



## Chicken house fumigation for Darkling Beetle Control

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Product Category	<ul style="list-style-type: none"> <li>Fumigation of chicken house for Darkling Beetle Control</li> </ul>
Application	<ul style="list-style-type: none"> <li>Total pest control system for chicken house</li> <li>Stop pest carrier problem of salmonella and others</li> <li>True cost reduction program against common pest control program</li> </ul>
Key Function(s)	<ul style="list-style-type: none"> <li>Get rid of underlying problems associated with Darkling Beetle</li> <li>Stop ineffective cost of unsuccessful pesticide program</li> <li>Implement sole annual pest control program</li> </ul>

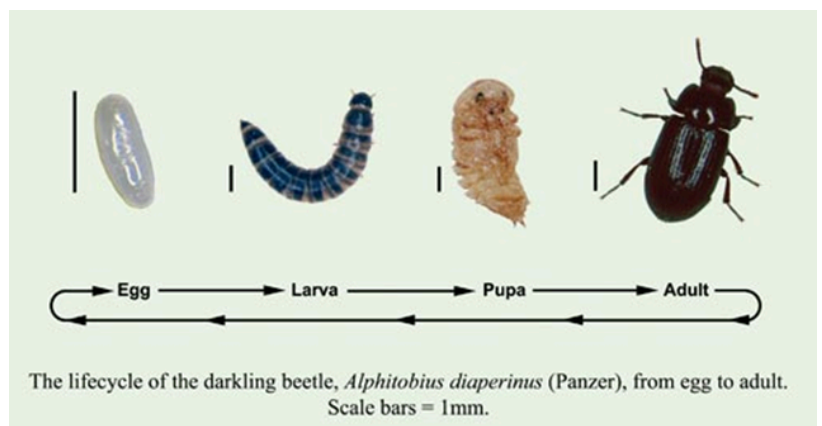
**Darkling beetle**, *Alphitobius diaperinus* is the most common beetle found in poultry houses and causes economic and sanitary impact in the poultry industry. The life cycle of the mealworm can vary from one to three months depending on environmental conditions, and adults can survive for up to one year. The insect lives in the poultry litter where it eats feed and organic waste. The temperature in the poultry house and the accumulation of feed and organic matter promote ideal conditions for beetle infestation.

Darkling beetle can associate with common poultry viruses such as Infectious Bursal Disease Virus (IBDV), Marek's Disease Virus (MDV) and Reovirus; bacteria such as *E.coli* and *Salmonella* spp. and protozoa such as *Histomonas meleagridis*.

Diseases can be spread by darkling beetles by direct contact amongst chickens. The feed consumption of the beetles affects feed conversion in poultry, especially in the first days of life and it is often cited as a vector of viral, bacterial and parasitic pathogens. The control of its populations is so dim and usually not successful by any insecticide application. Beetles are hiding on the walls and floor, moreover, resistant populations of beetles are often reported.

A regular change of pesticide program is strongly suggested. By far, there is no commercial pesticide available in the industry which could promote the chicken houses free of darkling beetles. Pesticide may be effective in lab testing but in chicken houses, things start to get complicated. In one cycle of the chicken raising, once the farmer likes to remove the litter out of the house base, one can notice the flying beetles all around because they are living and hiding underground and that pesticides are obviously useless and a waste of money.

Stellar Unity has studied and collaborated with state-of-the-art darkling beetle control technology with professional operators for Phosphine gas fumigation. Phosphine gas has a long history to succeed pest control in stored grains and recently has crossed over to



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look after the chicken houses in replacement of the traditional pesticides. Though the phosphine gas can be fatal, therefore, it requires professional service operators which are trained and allowed by law to fumigate and control insects.

### Understand the populations of Darkling Beetle

- Controlling or eliminating the darkling beetle population on a poultry farm can be difficult, but possible 100% with Stellar Unity
  - Darkling beetles thrive best in house conditions of 21-35°C (70-95°F) with a litter moisture of at least 10 percent.
- Identifying common locations for beetle populations within the house is fundamental to their control.

Darkling beetles can be found:

- In the litter.
  - Beside pillars.
  - In curtains.
  - In nests.
  - On slats, feeders, drinkers and other equipment.
  - In gaps, holes or cracks of the wall.
  - In storage rooms and egg collection areas.
- Chemical and physical methods work best for controlling darkling beetles.
    - Insecticide application and a detailed cleaning and disinfection program are essential to control. But it is difficult since most of the beetles are hiding and retreating.



*Common locations for darkling beetles*

### Presence of darkling beetles on the farm

Assessment of darkling beetle populations inside the house is subjective; however, the severity of the infestation can be estimated.

- Monitor for darkling beetles before chicks are placed, then once per month until depletion.
- Observation points should be those described in the previous section, but no less than 20 points within the house should be checked.
- Count beetles in a 0.10 m<sup>2</sup> (1 ft<sup>2</sup>) space (under one feed pan, for example).
  - Low population: 1-10 beetles.
  - Medium population: 11-50 beetles.
  - High population: >51 beetles.
- Control measures are successful if the population is 1-10 beetles per 0.10 m<sup>2</sup> (1 ft<sup>2</sup>).

Once all situations under current management and pest control systems have been acknowledged. All information will be kept in record to make a comparison after implementing Phosphine gas fumigation. Our professional team will evaluate the data and set up the fumigation procedure and farmers only wait for good results.

Stellar Unity can assure you to forget the old way of unsuccessful darkling beetle control and management. Stellar Unity has provided proven Phosphine Gas fumigation by our professional workers. Farmers will rest in peace once the phosphine gas fumigation is implemented one time, the darkling beetles may return back only in a period of 12 months, thus, this has significantly reduced pest control cost by 100%. Problems associated with darkling beetles will be yesterday's issue.

Phosphine gas fumigation is the only and successful method which has proven to get rid of darkling beetles from eggs to adults within the period of 12 months. Farmers will save a lot of money from not using ineffective pesticide programs.

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