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## 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 NWRC Registration Unit is responsible for ensuring the registrations of WS chemical-based vertebrate management tools are current and meets State and Federal regulations. The Animal and Plant Health Inspection Service (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 WS field personnel requests for new products or improvements to existing products. The Registration Unit also provides technical assistance and information to state WS programs, Federal and State agricultural and conservation agencies, academic institutions, nongovernmental groups, and private industry.

NWRC staff have 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

contraceptive vaccine for white-tailed deer. An Experimental Use Permit application was submitted to conduct further field efficacy research on fallow deer at Point Reyes National Seashore, California. These data will be submitted to the EPA, to support use on other cervid species.

### Major Research Accomplishments:

- WS worked with the U.S. Food and Drug Administration (FDA) to allow the use of alpha chloralose (AC), an immobilizing agent, to capture numerous bird species. AC is an effective tool for selectively removing individuals or small populations of animals from localized areas. Currently, FDA allows the use of AC to capture waterfowl, American coots, rock doves (pigeons), Canada geese, sandhill cranes and ravens. WS' continued use and demonstrated success in conducting capture operations has demonstrated that this technique is safe to both target and non-target species and is an important part of our tool box.
- During 2007, APHIS/WS will pursue EPA registration for GonaCon™ - an immuno-

- WS is working cooperatively with the U.S. Fish and Wildlife Service and two private rodenticide manufacturers to register two rodenticide active ingredients—diphacinone and brodifacoum. This effort has resulted in the submission of three rodenticide registration applications to the EPA which would permit invasive rodent eradication on islands for conservation purposes.



Consortium, all re-registration requirements were met and the consortium disbanded, a testament to the effectiveness of APHIS participation.

### Applying Science and Expertise to Wildlife Challenges

**Vertebrate Control Pesticides**—APHIS currently has nine active ingredients registered with the EPA which comprise a total of twenty product registrations. 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.

As part of a cooperative effort among APHIS, the U.S. Fish and Wildlife Service and private industry, APHIS has submitted three registration applications to the EPA for rodenticide products used to eradicate invasive rodents from island ecosystems. Invasive rodent eradication on islands has proven to yield enormous benefits in the conservation of species or habitats in need of special protection. If registered as proposed, these products will provide natural resource managers the flexibility to design eradication programs with a high probability of success at a minimum cost.

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#### **Groups Affected by These Problems:**

- 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

**Wildlife Contraceptives and Drugs**—In November 2005, the Food and Drug Administration (FDA) relinquished regulatory authority over contraceptives used to manage wildlife and feral animals to the U.S. Environmental Protection Agency (EPA). The NWRC Registration Unit is currently preparing a registration application for the use of a GnRH-based immunocontraceptive vaccine (GonaCon™) for managing cervids (e.g., deer and elk). Because cervid management is the responsibility of state fish and wildlife agencies, APHIS is working closely with the Association of Fish and Wildlife Agencies to ensure a registered product meets the needs of the states. Other contraceptives under investigation for wildlife management include porcine zona pellucida for cervid and canine management and DiazaCon™ for management of monk parakeets, ground squirrels and prairie dogs. APHIS maintains two Investigational New Animal Drug (INAD) authorizations from the FDA for immobilizing agents used in wildlife management, alpha-chloralose and propiopromazine hydrochloride. Alpha-chloralose is used to remove problem birds in urban and suburban settings. 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.

#### **Selected Publications:**

Bynum, K.S., J.D. Eiseman, G.C. Weaver, C.A. Yoder, K.A. Fagerstone, and L.A. Miller. 2007. Nicarbazin OvoControl G bait reduces hatchability of eggs laid by resident Canada geese in Oregon. *Journal of Wildlife Management* 71(1):135-143.

Bynum, K.S., C.A. Yoder, J.D. Eisemann, K.A. Crane, and L.A. Miller. 2005. Development of nicarbazin as a reproductive inhibitor for Canada geese. *Proceedings of the Wildlife Damage Management Meeting* 11:179-189.

Johnston, J. J., W. C. Pitt, R. T. Sugihara, J. D. Eisemann, T. M. Primus, J. Crocker, M. J. Holmes, and A. Hart. 2005. Probabilistic risk assessment for snails, slugs and endangered honeycreepers in diphacinone baited areas on Hawaii, USA. *Journal of Environmental Toxicology and Chemistry* 24:1557-1567.

Primus, T. M., D. J. Kohler, C. A. Furcolow, M. J. Goodall, J. J. Johnston and P. J. Savarie. 2004. Determination of acetaminophen residues in whole body brown treesnakes. *Journal of Liquid Chromatography and Related Technologies* 27(5):897-909.

**Vertebrate control products currently registered or approved for use by USDA APHIS**

<b>Regulated Products</b>	<b>Species Controlled</b>	<b>Uses Unique to APHIS</b>
	<b>RODENTICIDES</b>	
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
	<b>PREDACIDES</b>	
Large Gas Cartridge (1 product)	Coyotes, red foxes, striped skunks	Yes
M-44 Cyanide Capsules (2 products)	Coyotes, red foxes, gray foxes, arctic foxes, feral dogs	Some
Compound 1080 (Livestock Protection Collar)	Coyotes	Yes
	<b>AVICIDES AND AVIAN REPELLENTS</b>	
Compound DRC-1339 Concentrate (4 labels)	Gulls, pigeons, ravens, crows, magpies, starlings, blackbirds	Yes
Compound DRC-1339 Concentrate—Feedlots	Blackbirds, starlings, grackles, cowbirds	Some
Mesurool Aversive Conditioning Egg Treatment	Crows, ravens	Yes
	<b>SNAKE TOXICANT</b>	
Acetaminophen	Brown treesnakes	Yes
	<b>IMMOBILIZING AGENTS</b>	
Alpha-chloralose	Geese, ducks, coots, pigeons, ravens	Yes
Tranquilizer Trap Device (Propiopromizine HCL)	Wolves, coyotes, feral dogs	Yes
	<b>CONTRACEPTIVE AGENTS</b>	
Porcine Zona Pellucida	Deer, coyotes, prairie dogs, other rodents	Some
Gonadotropin-releasing Hormone	Deer, coyotes	Yes
Diazacon	Prairie Dogs	Yes
	<b>REPELLENTS</b>	
Cinnamon, Clove and Anise Oils	Brown treesnakes	Yes
	<b>EGG-OILING AGENT</b>	
Corn Oil	Canada geese	Yes