Poster Presentation

Vertebrate Pest Control Research Advisory Committee (VPCRAC): California's Approach to Supporting Vertebrate Pest Control

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ABSTRACT: As a result of increasing concern over rodenticide registration, in 1990, the California Legislature passed a law to collect $0.50 per pound surcharge on all vertebrate pest control materials sold by county agricultural commissioners in the state of California. Monies collected are used to fund research required to maintain the state's current vertebrate pesticide registrations, to improve existing rodenticides, and to find new materials and methods to solve California's vertebrate pest problems. A Vertebrate Pest Control Research Advisory Committee was established to administer this fund and set research priorities. To date, the program has raised more than $9 million to meet its objectives. The history, operation, and accomplishments of the surcharge fund are discussed in this report. A summary of projects funded is presented.

KEY WORDS: California, pesticide registration, research, rodenticide, surcharge fund, website

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INTRODUCTION

California's agricultural production, valued at over $36 billion in 2007, leads the nation (CDFA 2010). The state produces over 400 different commodities, which account for 50% of fruits, nuts, and vegetables in the United States (CDFA 2010).

California's diverse agriculture, range of habitats, and high diversity of vertebrate species result in the widest array of vertebrate pest problems within the United States. These conflicts, typically caused by rodents, birds, and various large mammals including predators, can cause significant economic loss to some agricultural commodities, even when corrective actions are taken.

The California Department of Food and Agriculture (CDFA) has been active, since the passing of the Federal Insecticide, Fungicide, and Rodenticide Act in 1972, in developing and registering pesticides for use against vertebrate pests. Agricultural commissioners in most California counties manufactured vertebrate control materials under a state special local need registration. Primarily, these were rodenticides using active ingredients such as Compound 1080, strychnine, zinc phosphide, and various anticoagulants. Strychnine was also used for bird control. In addition, many offices sold burrow fumigants for the control rodents and other burrowing mammals. The registrations for the burrow fumigants were held by commercial manufacturers and the U.S. Department of Agriculture.

HISTORY

In the 1980s, changes in Federal law regarding registration of pesticides had begun to affect the availability of vertebrate control materials to agricultural producers and others in California and the rest of the United States. The Environmental Protection Agency (EPA) completed cancellation of the registration of Compound 1080 (sodium fluoroacetate) for use against field rodents on August 9, 1990, although the U.S. Department of the Interior had withdrawn their 1080 rodenticides in 1972, and other registrants' 1080 products had become Restricted Use materials in 1978 (EPA 1995). Compound 1080 was banned completely in California by Proposition 4, a November 1998 ballot initiative. Aboveground uses of strychnine were prohibited and temporarily cancelled as a result of Federal court action in 1988. The strychnine Reregistration Eligibility Decision issued in 1996 did not allow for the reregistration of any aboveground uses (EPA 1996). Unfortunately, at the time of these actions, neither the manufacturers nor CDFA had the financial resources to obtain research data in order to meet EPA's registration requirements for continued use of existing products. Without effective control measures, CDFA estimated that growers would suffer additional damage losses, exceeding $1 billion annually (CDFA 2010).

THE RODENTICIDE SURCHARGE PROGRAM

In 1990, in response to growing concerns about continued availability of rodenticides, the California legislature, following CDFA recommendations (see Vertebrate Pest Control Task Force 1989), created the Rodenticide Surcharge Program (Cal. Code Regs., Food and Agricultural Code 6025-6029), which:

- Created a research fund by means of a $0.50-per-pound assessment on vertebrate pest control materials sold or distributed by California counties,

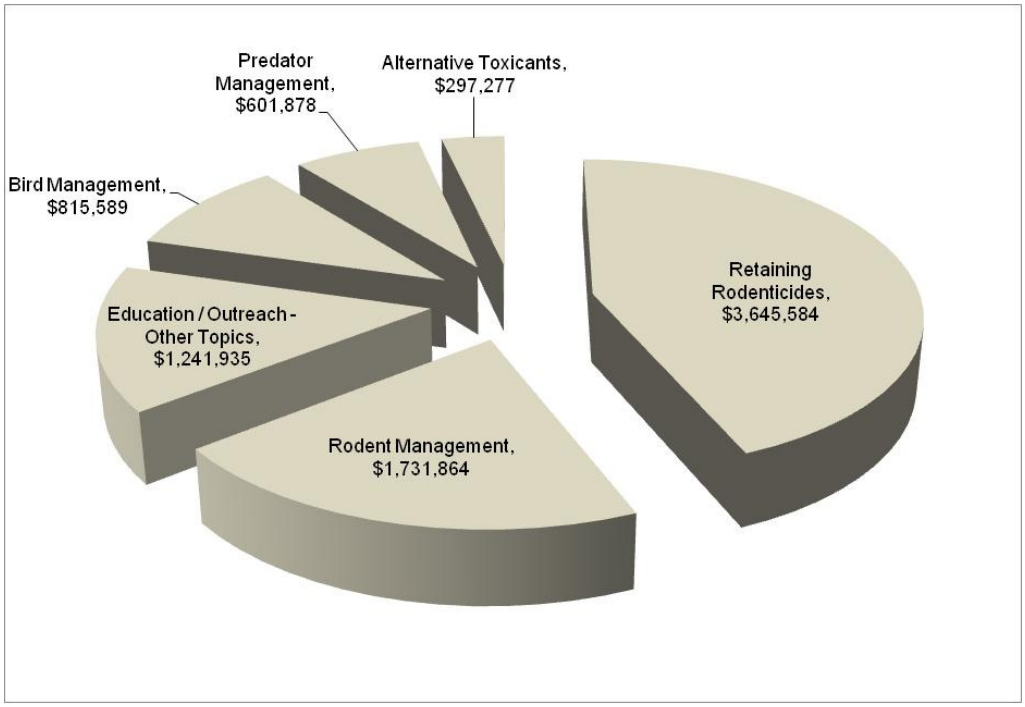

Figure 3. VPCRAC research funding expended by project category, 1991 - 2008.

- Formed a "Vertebrate Pest Control Research Advisory Committee" (VPCRAC) to oversee this fund, and
- Initiated a research program, based on grants to be awarded from this fund, focused on improving methods to reduce damage caused by vertebrate pests.

The legislation contains a sunset provision whereby the act is periodically reviewed. The program is currently renewed through 2016.

VERTEBRATE PEST CONTROL RESEARCH ADVISORY COMMITTEE

The 11-member advisory committee (VPCRAC) is comprised of individuals, appointed by the Secretary of the California Department of Food and Agriculture, who represent industry, academia, state and local government, and the general public. The committee consists of 1 member from each of the following agencies; CDFA, DPH, CAC, UC and CSU, 5 members from various agricultural backgrounds, and 1 member from the general public. The VPCRAC was tasked to oversee administration of the program, review and recommend funding for research proposals, and advise the Secretary on emerging needs and priorities.

Early on, VPCRAC placed a high priority on funding research to obtain data required to maintain CDFA's existing product registrations. At the same time, the VPCRAC recognized the need to discover and evaluate alternative methods and materials for control of rodents and other vertebrate pests, using an integrated pest management approach.

Since 1991, VPCRAC has received over $9 million in surcharge receipts and has awarded approximately $8.5 million to research and educational projects that support improvements in methods and materials for preventing and controlling damage by vertebrate pests (Figure 1).

RESEARCH FUNDED

Since its inception, VPCRAC research funding has been awarded to research institutions such as UC Berkeley, UC Davis, Utah State University, UC Cooperative Extension, and the USDA National Wildlife Research Center, including more than 38 principal investigators. Between 1991 and 2008, a total of 114 awards have been given. While research often focuses on various aspects of vertebrate pest control, major efforts to date have involved retaining rodenticide registrations, and preventing or controlling damage done to agricultural crops by rodent pests (Figures 2 and 3). In recent years, education and outreach components have become an increasingly significant part of funded projects.

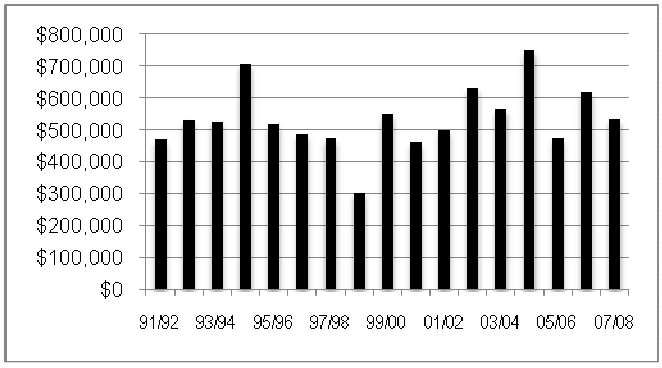

Figure 1. VPCRAC funding received from surcharge on rodenticide and other product sales by county offices, State fiscal years 1991/92 to 2007/08.

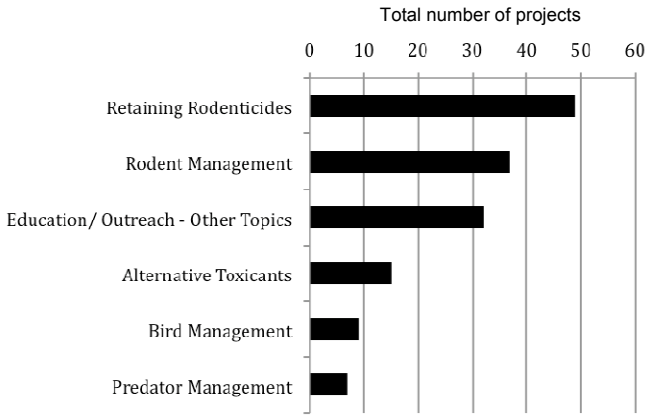

Figure 2. Number of VPCRAC-funded projects by category.

Some examples of the Rodenticide Surcharge Program's accomplishments since its inception are:

- Reregistration of zinc phosphide as a rodenticide
- Reformulation of anticoagulants for control of voles (*Microtus californicus*) in artichokes
- Expanded use of zinc phosphide for vole control
- Improved rodent baiting strategies to increase effectiveness and reduce risks
- Development of biosonics for bird damage control in orchards and vineyards
- Launching a VPCRAC website containing current vertebrate pest control information
- Expanding outreach and continuing education programs in vertebrate pest control
- Supporting development of new predator control materials and delivery systems
- Reregistraion of anticoagulant rodenticides

CONCLUSION

During its 19-year existence, the Rodenticide Surcharge Program has been instrumental in funding high-priority research to support new registrations and re-registrations of compounds that are effective in controlling vertebrate pests. As a result of this program, CDFA has been able to maintain its labels for a number of rodenticide products, including active ingredients zinc phosphide and various anticoagulants. A number of studies have sought safer methods of toxicant delivery so that hazards to non-target species are reduced, while other studies examined alternatives to the use of toxicants.

The recent (2008) EPA reregistration decision makes the support of research a vital part of California's approach to vertebrate pest control; the research that has been funded has been critically needed to support re-registration of rodenticides. In future years, it is hoped that funds will be available to support research on additional alternative materials and methods, providing novel approaches to solving wildlife damage problems affecting California's agriculture.

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