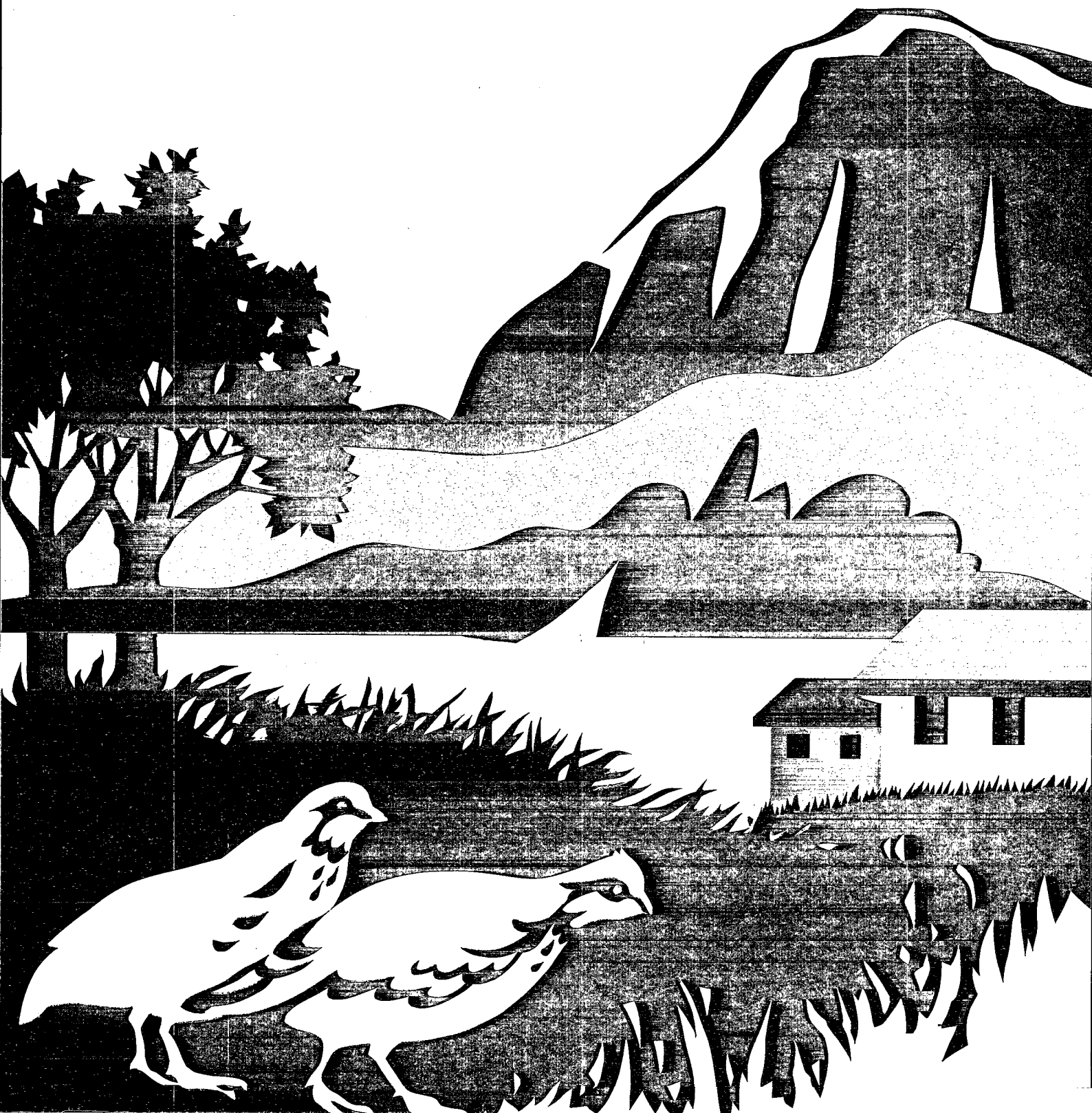
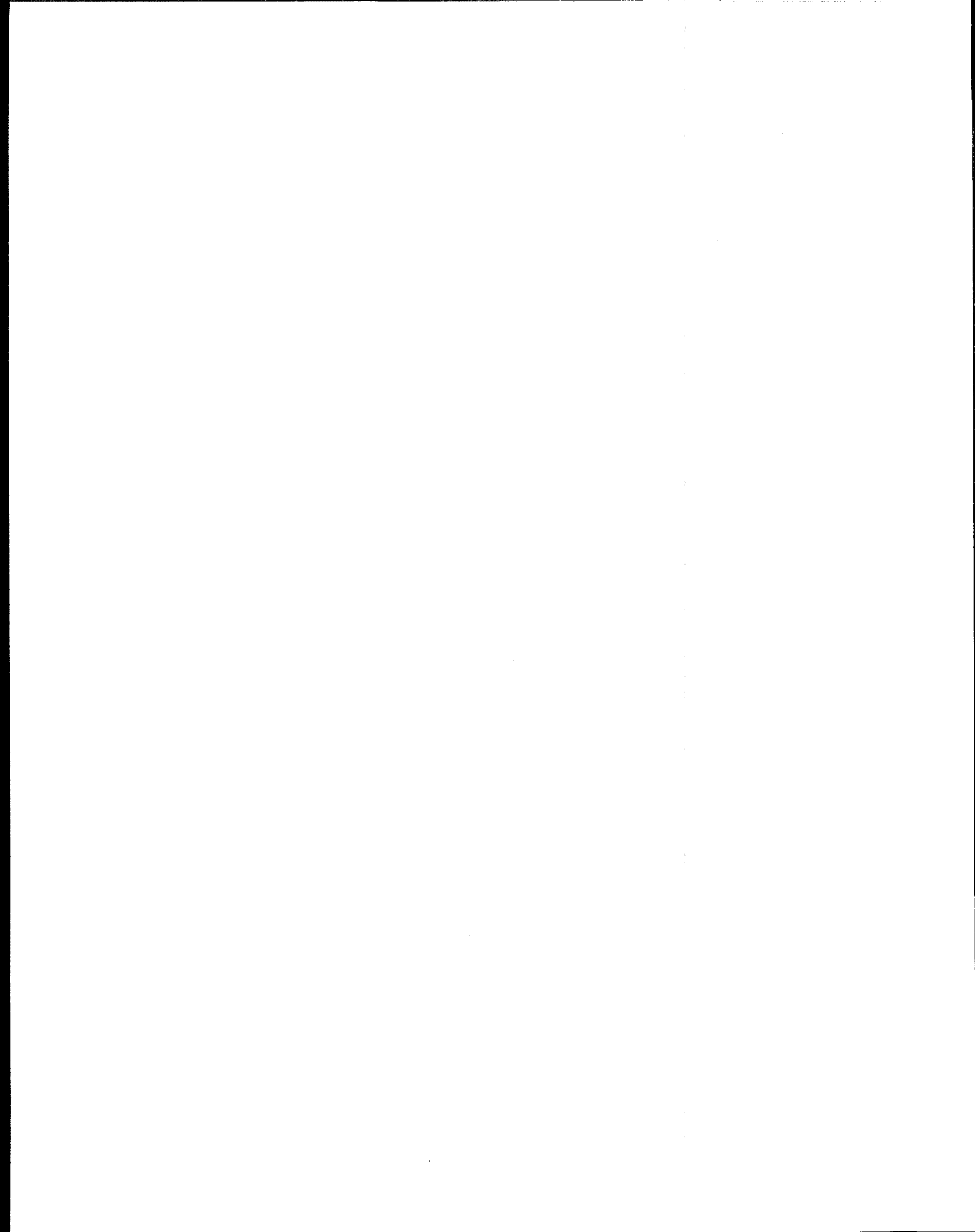




# Pesticide Reregistration Progress Report For 1997





# PESTICIDE REREGISTRATION PROGRESS REPORT FOR 1997

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## **GENERAL INFORMATION**

### **Purpose**

The Pesticide Reregistration Progress Report for 1997 provides information on the status of the pesticide reregistration and Special Review programs mandated by the federal pesticide law, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). It summarizes the EPA Office of Pesticide Programs' (OPP's) cumulative progress in implementing these programs as of early 1998. This report also provides detailed information about the Reregistration Eligibility Decisions (REDs) and Special Review decisions completed by the Agency during fiscal year and calendar year 1997, under new provisions of the Food Quality Protection Act (FQPA) of 1996.

### **Availability**

➤ Electronic copies of the Pesticide Reregistration Progress Report for 1997 and many other related documents are available on the EPA Office of Pesticide Programs' home page, at:

**<http://www.epa.gov/pesticides>**

Many RED documents and RED Fact Sheets also are available electronically. Please see:

**<http://www.epa.gov/REDs>**

⇒ Printed copies of the Pesticide Reregistration Progress Report are available from:

National Center for Environmental  
Publications & Information (EPA/NCEPI)  
P.O. Box 42419  
Cincinnati, OH 45242-2419  
Telephone: 1-800-490-9198  
Fax: 513-489-8695

National Technical Information Service  
(NTIS)  
5285 Port Royal Road  
Springfield, VA 22161  
Telephone: 703-487-4650  
Fax: 703-321-8547

### **Comments?**

The Pesticide Reregistration Progress Report will be updated periodically. Your comments and suggestions are welcomed. Please contact:

Pesticide Reregistration Progress Report  
Special Review & Reregistration Division (7508W)  
Office of Pesticide Programs  
Environmental Protection Agency  
Washington, DC 20460  
Telephone: 703-308-8000; Fax: 703-308-8005



## BACKGROUND: THE PESTICIDE REREGISTRATION PROGRAM

As mandated by FIFRA, EPA is conducting a comprehensive review of older pesticides to evaluate their health and environmental effects and make decisions about their appropriate future use. Through this pesticide reregistration program, EPA is examining health and safety data for pesticide active ingredients initially registered before November 1, 1984, and determining whether they are eligible for reregistration. To be "eligible", a pesticide must have a substantially complete supporting data base, and must not cause unreasonable risks to human health or the environment when used in accordance with its approved product labeling. In addition, all pesticides must meet the new provisions of the Food Quality Protection Act (FQPA) of 1996.

Through the reregistration program, EPA is ensuring that older pesticides meet contemporary health and safety standards and product labeling requirements, and that their risks are mitigated.

### FIFRA '88 Accelerated Reregistration

The 1988 amendments to FIFRA created the reregistration scheme that EPA has been using for nearly a decade. The Agency will complete this program within the next several years.

#### **Scope**

The accelerated reregistration program under FIFRA '88 encompasses all pesticide active ingredients initially registered before November 1, 1984. These approximately 1,150 active ingredients were organized into 612 "cases" or groups of related pesticide active ingredients.

#### **Lists**

FIFRA '88 directed EPA to divide the cases undergoing reregistration into four lists: List A, B, C, and D.

**List A** - List A, which contains most food use pesticides, consists of the 194 chemical cases (or 350 individual active ingredients) for which EPA had issued Registration Standards prior to FIFRA '88. Each Registration Standard document summarized the data available for a pesticide, called in any additional studies needed for reregistration, and required necessary product labeling changes. The safety of many food use pesticides improved through this earlier program as EPA obtained updated studies and effected labeling improvements.

**Lists B, C, and D** - The remaining pesticides requiring reregistration were divided into three lists based on their potential for human exposure and other factors, with List B containing pesticides of greater concern and List D containing pesticides of less concern. Some of the classification criteria included potential for residues in food or drinking water,

significance of outstanding data requirements, potential for worker exposure, Special Review or restricted use status, and unintended adverse effects to animals and plants.

### ***Phases***

FIFRA '88 established a reregistration process consisting of five phases, with timeframes and responsibilities for both EPA and pesticide producers ("registrants"). Because EPA had already substantially reviewed them under the Registration Standards program, the List A pesticides moved directly to Phase 5. Pesticides on Lists B, C, and D went through all five phases.

***Phase 1 - List Active Ingredients*** - As required, EPA published Lists A, B, C, and D within 10 months of FIFRA '88 (by October 24, 1989) and asked registrants of these pesticides whether they intended to seek reregistration.

***Phase 2 - Declare Intent and Identify Studies*** - Phase 2 required registrants to notify EPA whether or not they intended to reregister their products; to identify and commit to providing necessary new studies; and to pay the first installment of the reregistration fee. During this phase, EPA issued guidance to registrants for preparing their Phase 2 and Phase 3 responses. Phase 2 activities were completed in 1990.

***Phase 3 - Summarize Studies*** - During Phase 3, following guidance documents provided by EPA, registrants were required to submit summaries and reformat acceptable studies, "flag" studies indicating adverse effects, re-commit to satisfying all applicable data requirements, and pay the final installment of the reregistration fee. Phase 3 ended in October 1990.

***Phase 4 - EPA Review and Data Call-In*** - During Phase 4, EPA reviewed all Phase 2 and 3 submissions and required registrants to meet any unfulfilled data requirements within four years. Phase 4 was completed in 1993.

***Phase 5 - Reregistration Decisions*** - In this final phase, EPA reviews all of the studies submitted for a reregistration case, and decides if pesticide products containing the active ingredient(s) are eligible for reregistration -- whether the data base is substantially complete, and the pesticide does not cause unreasonable adverse effects to people or the environment when used according to product label directions and restrictions. EPA also considers whether the pesticide meets the new safety standard of the FQPA. The results of the Agency's review are presented in a RED document. Product reregistration occurs about two years later, after certain product-specific studies and revised labeling are submitted to EPA and approved. Before a product may be reregistered, however, all of its pesticide active ingredients must be eligible for reregistration.



## **The Food Quality Protection Act of 1996**

The pesticide reregistration program acquired significant new dimensions on August 3, 1996, when the Food Quality Protection Act was enacted. FQPA, which amends both FIFRA and the Federal Food, Drug, and Cosmetic Act (FFDCA), establishes a new safety standard for pesticide residues in food and emphasizes protecting the health of infants and children.

Under FQPA, all pesticide food uses must be "safe"; that is, EPA must be able to conclude with "reasonable certainty that no harm will result from aggregate exposure" to each pesticide from dietary and other sources. In determining allowable levels of pesticide residues in food, the Agency must conduct a comprehensive assessment of each pesticide's risks, considering:

- Aggregate exposure of the public to residues from all sources including food, drinking water, and residential uses;
- Cumulative effects of pesticides and other substances with common mechanisms of toxicity;
- Special sensitivity of infants and children to pesticide; and
- Estrogen or other endocrine effects.

Within ten years of enactment of the new law, EPA must reassess all existing "tolerances" (maximum limits for pesticide residues in foods) and exemptions from the requirement of a tolerance, for both the active and inert ingredients in pesticide products. The Agency must consider the pesticides posing the greatest potential risks first, to ensure that they meet FQPA's new safety standard.

EPA is using reregistration to accomplish tolerance reassessment, the cornerstone of the FQPA. Once reregistration is completed in about 2002, all pesticides will be re-examined periodically in the future through registration review. This new program created by FQPA requires EPA to review every registered pesticide on a suggested 15-year cycle.

Looking to the future, then, the public will have assurance that all registered pesticides are being reviewed periodically and updated to meet current scientific and regulatory standards.

### **Current Goals and Direction**

#### ***Complete Reregistration by 2002***

EPA intends to complete the pesticide reregistration program mandated by FIFRA '88 and reregister most older pesticides by 2002.

#### ***Complete Tolerance Reassessment on Schedule***

EPA intends to meet the tolerance reassessment timeframes specified by FQPA. The first of these deadlines requires the Agency to reassess 33 percent of all existing tolerances and tolerance exemptions by August 3, 1999.

### ***Review the Riskiest Pesticides First***

In keeping with FQPA requirements, EPA will review the potentially riskiest pesticides first for purposes of both reregistration and tolerance reassessment. These pesticides include the organophosphates, carbamates, organochlorines, and carcinogens.

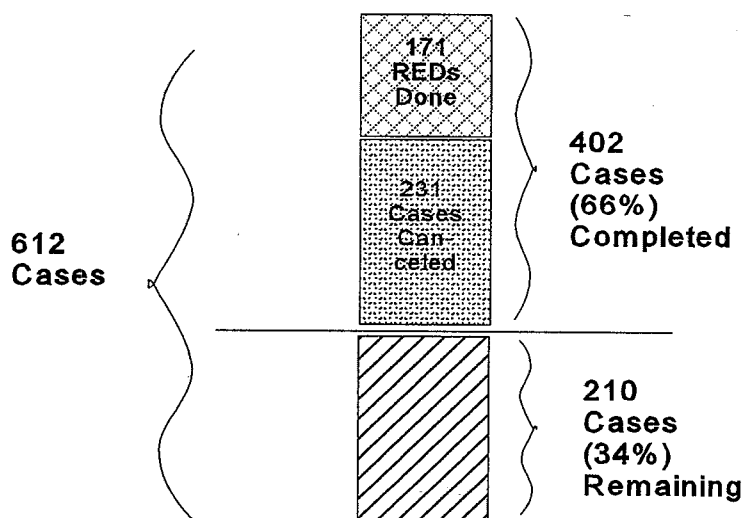
### ***Complete 40 REDs per Year***

EPA intends to complete about 40 REDs per year during the next several years. Currently, the Agency is developing a regulatory strategy for the organophosphate pesticides, which is key to meeting both the tolerance reassessment and reregistration goals.

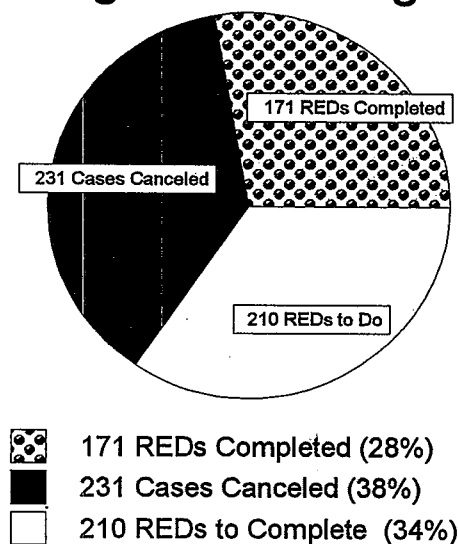
## OVERALL STATUS OF REREGISTRATION

### Cumulative Reregistration Summary

At present, the pesticide reregistration program is about 66% complete. EPA has completed a total of 171 REDs -- 28% of the original 612 cases that were subject to reregistration when the program began in late 1988. An additional 231 cases (38%) have been voluntarily canceled through the reregistration process, leaving 210 cases (34%) to be completed during the next five years. [Note: The 171 REDs include about 8 voluntary cancellations. The 53 food use REDs that were completed before FQPA was enacted will be revisited to ensure that they meet the statute's new safety standard.]



### Reregistration Progress



**Universe = 612 Cases**

### Profile of Completed REDs

Total REDs Completed = 171  
 Active Ingredients Included = 265  
 Products Included = 6,194  
 REDs with Food Uses = 70  
 Tolerances Reassessed = 1,569

The 171 REDs completed so far encompass about 265 pesticide active ingredients and 6,194 products. 70 of these REDs have food uses (53 were completed pre-FQPA and 17 post-FQPA). About 1,569 tolerances have been reassessed for these pesticides -- 1,157 pre-FQPA and 412 post-FQPA. The pre-FQPA tolerance reassessments will be counted toward meeting the statute's tolerance reassessment timeframes after they have been reviewed again to ensure that they meet FQPA's new safety standard.

## Pesticide Usage Covered by REDs

The 171 REDs completed through the end of fiscal year 1997 cover more than 60% of the 4.5 billion pounds of pesticide active ingredients used annually in the United States.

The completed REDs cover almost 30% of the 1.8 billion pounds of "conventional" pesticides used annually in the U.S. (please see table below). Looking at conventional pesticides by market segment, the completed REDs cover an estimated 23.4% of consumer-applied pesticides, 27.5% of pesticides used in agriculture, and 32.6% of pesticides applied by commercial applicators to control residential and commercial pests.

The completed REDs cover 78% of the 2.7 billion pounds of "unconventional" pesticides used annually in the U.S.. Unconventional pesticides include chlorine, calcium hypochlorite (bleach), coal tar/creosote, and various other oils, alcohols, etc..

**Amount\* (Volume) of Conventional Pesticide Usage\*\* Covered by 171 REDs**

Type of Pesticide	Consumer Use	Agricultural Use	Commercial Use	Total Percent
Antimicrobials/ Algicides	100 %	3 %	56 %	55.4 %
Biologicals	100 %	100 %	73.3 %	83.2 %
Fungicides	1 %	5 %	4 %	4.5 %
Herbicides/Growth Regulators	27.7 %	42.0 %	32.8 %	40.4 %
Insecticides/Fumi- gants/Nematicides	36 %	1 %	12.5 %	4.8 %
Repellents	1.9 %	n /a	13.5 %	5.8 %
Rodenticides/ Molluscicides	100 %	0 %	76.2 %	71.1 %
Wood Preservatives	0 %	0 %	0%	0%
TOTAL	23.4 %	27.5 %	32.6 %	29.6 %

\* Pounds used may not indicate the relative percent of area treated or number of applications.

\*\* Estimates of usage are based on 1995 pesticide distribution and use.

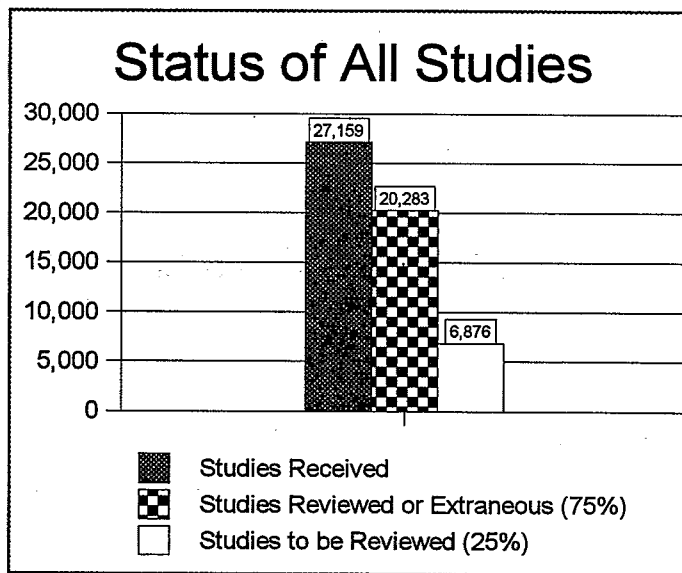
## Review Status of Studies Received

In order to make well informed reregistration eligibility decisions, EPA must have a full complement of scientific studies demonstrating pesticides' human health and environmental effects. Pesticide producers, or registrants, must provide these studies to support their products. EPA reviews the studies submitted and uses those that are acceptable in reviewing pesticides for reregistration.

### Profile of Studies' Review Status

Studies Received = 27,159  
 Studies Reviewed or Extraneous = 20,283  
 (19,007 Reviewed + 1,276 Extraneous)  
 Studies to be Reviewed = 6,876

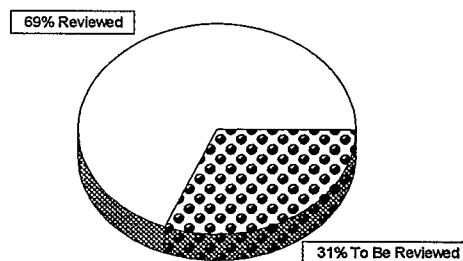
So far, EPA has received approximately 27,159 scientific studies in support of reregistration, and has dealt with 75% or 20,283 of them -- 19,007 of these studies have been reviewed and 1,276 have been found extraneous. (Extraneous studies are those that are no longer needed because the guideline or data requirement has been satisfied by other studies or has changed.) EPA has 25% or about 6,876 more studies to review in completing the reregistration program.



### Reduced Backlog

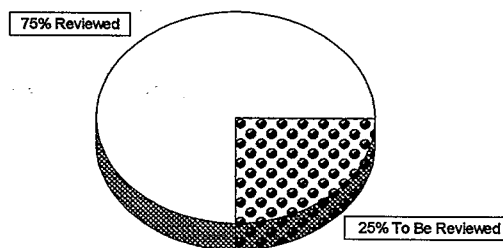
EPA reduced the "backlog" of reregistration studies awaiting review from 31% at the end of 1996 to 25% at the end of 1997.

Study Review "Backlog", late 1996



Studies Reviewed 69%  
 Studies Awaiting Review 31%

Study Review "Backlog", late 1997



Studies Reviewed 75%  
 Studies Awaiting Review 25%

## Review Status of Studies by List

The table below shows the number and percent of studies reviewed and extraneous, awaiting review, and received in total, for pesticides on reregistration Lists A through D and for all pesticides undergoing reregistration.

### Number & Percent of Studies Reviewed by List

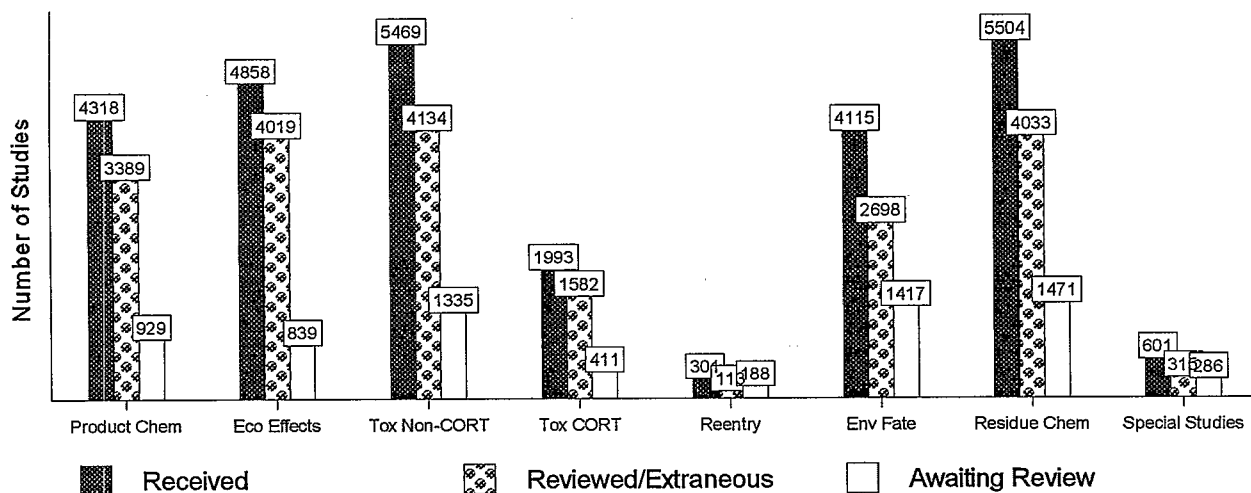
	Studies Reviewed + Extraneous	Studies Awaiting Review	Total Studies Received
List A	10,061 + 291 = 10,352 (80%)	2,656 (20%)	13,008
List B	5,541 + 663 = 6,204 (67%)	2,999 (33%)	9,203
List C	2,126 + 228 = 2,354 (73%)	873 (27%)	3,227
List D	1,279 + 94 = 1,373 (80%)	348 (20%)	1,721
Lists A through D	19,007 (70%) + 1,276 (5%) = 20,283 (75%)	6,876 (25%)	27,159

## Review Status of Studies by Discipline

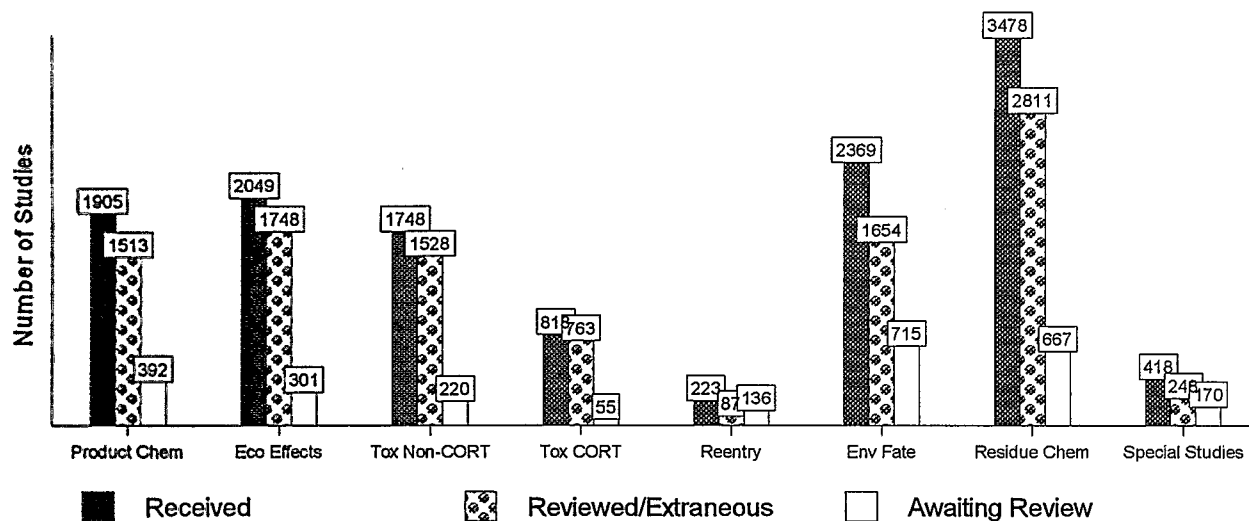
The following tables show the number of reregistration studies received, reviewed or extraneous, and awaiting review by scientific discipline for pesticides on Lists A, B, C, and D, collectively and individually. Types of studies included are:

- Product Chemistry;
- Ecological Effects;
- Toxicology, Non-CORT (measures the toxicity of pesticides in aspects other than CORT);
- Toxicology, CORT (Chronic Feeding, Carcinogenicity (Oncogenicity), Reproduction, and Developmental Toxicity (Teratology));
- Reentry, Non-Dietary Exposure;
- Environmental Fate;
- Residue Chemistry; and
- Special Studies.

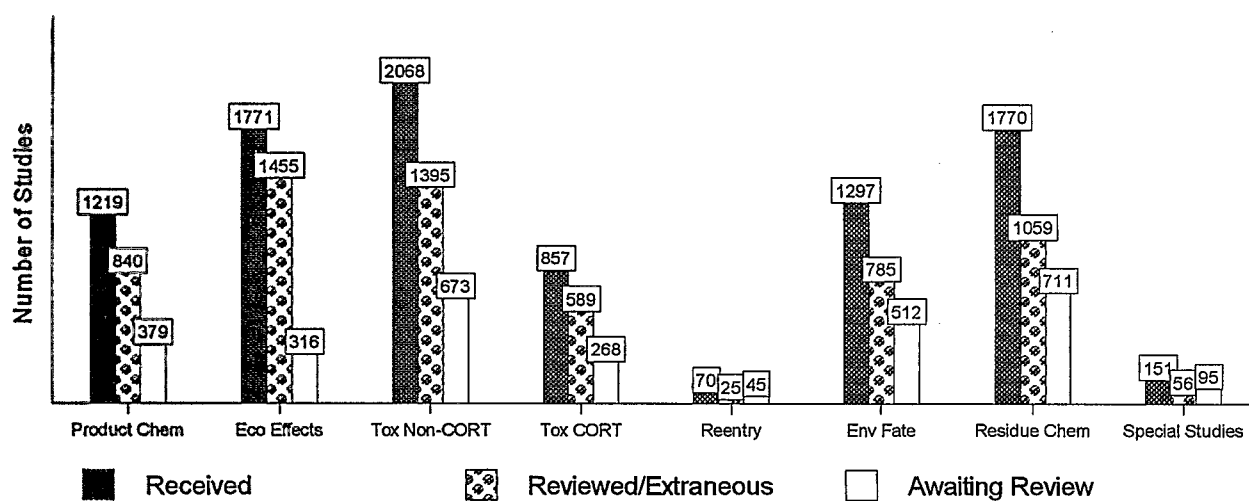
### Studies Received, Reviewed/Extraneous, and Awaiting Review by Discipline for Lists A, B, C and D



# **Studies Received, Reviewed/Extraneous, and Awaiting Review by Discipline for List A Pesticides**

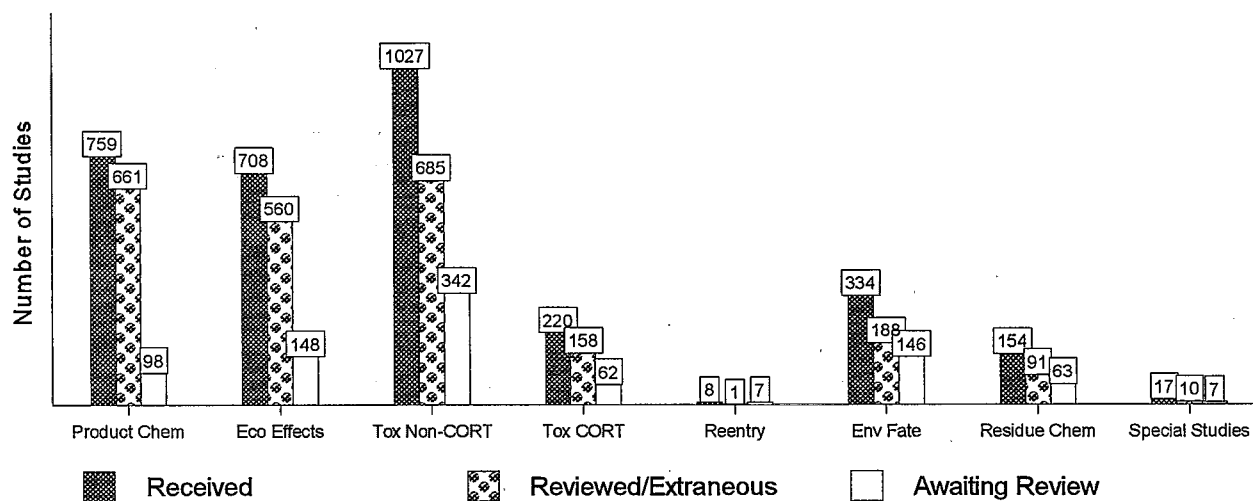


# **Studies Received, Reviewed/Extraneous, and Awaiting Review by Discipline for List B Pesticides**

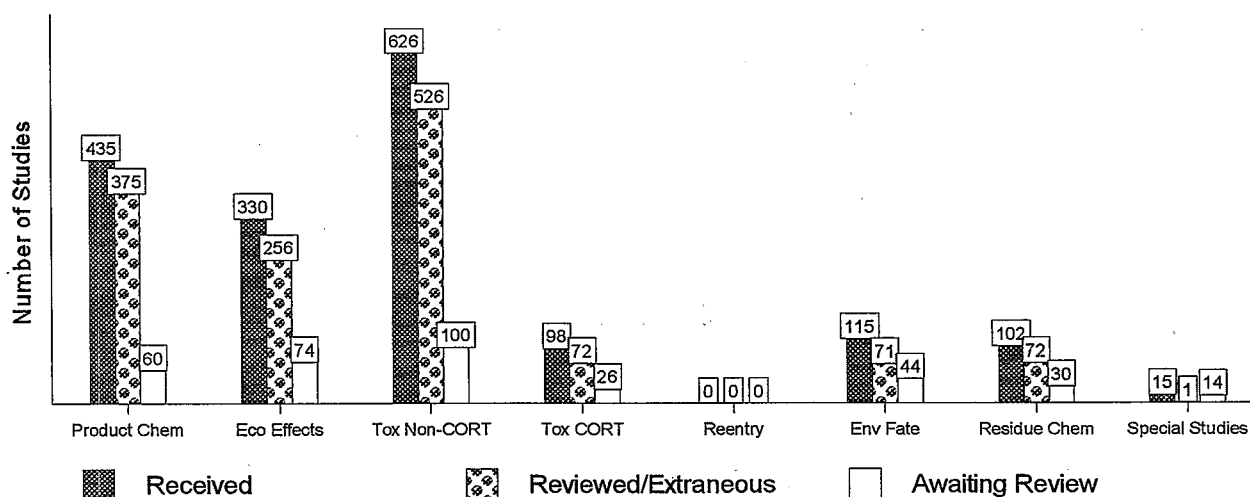




# **Studies Received, Reviewed/Extraneous, and Awaiting Review by Discipline for List C Pesticides**



# **Studies Received, Reviewed/Extraneous, and Awaiting Review by Discipline for List D Pesticides**



## THE POST-FQPA REDS

### Profile of the Post-FQPA REDs

OPP has completed 30 REDs since FQPA was enacted in August 1996, 7 at the end of fiscal year 1996 (FY 96) and 23 in FY 97. Of these 30 post-FQPA REDs, 18 have food uses. About 412 tolerances were reassessed in completing these post-FQPA REDs.

Post-FQPA REDs = 30  
(7 in late FY 96 + 23 in FY 97)  
Post-FQPA REDs with Food Uses/  
Tolerances = 18  
Tolerances Reassessed for  
Post-FQPA REDs = 412

### The 30 Post-FQPA REDs

(\* indicates food uses)

#### 7 FY 96 Post-FQPA REDs

- \*Bromacil (case 0041)
- \*Colletotrichum gloesporioides (case 4103)
- \*Mepiquat Chloride (case 2375)
- \*Paraquat Dichloride (case 0262)
- \*Polyhedral Inclusion Bodies (NPV) (case 4106)
- S-Kinoprene (case 4118)
- \*Virelure (case 4118)

#### 23 FY 97 REDs

##### **Rodenticide Cluster:**

- Brodifacoum (case 2755)
- Bromethalin (case 2765)
- Bromadiolone (case 2760)
- Chlorophacinone (case 2100)
- Diphacinone (case 2205)
- Pival (case 2810)

##### **Others:**

- \*Bt (Bacillus thuringiensis) (case 0247)
- Butralin (case 2075)
- \*Dichlobenil (case 0263)
- \*Diflubenzuron (case 0144)
- \*Diphenylamine (case 2210)
- IPBC (case 2725)
- Methylene bis-thiocyanate (MBT) (case 2415)
- \*Metribuzin (case 0181)
- Paranitrophenol (PNP) (case 2465) --  
(Voluntary Cancellation 5/30/02)
- \*Pendimethalin (case 0187)
- \*Propoxur (case 2555) --  
(Tolerance proposed)
- \*Sulprofos (case 0076) --  
(Voluntary Cancellation)
- \*Terbacil (case 0039)
- \*Thiobencarb (case 2665)
- \*Triclopyr (case 2710)
- Triethylhexahydro-s-triazine (case 3147)
- \*Zinc Phosphide (case 0026)

## THE FISCAL YEAR 1997 REDS

### Profile of FY97 REDs

EPA completed 23 REDs during fiscal year 1997, 12 with food uses. In completing these REDs, about 265 tolerances were reassessed under FQPA.

FY97 REDs = 23  
FY97 REDs with Food Uses = 12  
Tolerances Reassessed for FY 97  
REDs = 265

### Risk Reduction

Reducing the risks of older pesticides continues to be a primary focus of the reregistration program. In completing REDs, EPA works with pesticide registrants to develop needed risk mitigation measures or, if necessary, regulatory controls. As a result, each of the FY 97 REDs contains a variety of measures to effectively reduce these pesticides' risks.

### Highlights of the FY97 REDs

**Rodenticide Cluster RED** - During fiscal year 1997, for the first time, EPA developed a RED encompassing a group of pesticides with similar use patterns. The Rodenticide RED includes six reregistration cases, all of which are rodenticides used indoors and outdoors in urban, suburban, and rural areas. Most of these products, sold as pelletized baits to control rats, mice, and other rodents, are acutely toxic. EPA is concerned about their use in residential settings because an increasing number of related human incidents have been reported in recent years, most involving children less than six years old. The Agency also is concerned about exposures to household pets, especially dogs, and about secondary nontarget poisonings.

Five of the six rodenticides included in this RED are eligible for reregistration, and EPA believes they can be used without posing unreasonable risks, but only by adding strengthened product labeling and a number of significant risk mitigation measures. For example, an indicator dye (to help identify whether a child or pet has actually consumed the pesticide) and a bittering agent must be included in formulating these products; tracking powders will be classified as Restricted Use Pesticides; registrants must submit annual poison control center incident data; and use directions must be added to product labels. A stakeholder group will be assembled to discuss additional ways to significantly reduce exposure and risk to children and pets.

**Bacillus thuringiensis (Bt) RED** - Bt is a group of similar bacteria that act as insecticides, and are used on growing agricultural crops, harvested crops in storage, ornamentals, bodies of water, and around the home to control various groups of insects, depending on the toxins produced by the specific isolate. In addition to toxins that are active against insect pests, however, Bt may produce undesirable toxins. To mitigate risks of potential toxicity to the public (including the risk of human food poisonings) or to nontarget species from these toxins, EPA requires the following through the RED:

- All registrants must analyze each batch of Bt produced for the presence of other microbes. This will reduce the chance of some undesirable toxins being present.
- The manufacturing process for each registered technical grade active ingredient must be reevaluated and standardized.
- Label changes must be made including a revised percent active ingredient, adding a statement of explanation, and including the specific toxins responsible for the pesticidal activity.

Bt is OPP's largest biopesticide RED, encompassing over 200 end use products.

## Risk Reductions Achieved Through FY 97 REDs

The FY 97 REDs include many changes intended to reduce risks to people and the environment. Risk reduction measures initiated by these 23 REDs are summarized below.

### Risk Reduction Measures in FY 97 REDs

Number of REDs	Risk Reduction Measures Required by REDs
8	Voluntary Cancellation or Some Uses Not Eligible/Not Yet Eligible*
5	Limit Amount, Frequency of Use
10	Residential / Children's Risks Addressed
21	Application Restrictions
7	Restricted Use Pesticide Classification
16	Personal Protective Equipment (PPE) / Restricted Entry Intervals (REIs)
20	User Safety Requirements or Recommendations
5	Special Packaging or Engineering / Production Controls
4	Ground Water or Surface Water Safeguards
6	Spray Drift Labeling
6	Other Environmental Safeguards
6	Ecological Safeguards
8	Other **
12	Tolerances Reassessed ***

\* Includes 2 voluntary cancellations (PNP and Sulprofos); 1 not eligible (Pival); and 5 with some uses not yet eligible (Chlorophacinone, Dichlobenil, Diphacinone, IPBC, and MBT).

\*\* Includes: Bt - Efficacy data required for public health uses; and Rodenticide Cluster (6 REDs) and Zinc Phosphide - Two-phase risk reduction program.

\*\*\* Includes Propoxur for which a tolerance is being proposed.

# Risk Reduction Measures in Individual FY 97 REDS

RED	Voluntary Cancellation / Some Uses Not Yet Eligible	Limit Amount, Frequency, Timing of Use	Residential / Kids' Risks Addressed	Application Restrictions	Restricted Use Pesticide	P P E / R E I	User Safety Requirements, Recommendations	Special Packaging; Engineering / Production Controls	Ground or Surface Water Safeguards	Spray Drift Labeling	Other Environmental Safeguards	Ecological Safeguards	Other	Tolerances Reassessed
Bt						✓		✓		✓	✓		*	✓
Butralin				✓		✓	✓							
Dichlobenil	✓	✓	✓	✓		✓	✓							✓
Diflubenzuron				✓		✓	✓		✓	✓		✓		✓
Diphenylamine				✓		✓	✓					✓		✓
IPBC	✓			✓		✓	✓				✓	✓		
MBT	✓			✓		✓	✓	✓			✓			
Metribuzin		✓		✓		✓	✓		✓	✓				✓
Pendimethalin		✓	✓	✓		✓	✓	✓		✓	✓			✓
PNP	✓✓			✓		✓	✓							
Propoxur				✓		✓	✓					✓		✓
Rodenticides (6)	✓✓ 2 ✓		6 ✓	6 ✓	6 ✓		6 ✓						6 **	
Sulprofos	✓✓													✓

RED	Voluntary Cancellation / Some Uses Not Yet Eligible	Limit Amount, Frequency, Timing of Use	Residential / Kids' Risks Addressed	Application Restrictions	Restricted Use Pesticide	P P E / R E I	User Safety Requirements, Recommendations	Special Packaging; Engineering / Production Controls	Ground or Surface Water Safeguards	Spray Drift Labeling	Other Environmental Safeguards	Ecological Safeguards	Other	Tolerances Reassessed
Terbacil				✓		✓			✓					✓
Thiobencarb				✓		✓	✓	✓		✓				✓
Triclopyr		✓	✓	✓		✓	✓		✓	✓				✓
Triethylhexa-hydro-s-triazine		✓		✓		✓	✓	✓			✓	✓		
Zinc Phosphide			✓	✓	✓	✓	✓				✓	✓	***	✓
TOTAL	8	5	10	21	7	16	20	5	4	6	6	6	8	12

✓ = Some Uses Not Yet Eligible (5)

✓✓ = One case, Pival, is Not Eligible (1)

✓✓✓ = Voluntary Cancellation of All Remaining Uses (2)

\* = Efficacy Data Required for Public Health Uses

\*\* = 2-Phase Program for Short and Long Term Risk Reduction

\*\*\* = 2-Phase Program as for Rodenticides

## FY 97 REDs: Uses, Risks, and Risk Reduction Measures

The reregistration eligibility, pesticide type, uses, risks, risk reduction measures, and EPA contacts associated with each of the FY 97 REDs are summarized below.

RED (Case #), Author/CRM*, Eligibility, Food/Non-Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<b>Bacillus thuringiensis (Bt)</b> (Case 0247)  Bill Schneider, BPPD  All uses eligible.  Food uses -- 5 tolerances to be reassessed.	Insecticide / biopesticide used on many food and non-food crops, and in forests, parks, nurseries, greenhouses, and around residences (outdoors).  Bt poses no toxicological concerns, but may produce undesirable toxins. Dry, anhydrous formulations may cause eye irritation effects.	To mitigate risks from undesirable toxins: > Production batch testing is required; > Manufacturing process for each TGA must be reevaluated and standardized. Percent Active Ingredient - must be recalculated and included on the label. Insecticidal Toxins - must be identified on the label. Efficacy Data - must be submitted for Bt products with mosquito, blackfly, or other public health pest control uses. PPE: > All handlers must wear respirator; > Protective eyewear required for dry, anhydrous products. Environmental Hazards statements required to avoid direct application to water. Spray Drift Labeling required for all products that can be applied aerially.
<b>Butralin</b> (Case 2075)  Tom Luminello  All uses eligible.  No food uses.	Herbicide used only as a plant growth regulator on tobacco.  Poses no significant toxicological concerns and minimal worker inhalation and dermal exposure risks.	Early entry PPE required (coveralls, chemical-resistant gloves, shoes and socks); 12 hour REI; Application Restrictions - to protect workers or other persons from exposure due to application or spray drift; User safety requirements and recommendations. Old tolerances (6) to be revoked.

\*Chemical Review Manager who wrote the RED document.

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p>Dichlobenil (Case 0263)</p> <p>Suzanne Cerrelli / Dana Lateulere</p> <p>All uses eligible except sewer treatment and granular backpack applications (more data are needed).</p> <p>Food uses — 14 tolerances reassessed for dichlobenil and its metabolite BAM.</p>	<p>Herbicide used on agricultural, residential, ornamental and industrial sites, and to control tree roots in sewers.</p> <p>Low acute toxicity, Group C carcinogen, systemic toxicity in dog study. No dietary/residential risk concerns; worker risks of some concern. Poses risk to ground water quality. Granulars pose potential risks to birds. At highest application rate, unincorporated use of granular poses risks to most organisms.</p>	<p>Reduce Application Rate - from 20 lbs ai/acre to 10 lbs ai/acre maximum. Soil incorporation required for 10% granular formulation. Ventilation required for use in inhabited buildings. Other application restrictions. Ground Water Advisory required. PPE - Applicators/handlers must wear long sleeved shirt &amp; long pants, shoes &amp; socks; mixers &amp; loaders also must wear chemical- resistant gloves and apron; sewer use requires chemical-resistant gloves. Respirator also required for products in Toxicity Category I or II for inhalation toxicity. REI - 24 hour REI required for horticultural/nursery uses; 12 hour REI required for other uses under WPS. Early Entry PPE - Coveralls, chemical- resistant gloves, shoes &amp; socks required at WPS sites. Engineering Controls - Closed systems (including water soluble bags) or enclosed cabs may reduce some PPE requirements. User safety requirements and recommendations. Home Use - Post-application reentry statement, application restrictions, user safety recommendations required.</p>



RED (Case #), Author/CRM*, Eligibility, Food/Non-Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Diflubenzuron</b> (Case 0144)</p> <p>Susan Jennings</p> <p>All uses eligible.</p> <p>Food uses -- 32 tolerances reassessed.</p>	<p>Insecticide/ acaricide (insect growth regulator) used to control leaf-eating larvae of insects feeding on agricultural, forest and ornamental plants. (No home uses.)</p> <p>Low acute toxicity but affects hemoglobin. Systemic toxicity endpoint of concern. Group E carcinogen, but metabolite PCA is Group B2 carcinogen. Dietary risk acceptable (<math>1 \times 10^{-6}</math>). Worker risks acceptable with PPE. Very highly toxic to aquatic invertebrates.</p>	<p>PPE - Long sleeved shirt &amp; long pants, shoes &amp; socks, and chemical-resistant gloves required. Dust/mist filtering respirator also required for mixers &amp; loaders of wettable powder formulations for aerial applications. Early Entry PPE - Coveralls, chemical-resistant gloves, shoes &amp; socks required. REI - 12 hour REI required.</p> <p>Engineering Controls - Closed systems (including water soluble bags) or enclosed cabs may reduce some PPE requirements. Buffer Zone - 150 ft buffer zone for aerial applications and 25 ft vegetative buffer strip required to reduce runoff. Spray Drift language required for all products applied aurally. Application Restrictions required to protect workers and others from drift. Statement required warning of toxicity to aquatic invertebrates. User safety requirements and recommendations.</p>
<p><b>Diphenylamine</b> (Case 2210)</p> <p>Ben Chambliss</p> <p>All uses eligible.</p> <p>Food uses -- 3 tolerances reassessed.</p>	<p>Plant growth regulator used post-harvest (indoors) to control storage scald on apples.</p> <p>Low acute toxicity and "not likely" a carcinogen, but diphenylnitrosamine impurity is a B2 carcinogen. Dietary risk acceptable. Worker risks acceptable with PPE and engineering controls.</p>	<p>PPE - Applicators must wear single layer body covering (long sleeved shirt &amp; long pants). Mixer/loaders must add chemical-resistant gloves.</p> <p>Engineering Controls - Closed systems (enclosed cabs) - If truck driver hauling flatbed loaded with apple bins remains in cab with windows &amp; doors closed during drenching applications, PPE is not required. Application Restrictions required to protect workers and others from drift. Environmental Hazards statement required warning users of toxicity to fish and aquatic invertebrates. User safety requirements and recommendations.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>IPBC or 3-Iodo-2-propynyl butyl-carbamate</b> (Case 2725)</p> <p>Richard Gebken</p> <p>All uses eligible <b>except</b> industrial wood protection treatments to milled forest products; heating, ventilation &amp; air conditioning (HVAC) uses; textile uses; and non-industrial wood treatments other than brush, roller, and airless or compressed air sprayer use – more exposure data are needed.</p> <p>No food uses.</p>	<p>Carbamate fungicide/ antimicrobial used in paint, adhesives, metal cutting fluids, plastics, textiles, inks, paper coatings, wood products. Also used in residential settings as a wood preservative stain &amp; paint preservative, and in heating, ventilation and air conditioning systems to control mold and fungi.</p> <p>Severely irritating to the eyes (Toxicity Category I). "Not likely" to be carcinogenic. Risks to workers reduced with PPE. Some uses not eligible without additional exposure data.</p>	<p>PPE - Long sleeved shirt &amp; long pants, chemical-resistant gloves, shoes &amp; socks. If end use product in Toxicity Category I or II for eye irritation potential, protective eyewear is also required.</p> <p>Application Restrictions - Do not apply product in way that will contact workers or other persons.</p> <p>Application Restriction - Warning of toxicity to fish. NPDES statement required.</p> <p>User safety requirements and recommendations.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non-Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Methylene bis-thiocyanate (MBT)</b> (Case 2415)</p> <p>Ron Kendall / Pat Dobak</p> <p>All uses eligible <b>except</b> paint uses and products applied with a paint brush, roller or compressed air sprayer (more data are needed).</p> <p>No food uses.</p>	<p>Microbiocide, fungicide, algicide and disinfectant used in many types of industrial water systems, industrial adhesives and coatings, sewage systems, wood protection treatments, latex paints (in-can), and others.</p> <p>Acutely toxic via inhalation, severe eye and dermal irritant, skin sensitizer (Toxicity Category I). Group D carcinogen. Metabolite cyanide extremely toxic by all routes of exposure. Formaldehyde also a potential degradate. Risk to occupational painters is of concern. Risk to handlers open-pouring liquids is reduced using PPE and engineering controls.</p>	<p>PPE - Handlers must wear long sleeved shirt &amp; long pants and shoes &amp; socks. In addition:</p> <ul style="list-style-type: none"> <li>&gt; If product is in Toxicity Category I or II for eye irritation potential, handlers must wear protective eyewear;</li> <li>&gt; If product is in Toxicity Category I or II for acute dermal toxicity or skin irritation potential, handlers must wear chemical-resistant apron and chemical-resistant gloves;</li> <li>&gt; If product is in Toxicity Category I or II for acute inhalation toxicity, handlers must wear respirator;</li> <li>&gt; If product may be applied as a hand dip, handlers must wear chemical-resistant full-front apron with attached full-sleeve gloves.</li> </ul> <p>Engineering Controls - For liquid formulations applied to cooling water systems of 4000 gallons per day, open pouring is prohibited and a metering pump delivery system is required. Application Restrictions required to protect workers and others from sprays and other incidental exposure. User safety requirements and recommendations. Directions for Use must be specified completely. Effluent Discharge Statement required.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Metribuzin</b> (Case 0181)</p> <p>Jean Holmes</p> <p>All uses eligible.</p> <p>Food uses — 60 tolerances reassessed.</p>	<p>Herbicide used on many vegetable and field crops, turf grasses (in recreational areas), and non-crop areas.</p> <p>Group D carcinogen. Evidence of systemic toxicity. Total dietary risks are minimal. Poses inhalation risks to handlers. Ground water contaminant. Poses risks to birds, mammals &amp; nontarget plants.</p>	<p>Reduce Application Rate - on sugarcane from maximum of 6 lbs ai/acre to 2 lbs ai/acre. Use of low pressure or high volume hand wand equipment prohibited. Aerial application on asparagus and tomatoes prohibited.</p> <p>For aerial application on sugarcane, apply at minimum upwind distance of 400 ft from sensitive plants.</p> <p>Spray drift labeling required.</p> <p>PPE - Required based on acute toxicity of end use product.</p> <p>Early Entry PPE - Coveralls, chemical-resistant gloves, shoes &amp; socks required.</p> <p>REI - 12 hour REI required.</p> <p>Application Restrictions required to protect workers and others from drift.</p> <p>Engineering Controls - Use of closed systems may reduce handler PPE requirements.</p> <p>User safety requirements and recommendations.</p>
<p><b>Paranitrophenol (PNP)</b> (Case 2465)</p> <p>Veronica Dutch</p> <p>Voluntary cancellation of all uses will become effective on 5/30/02.</p> <p>No food uses.</p>	<p>Fungicide used by military to treat leather shoes &amp; boots and cork insulation.</p> <p>Poses acute worker risks: Corrosive eye irritant (Toxicity Category I); data gaps for inhalation toxicity and skin irritation.</p>	<p>PPE - Basic plus protective eyewear, chemical-resistant apron with attached full sleeved chemical-resistant gloves, and a respirator.</p> <p>Restriction for Use Statement: "This product cannot be used after May 30, 2002."</p> <p>Application restrictions.</p> <p>User safety requirements and recommendations.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Pendimethalin</b> (Case 0187)</p> <p>Jane Mitchell</p> <p>All uses eligible.</p> <p>Food uses -- 27 tolerances reassessed.</p>	<p>Herbicide used on many agricultural crops and noncrop areas, residential &amp; recreational turf, and ornamentals.</p> <p>Low acute toxicity. Causes thyroid tumors in rats; Group C human carcinogen. Dietary risk is minimal. Risks to handlers are reduced with extra PPE, longer REI, and lower use rate. Turf risks reduced with lower use rate.</p>	<p>PPE - Long sleeved shirt &amp; long pants, shoes &amp; socks, chemical-resistant gloves required. REI - 24 hour REI required (increased from 12 hours).</p> <p>Engineering Controls -</p> <ul style="list-style-type: none"> <li>&gt; Water-soluble packaging required for all wettable powders;</li> <li>&gt; Use of closed systems may reduce handler PPE requirements.</li> </ul> <p>Application Restrictions to prevent contact with people or pets, directly or through drift.</p> <p>Homeowner Turf Uses -</p> <ul style="list-style-type: none"> <li>&gt; Reduce Application Rate - from 3 lbs ai/acre to maximum of 2 lbs ai/acre for residential lawns and sod farms;</li> <li>&gt; Entry Restrictions - People &amp; pets should not touch treated plants until sprays have dried or enter treated areas until dusts have settled.</li> </ul> <p>Environmental Hazards Statement required to protect water.</p> <p>Spray drift labeling advisory/best management practices required.</p> <p>User safety requirements and recommendations.</p>
<p><b>Propoxur</b> (Case 2555)</p> <p>Bonnie Adler</p> <p>All uses eligible.</p> <p>Food use (crack &amp; crevice treatments in food handling establishments); tolerance proposed.</p>	<p>Insecticide used to control ants, roaches, fleas &amp; hornets in/around residences &amp; food handling establishments.</p> <p>Moderate acute toxicity. Group B2 carcinogen. Dietary cancer risk minimal. Cancer risk to resident applicators acceptable. Combined dietary and residential risk to kids/others acceptable. PPE reduces risks to professional applicators. Toxic to wildlife &amp; aquatic invertebrates.</p>	<p>PPE - Long sleeved shirt &amp; long pants, shoes &amp; socks, and chemical-resistant gloves required for PCOs.</p> <p>Application Restriction - People and pets should not enter treated area until sprays have dried and dusts have settled.</p> <p>Application Restrictions - To prevent contact with people or pets, directly or through drift.</p> <p>User safety recommendations.</p> <p>Ecological Risk Statements - Warn users that propoxur is toxic to wildlife and aquatic invertebrates, and that birds and small mammals feeding on treated bait may be killed.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Rodenticide Cluster:</b></p> <p>Brodifacoum (2755), Bromethalin (2765), Bromadiolone (2760), Chlorophacinone (2100), Diphacinone (2205), Pival (2810).</p> <p>Bill Wooge</p> <p>All uses of all cases eligible, <b>except</b> Pival which is not eligible for reregistration (suspended and may be canceled); and field uses of high concentration Chlorophacinone and Diphacinone.</p> <p>No food uses.</p>	<p>Rodenticides used in urban, suburban and rural areas to control rats, mice &amp; other rodents. Chlorophacinone &amp; Diphacinone also used in the field to control several vertebrate pests.</p> <p>High acute toxicity (Toxicity Category I) by oral, dermal &amp; inhalation routes of exposure. Large number of human incidents reported each year indicates children under age 6 are at greatest risk from use around the home. Pet risks (dogs) and secondary nontarget poisonings also of concern.</p>	<p>2-Phase program to reduce risks of all uses (including residential uses) to children: Phase 1 short term measures for all products include:</p> <ul style="list-style-type: none"> <li>&gt; Incorporate indicator dye that stains hands &amp; mouth;</li> <li>&gt; Incorporate bittering agent;</li> <li>&gt; Restricted Use Pesticide classification for tracking powders;</li> <li>&gt; Submit annual poison control center data;</li> <li>&gt; Improve use directions on labels.</li> </ul> <p>Phase 2 longer term measure:</p> <ul style="list-style-type: none"> <li>&gt; Establish stakeholder group to discuss additional ways to reduce exposure to children and pets.</li> </ul> <p>Pival - Not eligible for reregistration (suspended and may be canceled). Chlorophacinone and Diphacinone - Field use of high concentration products are not eligible w/o further rationale, to reduce risk of secondary poisonings.</p>
<p><b>Sulprofos</b> (Case 0076)</p> <p>Voluntary Cancellation</p> <p>Food uses — 27 tolerances reassessed.</p>		<p>(None)</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non-Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Terbacil</b> (Case 0039)</p> <p>Emily Mitchell</p> <p>All uses eligible.</p> <p>Food uses — 32 tolerances reassessed.</p>	<p>Herbicide used on food &amp; feed crops, ornamentals, and in forestry.</p> <p>Group E carcinogen. Associated with developmental toxicity. Poses no dietary or aggregate exposure/risk concerns. Poses potential risks to surface &amp; ground water quality, nontarget plants.</p>	<p>Maximum application rates must be reduced to represent typical use situations. Surface Water label advisory required. Ground Water label advisory required. PPE to be determined by acute toxicity of each end use product. REI - 12 hour REI required.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Thiobencarb</b> (Case 2665)</p> <p>Dennis Deziel / Pat Dobak</p> <p>All uses eligible.</p> <p>Food uses -- 25 tolerances reassessed.</p>	<p>Pre-emergence herbicide used primarily in rice; also in lettuce, celery and endive.</p> <p>Group D carcinogen. Poses no dietary or aggregate exposure/risk concerns. Developmental toxicity risk to handlers reduced with PPE, engineering controls. Poses high risk of acute &amp; chronic effects to fish &amp; invertebrates, and potential risks to ground &amp; surface water quality.</p>	<p>Engineering Controls - For liquid formulations: Mixers &amp; loaders must use closed systems; Applicators &amp; flaggers must use enclosed cabs/cockpits.</p> <p>PPE for Liquid Formulations:</p> <ul style="list-style-type: none"> <li>&gt; Mixers &amp; loaders must wear long sleeved shirt &amp; long pants, socks &amp; shoes, chemical- resistant gloves, chemical-resistant apron;</li> <li>&gt; Applicators &amp; flaggers must wear long sleeved shirt &amp; long pants, socks &amp; shoes.</li> <li>&gt; Other handlers must wear coveralls over long sleeved shirt &amp; long pants, chemical- resistant gloves, chemical-resistant footwear, chemical-resistant apron when cleaning equipment.</li> </ul> <p>PPE for Granular Formulations: Handlers must wear long-sleeved shirt &amp; long pants, shoes &amp; socks, chemical-resistant gloves, chemical-resistant apron when loading formulation or cleaning equipment.</p> <p>REI - 24 hour REI required.</p> <p>Early Entry PPE - Coveralls, shoes &amp; socks, chemical-resistant gloves required.</p> <p>Application Restrictions - Do not apply:</p> <ul style="list-style-type: none"> <li>&gt; In a way that will contact people or pets, directly or through drift;</li> <li>&gt; In Louisiana, south of the Intercoastal Waterway;</li> <li>&gt; In Texas, w/in 2 miles of shorelines of Matagorda Bay and Galveston Bay;</li> <li>&gt; To rice fields with catfish/crayfish farming;</li> <li>&gt; On rice fields adjacent to catfish/crayfish ponds;</li> <li>&gt; Within 24 hours of rainfall;</li> <li>&gt; Do not release permanent flood water within 14 days of application to rice;</li> <li>&gt; Do not mix/load/handle within 100 feet of aquatic habitat.</li> </ul> <p>User safety requirements and recommendations.</p> <p>Spray Drift labeling language required.</p>



RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Triclopyr</b> (Case 2710)</p> <p>Includes: Triclopyr acid; Triclopyr triethylamine salt (TEA); and Triclopyr butoxyethyl ester (BEE).</p> <p>Dean Monos</p> <p>All uses eligible.</p> <p>Food uses -- 34 tolerances reassessed.</p>	<p>Herbicides used on rights-of-way, pasture, forests, rangeland, residential turf, and rice.</p> <p>TEA is corrosive to the eye; TEA and BEE cause dermal sensitization. Group D carcinogen. Reproduction effects (kidney degeneration) in rats. Poses no dietary or residential risks of concern. PPE &amp; REI will reduce any risks to handlers. Triclopyr degradate trichloropyridinol (TCP) may leach to ground water. Poses risks to nontarget organisms.</p>	<p>Reduced Application Rates - Maximum application rate for range &amp; pasture use must be reduced from 12 lbs acid equivalents (ae) per acre per year to 1 lb ae/acre/yr.</p> <p>Also for range &amp; pasture uses:</p> <ul style="list-style-type: none"> <li>&gt; Only one application may be made per growing season;</li> <li>&gt; Maintain restriction against grazing lactating dairy cattle until next growing season;</li> <li>&gt; Specify 14 day PHI for grass hay;</li> <li>&gt; Retain existing pre-slaughter interval of 3 days.</li> </ul> <p>Other Reduced Application Rates:</p> <ul style="list-style-type: none"> <li>&gt; For BEE and TEA forestry uses, specify maximum of 6 lbs ae/acre/year.</li> <li>&gt; For all other uses, BEE labels must specify maximum of 8 lbs ae/acre/year, and TEA labels must specify maximum of 9 lbs ae/acre/year.</li> </ul> <p>Statement to protect ground water required.</p> <p>PPE - to be established based on acute toxicity of each end use product.</p> <p>REI - 48 hour REI required.</p> <p>Early Entry PPE - Coveralls, chemical-resistant gloves, shoes &amp; socks, protective eyewear required.</p> <p>Non-WPS and Homeowner Uses - Do not allow people/pets to enter treated area until sprays have dried and dusts have settled.</p> <p>Application Restrictions - Avoid contact with people or pets, directly or through drift.</p> <p>Engineering Controls - Use of closed systems may reduce handler PPE requirements.</p> <p>User safety requirements and recommendations.</p> <p>Skin sensitizer statement.</p> <p>Spray Drift labeling language required.</p> <p>Ground water advisory statement required.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>1,3,5-Triethylhexahydro-s-triazine</b> (Case 3147)</p> <p>Marie Boucher / Margaret Rice</p> <p>All uses eligible.</p> <p>No food uses.</p>	<p>Antimicrobial used as industrial preservative in adhesives, fuels, oil storage tanks, metal working cutting fluids, paints, rubber products, and others.</p> <p>Extremely corrosive; assume Toxicity Category I for eye &amp; skin irritation.</p> <p>Formaldehyde is a degradate. Handler and post-application inhalation exposure is of concern, but MOEs are acceptable and PPE &amp; engineering controls will mitigate any remaining risk.</p>	<p>PPE - Minimum for handlers is long sleeved shirt &amp; long pants, shoes &amp; socks.</p> <p>&gt; If end use product is in Toxicity Category I or II for eye irritation or if these data were waived due to corrosivity, add: Protective eyewear.</p> <p>&gt; If end use product is in Toxicity Category I or II for acute dermal toxicity or skin irritation potential, or if data on these effects were waived due to corrosivity, add: Chemical-resistant apron and chemical-resistant gloves.</p> <p>&gt; If end use product is in Toxicity Category I or II for inhalation toxicity, add: Respirator.</p> <p>Engineering Controls -</p> <p>&gt; Meter pumps/other automatic dispensing equipment is required (open pouring is prohibited) for wet-end additive/industrial processing chemical uses.</p> <p>&gt; Vats must be closed and equipped with mechanical vents to the outdoors for uses in paint, rubber products, industrial adhesives, or fuel/oil storage tank bottoms.</p> <p>Application Restrictions - Prohibit use of products in a way that will contact workers or other persons, and prohibit application as a spray.</p> <p>User safety requirements and recommendations.</p> <p>Timing of Applications - Labels must specify when &amp; how often in manufacturing process product may be added or applied.</p> <p>Effluent Discharge Restriction - Is required noting that product is toxic to fish and that NPDES permit is required.</p>

RED (Case #), Author/CRM*, Eligibility, Food/Non- Food	Pesticide Type, Use Pattern, and Risks	Risk Reduction Measures
<p><b>Zinc Phosphide</b> (Case 0026)</p> <p>Susan Jennings</p> <p>All uses eligible.</p> <p>Food uses -- 6 tolerances reassessed.</p>	<p>Rodenticide used indoors &amp; outdoors to control gophers, mice, rats, lagomorphs, prairie dogs, squirrels. Food uses include grapes, rangeland grasses, sugarcane, regional artichokes &amp; sugar beets.</p> <p>Toxicity Category I for acute oral &amp; inhalation effects. Dietary exposure &amp; risk believed to be minimal. Concern re: acute risks from residential rodenticide uses, especially to children, mitigated by 2-Phase program. Handler inhalation risks reduced by PPE. Use in agricultural fields will likely kill nontarget birds &amp; mammals.</p>	<p>2-Phase Program to reduce risks of residential uses to children - Same as for Rodenticide Cluster above.</p> <p>PPE - Formulation-specific PPE required for all occupational uses.</p> <ul style="list-style-type: none"> <li>&gt; All formulation types require at a minimum: Long sleeved shirt &amp; long pants, shoes &amp; socks, chemical-resistant gloves.</li> <li>&gt; Concentrates, tracking powders, and pellets/baits being loaded into aircraft &amp; other equipment also require respirator &amp; protective eyewear.</li> <li>&gt; Persons retrieving carcasses/unused bait must wear chemical-resistant gloves.</li> </ul> <p>RUP - Restricted Use Pesticide classification must be retained for all agricultural uses.</p> <p>Use Restrictions - For crop uses.</p> <p>Application Restrictions -</p> <ul style="list-style-type: none"> <li>&gt; To prevent contact with workers or other people, directly or through drift;</li> <li>&gt; To prevent contamination of water, food, feedstuffs, food/feed handling equipment, etc..</li> <li>&gt; To prevent contamination of human or pet food, preparation items or areas.</li> </ul> <p>Directions for Use -</p> <ul style="list-style-type: none"> <li>&gt; Improve and make easy to read and understand.</li> <li>&gt; Refer consumers to NPTN for additional information.</li> </ul> <p>First Aid Statements - Identify as such on product labels, and make brief, clear, simple and straightforward.</p> <p>User safety requirements and recommendations.</p> <p>Environmental Hazard Statements -</p> <ul style="list-style-type: none"> <li>&gt; To protect water; and dogs/other predatory/scavenging mammals.</li> </ul>

## PRODUCT REREGISTRATION

### The Product Reregistration Program

Product reregistration is the concluding phase of the reregistration process, in which EPA's intentions about risk reduction and safer pesticide use, as expressed in RED documents, become reality.

In developing a RED, EPA assesses a pesticide's human health and environmental effects, as well as exposure through its current use patterns, to determine whether it poses any unacceptable risks. To reduce risk, in issuing the RED document, EPA requires changes in the pesticide's use, usually brought about by changes in product labeling. Data to evaluate the acute toxicity and chemical properties of each end use product that contains the pesticide also are required. Once these studies and amended labeling are submitted to EPA and approved, if all their active ingredients are eligible, end use pesticide products may be reregistered.

EPA has begun implementing significant process improvements to increase its output of product reregistration decisions. A Product Reregistration Branch, responsible for tracking and processing most RED responses and data submissions, has added an in-house technical review section and a label review team, plus an improved tracking system. These changes are enhancing the Branch's capability to complete product reregistration reviews more quickly and efficiently, with greater consistency. As a result, EPA expects to increase the quality, consistency, and quantity of product reregistration actions completed during FY 98 (from 387 decisions in FY 97 to 900 - 1,200 this fiscal year) and in the future.

As more pesticide products are finally reregistered, the goals of the program -- reducing pesticide risks and improving the safety of the public and the environment -- are being delivered.

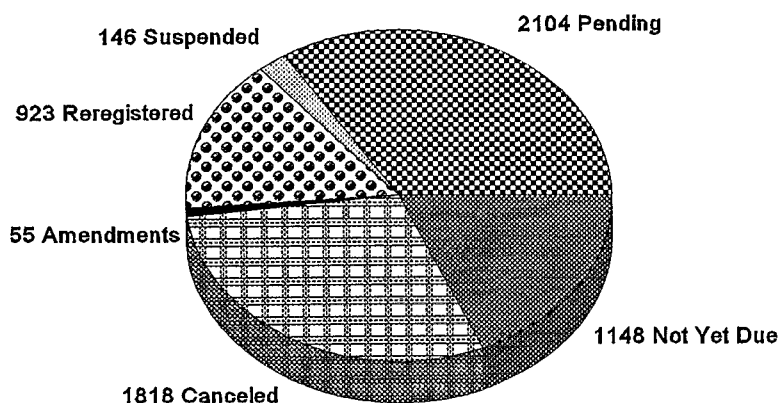
### Product Reregistration Status

At the end of FY 97, a total of about 6,194 pesticide products were associated with 171 completed REDs:

- 923 products were reregistered;
- 1818 products were canceled;
- 146 products were suspended;
- 55 product registrations were amended because some but not all of their active ingredients are eligible for reregistration;
- 2,104 products were pending EPA decisions; and
- 1,148 products were not yet due for decisions (REDs were completed but not yet mailed, or product specific data were not yet due to be submitted to EPA).

### Product Reregistration Status

for 171 Completed REDs



## TOLERANCE REASSESSMENT UNDER FQPA

### New FQPA Provisions

The Food Quality Protection Act of 1996 introduced a number of significant new regulatory provisions addressing pesticides and food safety. FQPA established a new safety standard -- reasonable certainty of no harm -- for pesticides used on food commodities. EPA must apply this more stringent, protective standard in establishing new tolerances (maximum residue limits for foods), and in reassessing all existing tolerances over a 10 year period, examining the potentially riskiest pesticides first. In reassessing tolerances under FQPA, EPA must consider, among other things, aggregate exposure to the pesticide from all non-occupational sources, cumulative effects, special sensitivities of infants and children, and endocrine effects.

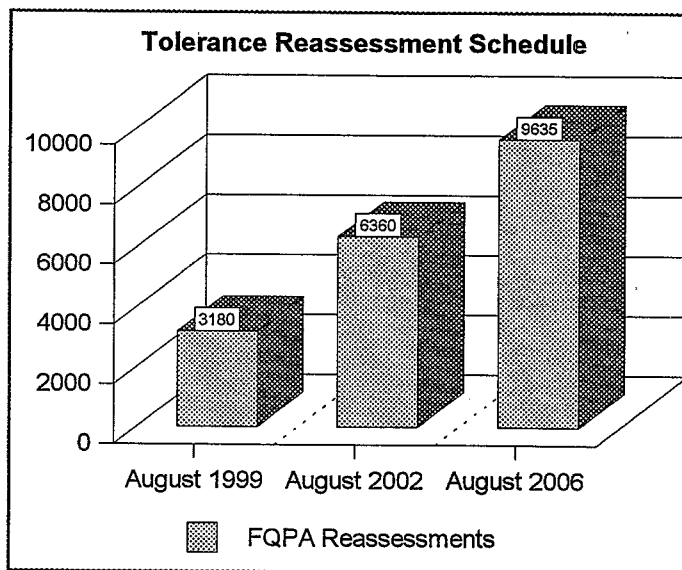
### Tolerance Reassessment Schedule

FQPA requires that within 10 years, EPA reassess all tolerances and tolerance exemptions that were in place on August 2, 1996, the day before the new law was enacted. FQPA also sets the following intermediate deadlines:

- Reassess 33 percent of all tolerances by August 2, 1999;
- Reassess 66 percent by August 2002; and
- Reassess 100 percent by August 2006.

At the time of FQPA's enactment, there were about 9,635 tolerances and exemptions for active and inert ingredients that are subject to this time table. The bar graph presents the numbers of tolerances that EPA must reassess within the time frames specified by the FQPA schedule.

For additional information, please see EPA's Schedule for Pesticide Tolerance Reassessment, published in the *Federal Register* on August 4, 1997 (62 FR 42020-42030).

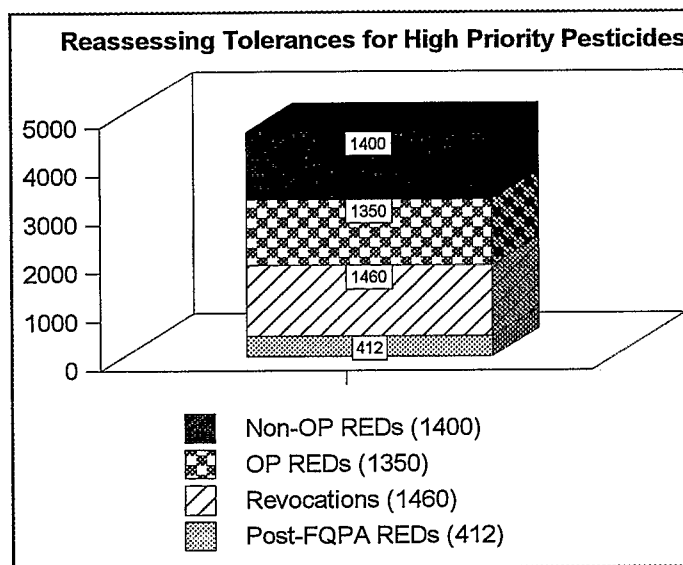


## Priorities for Reassessment

EPA will give first priority to reassessment of tolerances associated with the pesticides that the Agency believes may pose the greatest potential risk to public health. These pesticides include the organophosphates, carbamates, and probable and possible human carcinogens. Also included are the organochlorine pesticides, high-hazard inert ingredients, and other pesticide chemicals for which reregistration is substantially complete.

## Progress: Current and Continuing

Since August 3, 1996, EPA has issued 30 post-FQPA REDs, 18 of which have food uses with approximately 412 associated tolerances. In addition, the Agency is in the process of proposing or has proposed for revocation approximately 1,460 tolerances, and these revocations count as FQPA reassessments. During FY 98-99, EPA also plans to reassess about 1,350 tolerances for the organophosphate (OP) pesticides and 1,400 tolerances for non-OP REDs. In this way, EPA may meet the FQPA requirement to reassess 33 percent of all tolerances (about 3,180) for pesticides that pose the greatest risk by August 1999.



## Background

Tolerance reassessment has been part of the reregistration process since accelerated reregistration began under FIFRA '88. EPA reassessed over 1,500 tolerances and tolerance exemptions in the course of making reregistration eligibility decisions for the 171 pesticides that now have completed REDs. For pesticides registered after November 1984 (known as the post-1984 chemicals) and for newly registered pesticides, EPA used the registration process to ensure that tolerances were safe and posed no dietary risk concerns.

Now, under FQPA, tolerance reassessment will continue to be an output of pesticide reregistration. For pesticides subject to reregistration, tolerances and tolerance exemptions are being reassessed as REDs are being developed. The Agency also is reassessing tolerances and exemptions associated with the 53 food use REDs that were completed pre-FQPA, the post-'84 pesticides (which are not subject to reregistration), and food-use inert ingredients. After the reregistration program is completed in 2002, tolerance reassessment will continue in the future under the registration review program.

## THE ORGANOPHOSPHATES

The class of pesticides known as the organophosphates are EPA's highest regulatory priority for both reregistration and tolerance reassessment under FQPA. These chemicals are among both the riskiest and most widely used pesticides on the market today. The organophosphates present a unique regulatory challenge -- because they share a common mechanism of toxicity, EPA must evaluate the total exposure and risk presented by all of them at once. The organophosphates will be the first large group of pesticides to be reassessed together under the new, stricter standard of the FQPA.

### What are Organophosphate Insecticides?

The organophosphates are 40 currently registered pesticides used widely in U.S. agriculture on both major and minor crops, and for public health protection, structural pest control, and lawn care. Approximately 60 million pounds of organophosphates are applied to 60 million acres of agricultural crops each year including field corn, cotton, other field crops (e.g., canola, alfalfa), fruits and nuts, and vegetables. In addition, about 17 million pounds are applied to non-agricultural sites for termite and mosquito control, livestock and pet pest control, grain storage, residential and commercial use, and turf and ornamental uses.

#### Organophosphate Pesticides

Acephate	Isofenphos
Azinphos-methyl	Malathion
Bensulide	Methamidophos
Cadusafos	Methidathion
Chlorethoxyfos (Fortress)	Methyl parathion
Chlorpyrifos	*Mevinphos
Chlorpyrifos methyl (Reldan)	*Monocrotophos
*Chlorthiophos	Naled
Coumaphos	Oxydemeton methyl
DEF	Phorate
Diazinon	*Phosalone
Dichlorvos (DDVP)	Phosmet
Dicrotophos	*Phosphamidon
Dimethoate	Phostebupirim (Aztec)
*Dioxathion	Pirimiphos methyl
Disulfoton	Profenofos
Ethion	Propetamphos
Ethoprop	Sulfotepp
Ethyl parathion	*Sulprofos
Fenamiphos	Temephos
Fenitrothion	Terbufos
Fenthion	Tetrachlorvinphos
Fonofos	Trichlorfon
Isazophos methyl (Triumph)	
* Canceled	

## **What Risks Do the Organophosphates Pose?**

Organophosphates, used in World War II as nerve toxins, have the potential to adversely effect the nervous system. They inhibit cholinesterase, an enzyme that normally deactivates the chemical acetylcholine in neurons. Acetylcholine acts in transferring nerve impulses from a nerve cell to a muscle cell or another nerve cell. Reducing the deactivation of acetylcholine lets the cholinergic neurons remain active longer than they should, which results in overstimulation and symptoms such as weakness or paralysis of the muscles.

Organophosphates can have a range of effects on the nervous system. Depending on the amount of exposure, they can cause short-term, reversible effects such as headaches, nausea, and vomiting, or more serious effects that may require medical treatment, such as muscle weakness and breathing difficulties. Exposure to high levels may even be fatal. There also is evidence that they may cause longer lasting, harder-to-observe damage to the nervous system.

Since children eat more food, drink more water, and breathe more air for their body weight than adults do, they often are more exposed than adults and may be more sensitive to the effects of pesticides, including the organophosphates.

## **What is EPA Doing to Address the Risks Posed by the Organophosphates?**

EPA has given top priority to reassessment of the organophosphates under the new, stricter safety standard of the FQPA. The reassessment is underway now, and the Agency is giving particular attention to both the possible short- and long-term effects of these compounds on infants and children. This reassessment includes several important steps:

- For each of the 40 organophosphates, establishing a level of daily exposure (called a reference dose) that is safe not only for adults but also for infants, children, and any other sensitive subpopulations;
- Determining total exposure to each of these compounds from use in food production, around homes, and through drinking water;
- Evaluating the total exposure and risk for all 40 organophosphates as a group, since they share a common mechanism of action on the nervous system; and
- Taking action to reduce all exposures that exceed the safety standard of the new law.

EPA will be releasing its regulatory strategy for the organophosphates in the next several months.



## SCHEDULE FOR FUTURE REDS

### Integrated Schedule for Reregistration and Tolerance Reassessment

EPA's schedule for completing future pesticide Reregistration Eligibility Decisions has been constructed to reflect the FQPA requirement that the Agency reassess all existing tolerances over a ten year period, considering pesticides that pose the greatest potential risks first. EPA's current schedule also reflects the Agency's goal to complete the reregistration program by 2002, and complete tolerance reassessment by August 2006.

A list of the fiscal year 1998 RED candidate pesticides appears below, followed by a list of groups or waves of pesticides that are the Agency's highest priority for reregistration and tolerance reassessment during the next several years.

### FY 98 RED Candidates

EPA's goal is to complete 40 REDs during FY 98, from among the following candidate pesticides.

#### Organophosphates: \*

Acephate  
Azinphos-methyl  
Bensulide  
Chlorpyrifos  
DEF  
DDVP  
Diazinon  
Dicrotophos  
Dimethoate  
Disulfoton  
Ethion  
Ethoprop  
Ethyl Parathion  
Fenamiphos  
Fenthion  
Fonofos  
Isofenphos  
Malathion  
Methamidophos  
Methidathion

Methyl Parathion  
Naled  
Oxydemeton-methyl  
Phorate  
Phosmet  
Pirimiphos methyl  
Profenophos  
Propetamphos  
Sulfotepp  
Temephos  
Terbufos

#### Non-Organophosphates:

Alachlor  
Aluminum &  
Mg Phosphide  
Amdro  
Bendiocarb  
Benomyl  
Bromoxynil  
Captan  
Carbofuran  
Chlorothalonil  
DEET  
Dicofol  
Folpet  
Formetanate HCl  
Iprodione  
Methomyl  
Propachlor  
Telone  
Thiodicarb  
Vinclozolin

\* Includes only OP's currently in the reregistration process, not completed REDs or post-'84 pesticides.

## Waves

EPA's tentative schedule for reviewing clusters or waves of pesticides for purposes of both reregistration and tolerance reassessment during the next several years follows.

### Priority Group 1 Pesticides Subject to Reregistration Review and/or Tolerance Reassessment under FQPA, Waves 1-11

Chemical	Chemical Class or Toxicology Concern
<b>Wave 1</b>	
Ethion	organophosphate
Fenamiphos	organophosphate
Fenthion	organophosphate
Naled	organophosphate
Phorate	organophosphate
Profenophos	organophosphate
Terbufos	organophosphate
Formetanate HCl	carbamate
Chlorothalonil	B2 carcinogen
Captan	B2 carcinogen
Folpet	B2 carcinogen
Telone	B2 carcinogen
Vinclozolin	B2 carcinogen
Dicofol	organochlorine

Chemical	Chemical Class or Toxicology Concern
<b>Wave 2</b>	
Azinphos-methyl	organophosphate
Chlorpyrifos	organophosphate
DEF	organophosphate
Dimethoate	organophosphate
Isofenphos	organophosphate
ODM	organophosphate
Propetamphos	organophosphate
Iprodione	B2 carcinogen
Bendiocarb	carbamate
Carbofuran	carbamate
Methomyl	carbamate
Thiodicarb	carbamate
<b>Wave 3</b>	
Bensulide	organophosphate
DDVP	organophosphate
Disulfoton	organophosphate
Malathion	organophosphate
Phosmet	organophosphate
Benomyl	carbamate
Alachlor	B2 carcinogen
Propachlor	chloroacetanilide

Chemical	Chemical Class or Toxicology Concern
<b>Wave 4</b>	
Diazinon	organophosphate
Ethyl Parathion	organophosphate
Methyl Parathion	organophosphate
Pirimiphos-methyl	organophosphate
Sulfotepp	organophosphate
Temephos	organophosphate
Al and Mg Phosphide	phosphide fumigants (inhalation hazard)
<b>Wave 5</b>	
Acephate	organophosphate
Diclotophos	organophosphate
Ethoprop	organophosphate
Methamidophos	organophosphate
Methidathion	organophosphate
Fonofos	organophosphate

#### Non-RED Organophosphates<sup>1</sup>

<b>Food-Use Organophosphates:</b>
Cadusafos (post-84)
Coumaphos (pre-FQPA RED)
Chlorpyrifos-methyl (post-84)
Fenitrothion (pre-FQPA RED)
Mevinphos (pre-FQPA RED)
Monocrotophos
Phostebupirim (post-84)
Chlorethoxyfos (post-84)
Tetrachlorvinphos (pre-FQPA RED)
Trichlorfon (pre-FQPA RED)
<b>Non-Food Use Organophosphates:</b>
Isazophos-methyl (post-84)

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<sup>1</sup>These OPs are not in the reregistration queue -- REDs were completed for them prior to FQPA, or they are not subject to reregistration. However, for most, tolerances still must be reassessed under FQPA. The other OPs are scheduled as REDs in Waves 1 through 5.

Pesticide	Chemical Class
<b>Wave 6</b>	
Phenmedipham	carbamate
Thiophanate methyl	carbamate
Asulam	carbamate
CIPC	carbamate
Desmedipham	carbamate
Propamocarb hydrochloride (pre-FQPA RED)	carbamate
Aldicarb	oxime carbamate
Oxamyl	oxime carbamate
Aldoxycarb (post-84)	oxime carbamate
Molinate	thiocarbamate C carcinogen
Tri-allate	thiocarbamate C carcinogen
EPTC	thiocarbamate
Pebulate	thiocarbamate
Vernolate	thiocarbamate
Butylate	thiocarbamate
Thiobencarb	thiocarbamate
<b>Wave 7</b>	
Lindane	organochlorine B2
Endosulfan	organochlorine
Methoxychlor	organochlorine
<b>Wave 8</b>	
2-Phenylphenol	
Ethylene oxide	
Propylene oxide	
Mancozeb	alkylenebis(dithiocarbamate) B2
Maneb	alkylenebis(dithiocarbamate) B2
Metiram	alkylenebis(dithiocarbamate) B2
Sodium salt of acifluorfen	dimethyldithiocarbamate
Cacodylic Acid	organo arsenical
Propargite	organosulfur
TPTH	organotin
Oxythioquinox	quinoxaline
Terrazole	Thiazole
PCNB	aromatic hydrocarbon derivative
Formaldehyde	
Paraformaldehyde	

Pesticide	Chemical Class
<b>Wave 9</b>	
Carbaryl	carbamate
Atrazine	1,3,5-triazine
Simazine	1,3,5-triazine
Propazine (section 18 use only)	1,3,5-triazine
Cyanazine (to be canceled in 1999 & phased out by 2002)	1,3,5-triazine
Oxadiazon	
Imazalil	benzimidazole
Oxyfluorfen	diphenyl ether
Permethrin	pyrethroid
Thiabendazole	benzimidazole
Thiophanate methyl	benzimidazole
Lactofen	diphenyl ether
Sodium salt of fomesafen	diphenyl ether
Sodium dimethyldithiocarbamate	diphenyl ether
Diclofop-methyl	2-(4-aryloxyphenoxy) propionic acid
Fenoxaprop-ethyl	2-(4-aryloxyphenoxy) propionic acid
Quizalofop-ethyl	2-(4-aryloxyphenoxy) propionic acid
<b>Wave 10</b>	
Cypermethrin	pyrethroid
Propiconazole	azole
Triadimefon	azole
Fenbuconazole	azole
Myclobutanil	azole
Tebuconazole	azole
Triflumazole	azole
Triadimenol	azole
Difenoconazole	azole

Pesticide	Chemical Class
<b>Wave 11</b>	
Diphenamid	
Dipropyl isocinchomeronate	
DNOC	
TCMB	
Tetradifon	
Thiram	
2,4-D	aryloxyalkanoic acid
Cycloate	
Chloramben	
Chloroxuron	
Diethatyl ethyl	
Hexythiazox	
Benfluralin	2,6-dinitroaniline
Ethalfuralin	2,6-dinitroaniline
Oryzalin	2,6-dinitroaniline
Pendimethalin	2,6-dinitroaniline
Trifluralin	2,6-dinitroaniline
Butralin	2,6-dinitroaniline
Dinocap	dinitrophenol derivative

## **SPECIAL REVIEW**

### **The Special Review Process**

Special Review is EPA's formal procedure for determining whether the use of a pesticide poses unreasonable risks to people or the environment. In making this determination, the Agency must consider both the pesticide's risks and benefits. A Special Review can result in a decision to cancel, restrict, modify, or continue the pesticide uses in question.

#### ***Criteria***

The criteria for initiating a Special Review, set forth in 40 CFR Part 154, include:

- Acute toxicity to humans or domestic animals;
- Potential chronic or delayed toxic effects in humans;
- Potential hazards to non-target organisms;
- Risk to the continued existence of any threatened or endangered species;
- Risk of destruction or other adverse modification of a critical habitat of any threatened or endangered species; or
- Any other adverse effect to humans or the environment which may outweigh the benefits that justify initial or continued registration.

#### ***Current Approach***

Until the early 1990's, EPA took a traditional regulatory approach in conducting Special Reviews, issuing Position Documents at several stages in the formal review process, supplemented by Notices of Intent to Cancel or Suspend as needed. In recent years, however, the Agency has pursued and achieved the same regulatory objectives through negotiated settlements to Special Reviews. Through negotiations, registrants may reach agreements with EPA to modify the terms and conditions of their pesticide registrations to reduce risks. The range of such modifications includes canceling uses; changing use patterns, application methods or rates; or adopting other measures to better protect people or the environment.

Negotiated settlements are advantageous in that they can bring about needed, targeted risk reduction more quickly using significantly fewer resources than the traditional Special Review process. In recent years, EPA and registrants have successfully negotiated settlements for several major pesticides including mevinphos, ethyl parathion, methyl parathion, and others.

In addition to negotiating agreements, EPA also is resolving more Special Reviews through the process of developing Reregistration Eligibility Decisions. For example, Special Review issues currently are being resolved through RED negotiations for Telone. By combining Special Review with the reregistration process, efficiencies are gained that may result in obtaining needed pesticide risk reduction more quickly and cost effectively.



## Pesticides in Special Review

The risks of over 100 pesticides have been managed through the Special Review process during the past 20 years, as summarized in the EPA document, "Status of Chemicals in Special Review" (February 1998). The following 11 pesticides are in Special Review at present.

- Aldicarb
- Atrazine (part of Triazines review)
- 2,4-D (including 2,4-DB and 2,4-DP)
- 1,3-Dichloropropene or Telone
- Dichlorvos or DDVP
- Ethylene Oxide
- Oxydemeton-methyl or ODM
- Propazine (part of Triazines review)
- Simazine (part of Triazines review)
- Tributyltins (antifouling use)
- Triphenyltin hydroxide or TPTH

## Special Review Decisions in FY 97

OPP negotiated with pesticide registrants during fiscal year 1997 to expedite the reduction of risks associated with several pesticides in Special Review. The following agreements and decisions will bring about significant reduction in pesticide risk.

**Flowable Carbofuran** - EPA and FMC Corporation reached an agreement on interim risk mitigation measures for flowable carbofuran to protect agricultural workers and wildlife. EPA's concerns were with reports of bird and wildlife kills and incidents of human exposure received from the company, State agencies, Poison Control Centers, and other sources. In an effort to reduce the occurrence of such incidents, FMC has agreed to: adopt closed mixing and loading systems for all flowable carbofuran products within the next three years, with 85% of their production in closed compatible containers by 1997; reduce the amount of chemical that can be applied and the number of applications allowed on numerous crops; implement spray drift management practices; eliminate 48 special local needs registrations; voluntarily cancel the use of flowable carbofuran on strawberries and grapes; and other measures.

**Methyl Parathion** - Methyl parathion is an organophosphate insecticide registered on a variety of agricultural crops for outdoor use only. However, because it is relatively inexpensive, highly toxic, and persistent indoors, methyl parathion has been applied illegally indoors to control roaches and other insects. Persons exposed to methyl parathion after such unlawful indoor applications are at risk of acute poisoning. Discussions with Cheminova Agro A/S, the manufacturer of methyl parathion, to address the problem began after EPA's Region 5 office documented numerous examples of indoor misuse in Ohio, Michigan, and Illinois. More recently, in mid-1996, incidents of widespread indoor misuse were reported in Mississippi, Louisiana, and Alabama. In response, EPA, in conjunction with the Agency for Toxic Substances and Disease

Registry, issued a nationwide alert to consumers, and worked with Cheminova to achieve a comprehensive agreement to deter further misuse, which was signed on December 30, 1996. Provisions of the agreement include a recall of all methyl parathion down to the user level, the addition of a stenching agent to give the products an offensive odor, packaging of all products in returnable/refillable containers which each have a unique barcode to be tracked by retailers, and an education program to inform the public about the dangers of indoor pesticide misuse.

**Copper and Zinc Naphthenate** - On March 12, 1997, the technical registrants of copper and zinc naphthenate products submitted amended product labels which reflected several risk mitigation measures. OPP worked with the California Department of Pesticide Regulation (CDPR) to develop and negotiate these measures, aimed at reducing end-user exposure to these products. Copper and zinc naphthenate products are topically applied wood preservatives and present a hazard to end-users through the malodorous off gassing of their naphthenic base. Through negotiations, these products will now be labeled for exterior use only, will have a strengthened precautionary statement against inhalation and dermal exposure, and will bear a 1-800 number for medical questions and emergencies.

**Vinclozolin** - On April 29, 1997, the registrant of vinclozolin, BASF, submitted a request to amend its registrations to delete use on tomatoes, table grapes, plums (including prunes), and residential turf, as well as turf in schoolyards, parks, and recreational areas. The registrant also temporarily removed residential garden uses from its labels until the Agency has completed its RED for vinclozolin. If the uses are eligible for reregistration, they will be reinstated on the label. If not, they will be voluntarily canceled. These use deletions allowed the registrant to obtain a new use, succulent beans, while reducing dietary and residential risk. EPA is in the process of revoking tolerances associated with the deleted food uses.

**Methamidophos** - On July 7, 1997, EPA published a Federal Register notice announcing receipt of a request from Bayer Corporation and Valent USA, the methamidophos registrants, to delete all uses except cotton, potatoes, and tomatoes from all methamidophos labels. The registrants also agreed to implement closed mixing and loading systems for all methamidophos products registered in the United States. Bayer and Valent took these voluntary actions in response to EPA's concerns about methamidophos exposure to agricultural workers. EPA accepted these measures as interim risk mitigation; the remaining methamidophos uses will be evaluated at the time of the RED.

**Iprodione** - In March 1997, EPA negotiated with Rhone Poulenc to reduce dietary risk from peaches. As a result, the company agreed to reduce the number of applications per use season from four to three, and to restrict application timing to the stage prior to petal fall, thereby increasing the pre-harvest interval (PHI) from 7 to 90 days. Although the reduction of risk resulting from these changes is not precisely quantifiable at this time, field data indicate that 99% of the residue is the result of the last (7 day PHI) application, and the company is currently doing new field trials to reflect the new use rates. These label changes, as negotiated, were approved in April 1997, with relabeling of existing stocks to be completed by December 1997.

**RfD Exceeders** - OPP completed the RfD exceeders project, an effort that had been in progress since 1989, which involved screening over 400 chemicals to determine which actually pose unacceptable dietary risks. Results of refined assessments indicate that out of the original 110 pesticides that appeared to exceed the health standard, only four (formetanate HCL, oxamyl, fenthion, and methyl parathion) still exceed the RfD. The dietary risks for these four will be addressed through the RED process. OPP also is in the process of revoking tolerances for RfD exceeders where some or all food uses have been canceled.

**Tolerance Reassessment Schedule** - On August 4, 1997, EPA published its schedule for reassessing tolerances under FQPA. Publication of this schedule met the requirements of section 408(q)(3) of the Federal Food, Drug, and Cosmetic Act.

## Risk Reduction through Special Reviews

The following FY 97 Special Review actions, decisions, and agreements will result in risk reduction through label amendments and other measures.

### Risk Reduction through Special Review Activities, FY 97

	Carbofuran	Copper and Zinc Naphthenate	Iprodione	Metamidophos	Methyl Parathion	Vinclozolin
<b>Risks</b>	Worker and wildlife risks	Malodorous off-gassing	Dietary risk from peaches	Worker risks	OP; Acute human poisonings	Dietary, residential risks
<b>Use Reduction</b>	✓		✓			
<b>Voluntary Cancellation/ Uses Deleted</b>	✓			✓		✓
<b>PPE Added; REIs &amp; PHIs Adjusted</b>			✓			
<b>Special Packaging/ Engineering Controls</b>	✓			✓	✓	
<b>Use Restrictions/ Stronger Use Directions</b>		✓				✓
<b>Spray Drift Labeling</b>	✓					
<b>Environmental Safeguards</b>	✓					
<b>Risks to Kids Reduced</b>		✓			✓	✓
<b>Other Special Measures</b>		✓			✓	

Other FY97 Special Review decisions/accomplishments include:  
Tolerance Reassessment Schedule published 8/4/97; RfD Exceeders project completed.

## APPENDIX

### Cumulative Summary of Reregistration Eligibility Decisions

This Appendix contains a cumulative list of the 171 Reregistration Eligibility Decisions (REDs) completed to date, by fiscal year. The information provided for each completed RED includes its reregistration list, the date signed, number of chemicals/active ingredients included, number of products included, and number of tolerances covered/reassessed.

### RED and Tolerance Totals at a Glance

Total REDs = 171  
Total Chemicals/AI's Covered = 265  
Total Products Covered = 6,194  
Total REDs with Food Uses = 70  
Total Tolerances Reassessed = 1,569

REDs Completed Post- FQPA = 30  
Post-FQPA REDs with Food Uses = 18  
Tolerances Reassessed Post-FQPA = 412

### FY 91 REDs Summary

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
1. Carbon and Carbon Dioxide	D	9/91	2	9	0
2. Dried Blood	D	9/91	1	3	0
3. Fosetyl-Al (Aliette)	A	12/90	1	2	24
4. Heliothis zea NPV	A	12/90	1	1	0
5. Methoprene	A	3/91	1	63	23
6. Potassium Bromide	A	6/91	1	2	0
7. Propionic Acid	D	9/91	1	14	0
8. Silicon Dioxide/Silica Gel	D	9/91	2	75	0
9. Sodium and Calcium Hypochlorites	A	9/91	2	770	0
10. Sodium and Potassium Nitrates	D	9/91	2	6	0
11. Sodium Diacetate (Acetic Acid, Sodium Salt)	D	9/91	1	2	0
12. Sulfur	A	3/91	1	332	0
13. Warfarin	A	6/91	2	76	0
Totals			18	1,355	47

### FY 92 REDs Summary

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
14. Alkyl Amine Hydrochloride	C	8/92	1	3	0
15. Allium Sativum (Garlic)	D	6/92	1	4	0
16. Bone Oil **	C	6/92	1	2	N/A
17. Capsaicin	D	6/92	1	8	0
18. Chlorinated Isocyanurates	A	9/92	5	741	0
19. Citric Acid	D	6/92	1	3	0
20. Ethylene	C	9/92	1	8	0
21. Heptachlor	A	3/92	1	2	0
22. Indole-3-Butyric Acid (IBA)	B	8/92	1	31	0
23. Nosema Locustae	D	9/92	1	6	0
24. Putrescent Whole Egg Solids	D	6/92	1	6	1
25. Soap Salts	D	9/92	2	25	0
26. Sodium Hydroxide	D	9/92	1	9	0
27. Streptomycin	A	9/92	2	26	5
28. Zinc Salts	D	8/92	2	7	0
Totals			22	881	6

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\* Voluntary cancellation.

# **FY 93 REDs Summary**

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
29. Biobor	C	6/93	2	12	0
30. Boric Acid	A	9/93	7	189	1
31. Butylate	A	9/93	1	14	4
32. Cedarwood Oil	C	9/93	1	5	0
33. Daminozide	A	9/93	1	4	0
34. Eugenol ***	D	9/93	1	5	1
35. Glyphosate	A	9/93	2	56	126
36. Inorganic Halides	D	9/93	2	35	0
37. Iron Salts	D	3/93	3	5	0
38. Menthol ***	D	9/93	1	1	1
39. OBPA	A	6/93	1	15	0
40. Oxalic Acid	D	12/92	1	4	0
41. Oxytetracycline	A	3/93	3	7	2
42. PEP (phenylethyl propionate) ***	C	9/93	1	5	0
43. Silver	D	7/93	1	65	0
44. Sodium Lauryl Sulfate	D	9/93	1	2	1
45. Sulfuryl Fluoride	A	9/93	1	1	0
46. Thymol	C	9/93	1	5	0
47. Tris(hydroxymethyl)nitromethane	C	9/93	1	9	0
Totals			32	439	136

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\*\* Exempted from regulation as a pesticide active ingredient under Section 25(b) of FIFRA.

# FY 94 REDs Summary

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
48. Barium Metaborate	A	12/93	1	3	0
49. Bromine	D	12/93	1	4	1
50. Lithium Hypochlorite	C	12/93	1	40	0
51. Mineral Acids	D	12/93	4	212	0
52. Peroxy Compounds	D	12/93	3	23	0
53. Vegetable and Flower Oils	D	12/93	6****	32	0
54. 2-1(Hydroxymethyl)Amino] Ethanol or Ethanolamine	C	3/94	2	3	0
55. Hexadecadienol Acetates	D	3/94	2	18	1
56. Methiocarb	A	3/94	1	22	9
57. Periplanone B	B	3/94	1	1	0
58. Pronamide	A	3/94	1	18	55
59. Tebuthiuron	A	3/94	1	12	15
60. Maleic Hydrazide	A	6/94	2	26	4
61. N6-Benzyladenine	B	6/94	1	2	1
62. Bentazon	A	9/94	1	14	45
63. Chlorine	D	9/94	1	72	1
64. p-Chloro-m-xlenol	C	9/94	1	7	0
65. Cosan 145 or Nuosept 145	C	9/94	1	2	0
66. Cresol	D	9/94	1	1	0
67. DBNPA	C	9/94	1	46	1
68. DCDIC	C	9/94	1	80	1
69. Difenzoquat	A	9/94	1	2	22
70. Fenbutatin-Oxide or Vendex	A	9/94	1	10	44
71. Hexazinone	A	9/94	1	20	11
72. Limonene	C	9/94	1	15	1
73. Mercaptobenzothiazole	B	9/94	2	5	0
74. Metalaxyl	A	9/94	1	81	95
75. Mevinphos **	A	9/94	1	0	0
76. Muscalure or (z)-9-Tricosene	D	9/94	1	11	0
77. Oil of Citronella ***	C	9/94	1	17	0
78. Oryzalin	A	9/94	1	38	20
79. Piperalin	C	9/94	1	1	0
80. Sodium Cyanide	C	9/94	1	7	0
81. Xylenol	D	9/94	1	1	0
Totals			48	846	327

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\* Voluntary cancellation.

\*\*\* Exempted from regulation as a pesticide active ingredient under Section 25(b) of FIFRA.

\*\*\*\* One A.I., "essential oils" will become 24 A.I.s after the RED is issued; many of these will eventually be declared inert ingredients.



# **FY 95 REDs Summary**

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
82. Benzocaine ***	D	12/94	1	1	0
83. Bromohydroxyacetophenone (BHAP) C	C	12/94	1	3	0
84. Ethalfluralin	B	12/94	1	6	26
85. Ethephon	A	12/94	1	20	30
86. Fosamine Ammonium	B	12/94	1	1	0
87. Linuron	A	12/94	1	27	45
88. Metolachlor	A	12/94	1	47	71
89. Polybutene	D	12/94	1	6	0
90. Terbutylazine	B	12/94	1	4	0
91. Aliphatic Alcohols	D	3/95	2	140	0
92. Amitraz	A	3/95	1	8	28
93. 4 CPA & Salts	B	3/95	1	2	2
94. Diquat Dibromide	A	3/95	1	77	45
95. Dowicil 100	C	3/95	1	2	0
96. Fenitrothion	A	3/95	1	8	1
97. Picloram	A	3/95	7	1	48
98. Agrobacterium Radiobacter	D	6/95	1	2	0
99. Alkyl Imidazolines	C	6/95	10	2	0
100. Ancymidol	C	6/95	1	2	0
101. Asulam	A	6/95	2	4	1
102. Bis(trichloromethyl) sulfone	B	9/95	1	14	0
103. Bronopol	B	9/95	1	22	0
104. Chlorhexidine Diacetate	C	6/95	3	2	0
105. Chlopropham	A	9/95	1	27	27
106. Cyanazine **	A	9/95	1	19	11
107. Cytokinin	D	9/95	1	18	1
108. DCPA	A	9/95	1	80	27
109. Dimethoxane	C	6/95	1	1	0
110. Methyl Nonyl Ketone	C	6/95	1	47	0
111. Nabam	A	9/95	1	11	0
112. Nurarone	D	9/95	1	5	0
113. O-Benzyl-Chlorophenol	B	9/95	3	132	0
114. Prometryn	A	9/95	1	15	13
115. Propamocarb Hydrochloride	C	9/95	2	1	0
116. Sodium Fluoroacetate	C	6/95	2	7	0
117. Sodium Omadine	A	6/95	1	5	0
118. Starlicide	B	6/95	1	15	0
119. Tetrachlorvinphos	A	6/95	1	129	17
120. Trichlorfon	A	9/95	1	27	67
121. Trifluralin	A	9/95	1	181	41
Totals			63	1,121	501

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\* Voluntary cancellation.

\*\*\* Exempted from regulation as a pesticide active ingredient under Section 25(b) of FIFRA.

# FY 96 REDs Summary

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
122. Gibberellic Acid	D	12/95	2	42	0
123. Hydroxyethyl Octyl Sulfide	C	12/95	1	26	0
124. Hydroxypropyl methanethiosulfonate (HPMTS)	C	12/95	1	9	0
125. Desmedipham	B	3/96	1	10	0
126. 4,4 Dimethyloxazolidine	C	3/96	1	6	0
127. Methylisothiazolinone	C	3/96	2	54	0
128. Tanol Derivatives (Furanone)	C	3/96	2	9	1
129. p-Chloro-m-cresol	C	3/96	1	3	0
130. Mitin FF	C	6/96	1	3	0
131. Dibromodicyanobutane	B	6/96	1	12	0
132. Cryolite	A	6/96	1	17	50
133. Norflurazon	A	8/96	1	8	51
134. Coumaphos	A	8/96	1	26	20
135. Amitrole	A	8/96	1	3	0
136. Strychnine	C	8/96	1	45	0
137. B. Popilliae ***	D	8/96	1	1	1
138. Tridecenyl Acetates	D	8/96	2	20	1
139. Cloprop **	B	8/96	3	0	0
140. Oil of Pennyroyal **	C	8/96	2	1	0
141. Phosphamidon **	A	8/96	1	0	16
~~~~~FQPA~~~~~FQPA~~~~~FQPA~~~~~FQPA~~~~~FQPA~~~~~					
142. Bromacil	A	9/96	4	111	2
143. Colletotrichum gloeosporioides	D	9/96	1	1	2
144. Mepiquat Chloride	B	9/96	1	9	23
145. Paraquat Dichloride	A	9/96	2	103	118
146. Polyhedral Inclusion Bodies (NPV)	D	9/96	3	4	1
147. S-Kinoprene	D	9/96	3	6	0
148. Virelure	D	9/96	2	1	1
Totals			43	530	287

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\* Voluntary cancellation.

\*\*\* Suspension.

# **FY 97 REDs Summary**

RED Case Name	List	Date Signed	#Chemicals/ Als Covered	#Products Covered*	Total Tolerances
149. 3-Iodo-2-propynyl butylcarbamate (IPBC)	B	3/97	1	59	0
150. 1,3,5-Triethylhexahydro-s-triazine (Vancide TH)	C	3/97	1	2	0
151. Methylene bis(thiocyanate) (MBT)	B	4/97	1	59	0
152. Metribuzin	A	4/97	1	71	60
153. Sulprofos **	A	4/97	1	0	27
154. Pendimethalin	A	4/97	1	58	27
155. Diflubenzuron	A	5/97	1	32	32
156. Propoxur	B	9/97	1	147	0
157. Paranitrophenol (PNP) **	B	9/97	1	1	0
158. Butralin	B	9/97	1	2	0
159. Terbacil	A	9/97	1	12	32
160. Bacillus thuringiensis (Bt)	A	9/97	13	179	5
161. Dichlobenil	A	9/97	1	32	14
162. Diphenylamine	B	9/97	1	3	3
163. Thiobencarb	B	9/97	1	23	25
164. Triclopyr	B	9/97	3	37	34
165. Zinc Phosphide	A	9/97	1	59	6
166. Brodifacoum	B	9/97	1	38	0
167. Bromethalin	B	9/97	1	18	0
168. Bromadiolone	B	9/97	1	27	0
169. Chlorophacinone	B	9/97	1	57	0
170. Diphacinone	B	9/97	2	104	0
171. Pival ***	B	9/97	2	2	0
Totals			39	1,022	265

\* The number of products listed reflects the number registered at the time the RED was completed. This number is constantly changing.

\*\* Voluntary cancellation. (Effective 5/30/02 for PNP.)

\*\*\* Not eligible for reregistration.

