Questions about poultry metabolism. Some outstanding analytical questions.

Trifluralin Registration Standard 7/85. Plant metabolism studies were required for corn and leafy/brassica leafy vegetables. Ruminant and poultry studies required. May be possible for minor use registration. Last petition: PP#1F2579 (flax).

Triphenyltin hydroxide
 Registration Standard 9/85. Standard recommended that the metabolites diphenyltin oxide and monophenylstannoic acid be included in tolerance expression. Metabolism in plants and animals adequately understood. S. Hummel, memo of 9/4/86 (response to Reg. Std.) -- analytical method for meat, milk, poultry and eggs still needed. Residues in soybeans degraded rapidly when stored at room temperature for more than one day.

Vinclozolin No Registration Standard. PP#5F3237 -- ruminant and poultry feeding studies outstanding. PP#'s 9F3762 (succulent beans) and 9F3750 (milk, etc.) are in active review.

Zinc Phosphide
 Registration Standard, 9/81. PP#9E3748, for sugar beets, had no problems.

Ziram No Registration Standard. Most of established tolerances were the result of Congressional hearings in 1950. One petition -- No. 29, for strawberries, almonds, pecans. Nature of the residue is probably adequately understood based on the known chemistry of dithiocarbamates. Ziram is not in special review.

cc: RF, Circu(7), Reviewer (Mike Flood), Stephanie Willett (DEB), Minor Use File, ISB/PMSD (Eldredge), R.Schmitt.
 RDI:SectionHead:RSQuick(byMJN):9/27/89.BranchSeniorScientist:
 RALoranger:9/27/89.
 H7509C:DEB:557-4362:MTF:mtf:CM#2:Rm810:9/28/89.