Over the Top Fly Control:

A New Way to Reduce Flies in Poultry Facilities

The FDA's Egg Safety Final Rule requires poultry producers to monitor flies and take corrective action when an unacceptable threshold is reached[1]. Flies reproduce so quickly that it can be hard to gain control of the population if a poultry producer relies on a single treatment method. Find out how the use of Insect Growth Regulators (IGRs) can improve fly control and discover new ways to include them in your current treatment program.

Flies Are Harmful to Poultry Production

Flies can vector pathogens that cause disease, are irritating to employees, can be a nuisance to neighboring properties and can transfer *Salmonella enteritidis* and other pathogens into a poultry house. Flies can impact producers' bottom line in the form of lawsuits from neighbors, bird death due to avian influenza and other diseases or higher worker turnover due to nuisance flies.

NyGuard® IGR Now Labeled for Use Over Poultry

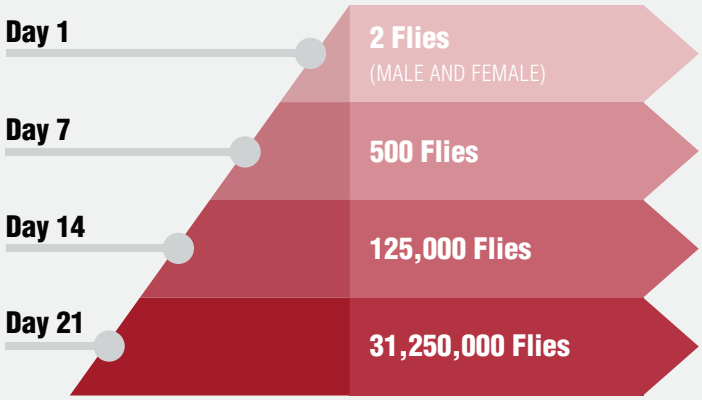

FIG 1. HOUSE FLY POPULATION GROWTH WHEN UNCONTROLLED

ASSUMES OPTIMAL CONDITIONS

Traditionally over poultry applications have been limited to adulticide products, but this only targets a small portion of the fly population. Over 80% of a fly population is in the immature stage and preventing their development into the adult stage is beneficial. Including an IGR in your treatment protocol increases the proportion of the fly population being controlled.

NyGuard IGR has been approved for use over poultry, introducing a new mode of action for producers to use while birds are present. This is critical to keeping pest pressures below the corrective action threshold, especially in egg laying, broiler-breeder and turkey facilities where birds are housed for an extended period of time. Using multiple modes of action in a treatment program also supports resistance management strategies to help maintain product effectiveness.

IGRs like Pyriproxyfen Reduce Fly Populations

Fly eggs exposed to concentrations of pyriproxyfen as low as 0.002 ml per sq ft. (0.006%) were able to keep 100% of the hatched larvae from becoming adult flies, as shown in Figure 2 below[2]. Larvae and pupae develop normally but they never develop beyond the pupal stage and the life cycle is broken before they become adults, reducing the population over time.

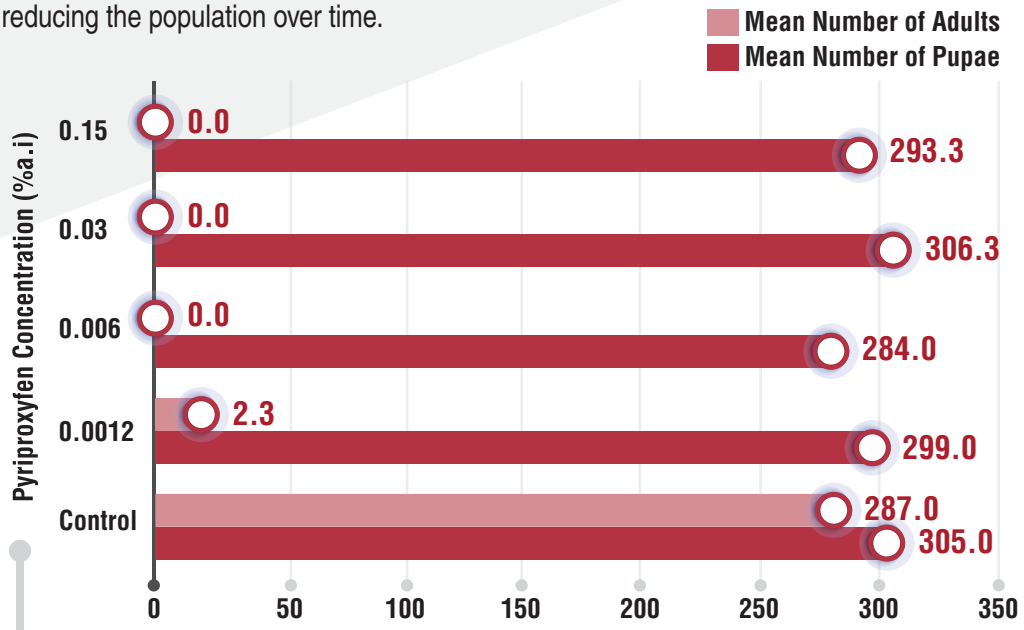

FIG 2. MEAN NUMBER OF FIELD COLLECTED HOUSE FLY ADULTS AND PUPAE EXPOSED TO PYRIPROXYFEN

Space/ULV Application

Amt. of 10% NyGuard concentrate to treat 1,000 cu.ft.
1 ml

Area/Surface Application

Amt. of 10% NyGuard/gallon of water to treat 1,500 sq.ft.
12 ml/gallon (0.03%)
8 ml/gallon (0.02%)
4 ml/gallon (0.01%)

FIG 3. LABEL RATES OF NYGUARD CONCENTRATE

The NyGuard label rate for space and surface treatments will result in applications of approximately 0.001 ml per square feet, similar to results seen at 0.006% of pyriproxyfen in Figure 2. Exposure of this concentration would inhibit 100% adult house fly emergence according to this study.

Fly Control Boosts Biosecurity in Poultry Facilities

Reducing the fly population that may vector disease improves biosecurity. Keeping adult fly levels low helps reduce their chance of contact with the disease-causing organisms vectored by flies. In addition to improved bird health, keeping fly levels low reduces the chance of diseases like *Salmonella* spp. bacteria and antimicrobial resistant bacteria[3] being found on chicken eggs.

Get Successful Fly Control With IGRs

MGK recommends applying a pyriproxyfen product, like NyGuard® IGR, at 2-4 week intervals while maintaining your current insect monitoring and treatment protocol. NyGuard can be surface or space sprayed to resting and breeding sites. It may take 3-4 weeks to notice a reduction in the adult population as NyGuard prevents the emergence of adult flies from the pupal stage. The frequency of NyGuard applications can be decreased once the adult population has declined to an acceptable level. Flies entering the facility from other areas will still be observed.

Pyriproxyfen, the active ingredient in NyGuard, is a well-known and effective active ingredient for the control of flies and other insects. Utilizing NyGuard for over-bird applications give producers another way to enhance their biosecurity efforts to ensure the health of poultry and food products produced from these facilities. This new mode of action provides another tool in the fight against the development of insecticide resistance.

Citations

[1] US Department of Health and Human Services Food and Drug Administration Center for Food Safety and Applied Nutrition: Guidance for Industry; Prevention of Salmonella Enteritidis in Shell Eggs During Production, Storage, and Transportation, December 2011, Pages 1-272

[2] Christopher J. Geden, Gregor J. Devine, Pyriproxyfen and House Flies (Diptera: Muscidae): Effects of Direct Exposure and Autodissemination to Larval Habitats, Journal of Medical Entomology, Volume 49, Issue 3, 1 May 2012, Pages 606–613

[3] Bertelloni F, Bresciani F, Cagnoli G, Scotti B, Lazzerini L, Marcucci M, Colombani G, Bilei S, Bossù T, De Marchis ML, Ebani VV. House Flies (Musca domestica) from Swine and Poultry Farms Carrying Antimicrobial Resistant Enterobacteriaceae and Salmonella. Veterinary Sciences. 2023; 10(2):118. https://doi.org/10.3390/vetsci10020118