



## Innolytics, LLC

The Humane Hatch Control Company

### **OVOCONTROL® G 0.5%** **OVOCONTROL® P 0.5%** **(nicarbazin) Ready to Use Bait**

**Manufacturer** – Innolytics, LLC, Rancho Santa Fe, CA

**Product Information** – OvoControl interferes with the hatchability of avian eggs. The active ingredient, nicarbazin, is registered both by the **FDA** and **EPA**. Originally used as a drug to control coccidiosis in chickens, the compound has been developed and registered for hatch control in pest birds such as Canada geese, ducks and feral pigeons. Further EPA registration applications in other species are under development.

OvoControl deposits in the egg where it interferes with the formation of sperm receptor sites and prevents fertilization. Nicarbazin has been tested in mallard ducks, Japanese quail, feral pigeons, Canada geese, domestic turkeys, chickens and Pekin ducks. While all avian species are considered sensitive, different doses are required to achieve the optimal contraceptive effect.

At the recommended dose, the bird will continue to lay eggs, although the eggs will not hatch. At higher dose levels, the bird may actually stop laying eggs altogether. OvoControl is considered a restricted use pesticide due to its potential to interfere with the hatchability of non-target avian eggs. Care should be taken to avoid administration to non-target birds and other animals. For a current copy of the EPA-approved label, see the Innolytics website at [www.ovocontrol.com](http://www.ovocontrol.com).

Chemically, nicarbazin is an equimolar complex of DNC and HDP. DNC is the biologically active component and, for effective absorption, must be complexed with HDP. Due to its hydrophobic nature, DNC without HDP has very limited biological availability and will simply pass through birds unabsorbed.

**Dosage** – OvoControl G is a semi-soft kibble designed for larger birds. The recommended contraceptive dose for a resident Canada goose (average body weight = 4.5kg) is 35.5mg of nicarbazin/kg body weight, or roughly 25 grams of OvoControl G 0.5%/day. OvoControl P is a hard pellet suited for smaller, grain feeding birds. The recommended dose for feral pigeons (average body weight = 0.32kg) is 83.3 mg of nicarbazin/kg body weight or roughly 5 grams of OvoControl P 0.5%/day. In order to maintain a contraceptive blood level, the contraceptive dose of OvoControl must be consumed daily. The product is not toxic and has a wide margin of safety.

OvoControl must be consumed for several days to achieve blood levels that affect the hatchability of eggs that are forming. Nicarbazin is undetectable in the plasma of Canada geese, mallards, and chickens 4-6 days after consumption of the OvoControl bait has stopped. The levels of DNC in the blood are reduced by half within one day after bait consumption stops. Once the level of DNC falls by approximately one half its peak levels, the effect on eggs being formed has almost disappeared. By two days after bait consumption has stopped, no effects on the egg being formed is seen.

**Toxicity** - The LD<sub>50</sub> of nicarbazin is greater than 25,000 and 10,000mg/kg body weight in the mouse and rat, respectively. The acute oral toxicity in Northern Bobwhite, a sensitive test species, exceeds LD<sub>50</sub> > 2,250mg/kg BW. A recent study in pigeons (Avery, 2006) showed no adverse effects at a dose level of up to 133mg/kg BW up to 49 days. Too much OvoControl does not harm the bird and overdoses will result in a reduction of egg production, eventually dropping it to near zero (Barbato,

2006). No adverse effects, other than impact on egg hatchability, have been noted at any of the dose levels or studies.

**Side Effects** - The main side effects of nicarbazin, when used to control coccidiosis in chickens, include reduced hatchability of eggs, reduced numbers of eggs laid, and reduced eggshell pigment in eggs that contain the brown pigment porphyrin. Heat stress has been reported in commercial poultry when fed under hot and humid conditions. No side effects have been noted when used to control hatchability in birds.

**Teratology** - There has been no reported teratology from the use of OvoControl or nicarbazin in any species. There appears to be a threshold level of DNC in the blood or egg below which the embryo forms normally and hatches normally to yield a healthy chick and above which the embryo does not develop and does not hatch. In addition, there have been no reports over the past 50 years of teratogenic effects in birds in the literature.

**Secondary toxicity** - The chemistry of the active ingredient assures that there is an extraordinarily low risk of any secondary effect on a bird of prey. Once OvoControl is digested and absorbed, it is no longer biologically available to a secondary species. Any amount absorbed from secondary intake would be well below the established no-effect level.

**Aquatic toxicity** - Nicarbazin has poor solubility in water and is considered “practically non-toxic” by EPA. DNC excreted in feces is irreversibly bound to fecal matter and not bioavailable.

**Recommended Use** – For geese and ducks, OvoControl baiting should begin 14 to 21 days before the onset of nesting or a minimum of 7 days prior to the laying of the first egg. In temperate climates, pigeon baiting can begin at any time. OvoControl has been shown to have a wide margin of safety and efficacy. Recommended usage minimizes dose variability. It is possible that the birds may not eat enough bait over the period of a few days in a row to reach the target dose. In this case, the level of DNC in the blood would be too low to affect the egg being formed that day, and, therefore, that egg may hatch. If the same bird ate the target amount of nicarbazin bait the next day, then the egg formed with enough DNC in the blood could be affected and the egg would not hatch.

**Efficacy** - OvoControl is extremely effective when consumed according to label directions. With the appropriate plasma blood concentration, the active ingredient will interfere with hatchability in +/-95% of the eggs. When fed according to the label directions, it is possible that each female bird will still lay a clutch of eggs. If the OvoControl dose is high enough and the blood DNC levels are high enough, fewer eggs than normal may be laid. OvoControl mainly works to reduce hatching of the eggs that are laid.

**Non-targets** - OvoControl only has a contraceptive effect in birds. Studies of the effects of nicarbazin on animals other than birds that lay eggs have been limited to snakes. When brown tree snakes were treated with nicarbazin, reproduction was not affected. The number of eggs laid, the hatchability of the eggs, and the health of the offspring were not affected by treatment of the snake with nicarbazin.

**Storage** - Cool and dry storage conditions

**Ordering Unit** - OvoControl G (20-lb bags) and OvoControl P (30-lb bags) are available through your local pest control product distributor or direct from Innolytics, LLC

**Ordering Information** - Email: [info@ovocontrol.com](mailto:info@ovocontrol.com)  
Phone: 858-759-8012  
FAX: 858-923-2060  
Website: [www.ovocontrol.com](http://www.ovocontrol.com)