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The Efficacy of OvoControl® P (nicarbazin) as a Contraceptive for Pigeons in Urban IPM

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Abstract

Pigeons are found in virtually all urban and developed areas of the United States. They are considered a pest species and provided no protection under federal or state laws that safeguard other birds. Pigeons cause extensive property damage and are a source of public health risk and disease.

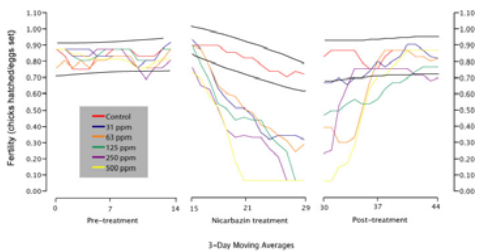
Pigeons are commonly poisoned with non-selective toxicants. OvoControl (brand of nicarbazin) provides a non-toxic and humane alternative -- contraception or "birth control" for birds. Developed in collaboration with the USDA National Wildlife Research Center in Fort Collins, CO and Experiment Station in Gainesville¹, FL, OvoControl P for pigeons was registered by EPA in mid-2007. The product is now licensed in forty-nine states.

Avian contraception provides a population management tool for pigeons consistent with IPM principles. Contraception enhances population attrition and complements all existing exclusion and removal techniques.

The population control efficacy of OvoControl was recently tested at a site in San Diego, CA. Two locations were selected – one treated and one control. OvoControl was administered to a flock of 150 pigeons for a period of 12 months. The population of pigeons at the treated site declined by 53% during this period whereas the population of the control flock remained unchanged. Second year data will be reported in October, 2009.

The data collected in San Diego are consistent with larger scale studies conducted in Italy² with a product based on the same active ingredient.

Efficacy of Nicarbazin in Preventing Egg Hatchability³



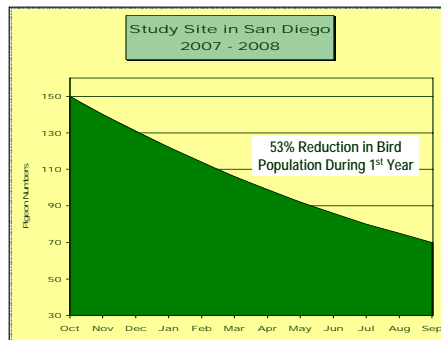
Reinoso, et. al. (2008) illustrated the hatchability effects of nicarbazin in white Pekin duck eggs. Fertility expressed as chicks hatched/eggs set is represented. The solid black lines in each panel represent the upper and lower 95% confidence limits of the control group. Any data point falling outside the perimeter of these lines is significantly different from the control.

Egg hatchability in the higher dosed groups falls to zero within 7 to 14 days of treatment. Days 30-44 illustrate the complete reversibility of the effects of nicarbazin on hatchability.

Pigeon Reproductive Biology⁴

- ✓ Pigeons are monogamous and typically mate for life.
- ✓ Female pigeons can reach sexual maturity as early as 7 months of age..
- ✓ 8 to 12 days after mating, the females lay 1 to 3 (usually 2) white eggs which hatch after 18 days.
- ✓ Depending on the environment, a pigeon can lay up to 6 clutches/year.
- ✓ Chicks fledge in 25-32 days (45 days in midwinter). More eggs are laid before the first clutch leaves the nest.
- ✓ Males and females share brooding responsibilities.
- ✓ Breeding may occur in all seasons, but peak reproduction occurs in the spring and fall. A population of pigeons usually consists of equal numbers of males and females.

Population Management with OvoControl P⁵



- ✓ In captivity, pigeons commonly live up to 15 years. In urban populations, however, pigeons seldom live more than 3 or 4 years.
- ✓ Natural mortality factors, such as predation by mammals and other birds, diseases, and stress due to lack of food and water, reduce pigeon populations by approximately 30% annually.
- ✓ A relatively short life-span and rapid reproduction contribute to the utility of a contraceptive and a predictable reduction in pigeon population.

Delivery System



Automatic "Pigeon" Feeder

- ✓ Oversized capacity wildlife feeder, retrofitted for pigeon use and rooftop installation. Automatic feeder takes labor out of feeding OvoControl.
- ✓ Rotary scatter plate - broadcasts bait in 360° footprint – 20 to 30 foot radius.
- ✓ One feeder is recommended for each flock of up to 150 pigeons.
- ✓ Digital controller/timer and rechargeable 6-volt battery with optional solar panel. Programmable for multiple daily feeding events.

Bird Observation with a Digital Camera System



- 1 Within a few days, pigeons become conditioned to the OvoControl bait and automatic feeder. Six "early birds" arrive at the crack of dawn and wait patiently for the feeder to trigger at 7:00 AM.
- 2 The second photo is taken 30 seconds after the feeder is activated. There are roughly 120 birds feeding. Note the absence of non-target birds in the feeding area.
- 3 Approximately 60 pigeons are still there at 7:02AM, but the bait has already been consumed providing little opportunity for non-target species to consume any bait. The restricted baiting system ensures that additional birds from other areas are not attracted to the feeding site.
- 4 10 minutes later at 7:13AM, the birds have moved on to other foraging opportunities.

For the next hour or so, single birds will still show up from time to time and trip the camera. After that, nothing moves at the site until the next morning.

References

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- ³Reinoso, V., A. MacDonald and G. F. Barbato. *Nicarbazin reduces egg production and fertility in White Pekin Ducks*. Submitted to *Poultry Science*.
- ⁴Johnston, R.F. and M. Janiga. *Feral Pigeons* (1995) Oxford University Press, New York, NY.
- ⁵Macdonald, A. *OvoControl P 0.5% (nicarbazin) Population Dynamics in Pigeons*. Interim study report – Lloyds Pest Control, Linda Vista Maintenance Assessment District, City of San Diego and Innolytics, LLC.

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