



United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife **Services**

FY 2004

Product Registration: Providing Tools for Wildlife Services

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National Wildlife Research Center Maintains Chemical Tools for Wildlife Damage Management

Wildlife Services' (WS) National Wildlife Research Center (NWRC) is the only Federal research facility devoted exclusively to resolving conflicts between people and wildlife through the development of effective, selective, and acceptable methods, tools, and techniques.

The National Wildlife Research Center (NWRC) Registration Unit is responsible for coordinating the development of data required for APHIS vertebrate control products. APHIS currently holds registrations for rodenticides, predacides, avicides, repellents, snake toxicants, immobilizing agents, and contraceptive agents. To maintain or expand authorized use of these products, the Registration Unit works closely with NWRC scientists to ensure that studies conducted for regulatory purposes meet U.S. Environmental Protection Agency (EPA) and U.S. Food and Drug Administration (FDA) guidelines. In addition, the Registration Unit responds to field personnel requests for new products or improvements to existing products. The Registration Unit also provides technical assistance and information to state Wildlife Services (WS) programs, Federal and State agricultural and conservation agencies, and nongovernmental groups.

NWRC's Product Development staff has coordinated two rodenticide registrant consortia: the Strychnine Consortium and the Zinc Phosphide Consortium. These consortia were established to collectively address EPA re-registration requirements for these compounds. Participation in these consortia has saved APHIS and other rodenticide registrants hundreds of thousands of dollars in data generation costs. Through the efforts of the Strychnine Consortium, all re-registration requirements were met and the

Major Research Accomplishments:

- NWRC's Registration Unit received full EPA registration for the use of acetaminophen in mouse baits for controlling brown treesnakes in Guam and the Northern Mariana Islands. This registration allows the use of bait stations or broadcast baiting techniques.
- NWRC's Registration Unit has begun pivotal safety, efficacy, and toxicity studies on GonaCon™ Immunocontraceptive Vaccine to meet the FDA requirements for a new animal drug approval.
- NWRC's Registration Unit is working cooperatively with the U.S. Fish and Wildlife Service and two private rodenticide manufacturers to register two rodenticide products for eradication of invasive rodents from island ecosystems. Eradication is undertaken to conserve species or habitats in need of special protection.
- NWRC's Registration Unit developed three natural oil-based products (anise, cinnamon, clove) as snake repellents. In addition, corn oil is now available as an egg-addling tool for management of urban geese. These products did not require EPA registration because of their low risk to humans and the environment.



consortium disbanded, a testament to the effectiveness of APHIS participa-

Applying Science and Expertise to Wildlife Challenges

Vertebrate Control Pesticides—APHIS has nine active ingredients registered with the EPA. APHIS holds five individual product registrations for Compound DRC-1339, the only avicide authorized by the EPA. DRC-1339 is used to manage blackbird, pigeon and corvid problems in feedlots, agricultural fields, livestock birthing grounds, and locations where there are endangered species or human health concerns. APHIS also holds registrations for five rodenticide products. These products contain strychnine or zinc phosphide and can be used for a variety of rodent pests (e.g., rats, mice, ground squirrels, nutria, jack rabbits) in agricultural situations or for conservation purposes. Predator management for livestock protection continues to be an important function of WS. APHIS maintains registrations for Compound 1080, used only in the Livestock Protection Collar, and sodium cyanide, used only in the M-44 Cyanide Capsule. APHIS also maintains a registration for acetaminophen as a toxicant for brown treesnakes. A nonlethal alternative to toxicants is the avian repellent methiocarb; this registration allows wildlife managers to treat decoy eggs to protect endangered species' breeding grounds from raven predation.

Wildlife Drugs—APHIS has five Investigational New Animal Drug (INAD) authorizations from the FDA. These authorizations allow interstate transport during the development of new products. Two of the INADs are for the immunocontraceptive vaccines, gonadotropin-releasing hormone (GnRH) and porcine zona pellucida (PZP), under evaluation for use with deer and other species. GonaCon™ is currently undergoing a series of FDA-required studies to obtain new animal drug approval for use in white-tailed deer management. NWRC hopes to submit GonaCon[™] for FDA approval in 2006. Another oral contraceptive compound, Diazacon, is under study for use with rodents and birds. In addition, APHIS holds INADS for two immobilizing agents, alpha-chloralose and propiopromazine hydrochloride. Alpha-chloralose is used to remove problem birds in urban and suburban

settings. NWRC and WS Operations are working with the International Crane Foundation to secure FDA approval to use alpha-chloralose to capture sandhill cranes damaging agricultural fields. Propiopromazine hydrochloride is a tranquilizer used in conjunction with leg-hold predator traps to sedate captured animals, thereby reducing self-inflicted injury prior to the animals' removal from the trap.

Vertebrate control products currently registered or approved for use by USDA APHIS		
Regulated Products	Species Controlled	Uses Unique to APHIS
	RODENTICIDES	
Zinc Phosphide (3 products)	Voles, mice, rats, hares, woodchucks, ground squirrels, muskrats, nutria, prairie dogs	Some
Strychnine (4 products)	Pocket gophers	No
Gas Cartridge (1 product)	Prairie dogs, ground squirrels, woodchucks, marmots	Some
	PREDACIDES	
Large Gas Cartridge (1 product)	Coyotes, red foxes, striped skunks	Yes
M-44 Cyanide Capsules (2 products)		Some
Compound 1080 (Livestock Protection Collar)	Coyotes	Yes
	AVICIDES AND AVIAN REPELLENTS	
Compound DRC-1339 Concentrate (4 labels)	Gulls, pigeons, ravens, crows, magpies, starlings, blackbirds	Yes
Compound DRC-1339 Concentrate—Feedlots	Blackbirds, starlings, grackles, cowbirds	Some
Mesurol Aversive Conditioning Egg Treatment	Crows, ravens	Yes
	SNAKE TOXICANT	
Acetaminophen	Brown treesnakes	Yes
	IMMOBILIZING AGENTS	
Alpha-chloralose	Geese, ducks, coots, pigeons, ravens	Yes
Tranquilizer Trap Device (Propiopromizine HCL)	Wolves, coyotes, feral dogs	Yes
	CONTRACEPTIVE AGENTS	
Porcine Zona Pellucida	Deer, coyotes, prairie dogs, other rodents	Some
Gonadotropin-releasing Hormone	Deer, coyotes	Yes
Diazacon	Prairie Dogs	Yes
Unregulated Products	Species Controlled	Uses Unique to APHIS
	REPELLENTS	
Cinnamon, Clove and Anise Oils	Brown treesnakes	Yes
	EGG-OILING AGENT	
Corn Oil	Canada geese	Yes

Groups Affected by This Problem:

- Urban and suburban residents
- Farmers, ranchers, and livestock producers
- Natural resource managers

Major Cooperators:

- Wildlife Services operations
- U.S. Fish and Wildlife Service
- Private rodenticide registrants
- U.S. Department of Defense

Selected Publications:

Eisemann, J. D.; Petersen, B. E.; Fagerstone, K. A. 2003. Efficacy of zinc phosphide for controlling Norway rats, roof rats, house mice, Peromyscus spp., prairie dogs and ground squirrels: a literature review (1942-2000). In: Fagerstone, K. A.; Witmer, G. W., eds. Proceedings of the 10th wildlife damage management conference; 6—9 April 2003; Hot Springs, AR. Fort Collins, CO: The Wildlife Damage Management Working Group of The Wildlife Society: 335—349.

Eisemann, J. D.; Pipas, P. A.; Cummings, J. L. 2003. Acute and chronic toxicity of compound DRC—1339 (3-chloro-4-methylaniline hydrochloride) to birds. In: Linz, G. M., ed. Management of North American blackbirds. Proceedings of a special symposium of the Wildlife Society 9th annual conference. 27 September 2002; Bismarck, ND. Fort Collins, CO: U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services, National Wildlife Research Center: 49—63.

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- Eisemann, J. D.; Petersen, B. E. 2002. Human poisonings and rodenticides: evaluation of incidents reported to the American Association of Poison Control Centers.
 In: Timm, R. M.; Schmidt, R. H., eds. Proceedings of the 20th vertebrate pest conference; 4–7 March, 2002; Reno, NV. Davis, CA: University of California, Davis: 290–294.
- Eisemann, J. D.; Linz, G. M.; Johnston, J. J. 2001. Non-target hazard assessment of using DRC-1339 avicide to manage blackbirds in sunflower. Pages 197-211 in Johnston, J. J. Pesticides and wildlife. American Chemical Society Symposium Series 771. American Chemical Society, Washington, D.C.
- Mayes, M.; Eisemann, J. D.; Baril, A.; Hawkes, T.; Heijink, L.; Lawlor, P. 2001.
 Case study 1: foliar insecticide I. Pages 45-60 in Hart, A.; et al. eds. Avian effects assessment: a framework for contaminant studies. SETAC Press, Pensacola, Florida.

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