

## Horn Flies and Insect Growth Regulators (IGR)

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As spring arrives and temperatures start to creep up it is time to make horn fly control decisions. Especially, if you plan to utilize an insect growth regulator (IGR) products to suppress horn fly populations. IGR's are commonly found in mineral supplements and are passed through the animal. The IGR products are present in the manure where horn flies lay their eggs. IGR products are effective against horn flies because they lay their eggs in only fresh manure where the IGR is actively killing the immature stages. Developing larvae are not able to complete their development to the pupal stage. When considering IGR supplements the cost can be fairly efficient if you are already feeding mineral supplements. Some supplements will only increase by a \$1.00 /hd if you are only adding a IGR to your mineral. However, if you are located in an area where anaplasmosis is a problem then the supplement cost can go up substantially mainly due the anaplaz medication that is included with the mineral.

Horn flies are a common fly species associated with livestock. They are a small black fly and feed on cattle in an inverted position with their head facing down. Both male and female horn flies take blood from the host and feed 20 to 30 times a day. Horn flies continually stay on the animal and only leave the animal for short periods to lay eggs. Typical feeding areas on cattle include the back, side, belly and legs of cattle. Horn fly populations begin building up in the spring as early as April and last until the 1<sup>st</sup> frost. The life cycle of horn flies lends itself to building large populations on cattle if control is not implemented.

Horn flies complete an entire generation in as few as 14 days during the summer months, which leads to numerous generations of flies over six or seven months. Horn flies have complete metamorphosis which consists of eggs, larvae, pupae, and adults. The adult female fly must lay her eggs in fresh cow manure. The eggs hatch within 48 hours into 1<sup>st</sup> instar larvae which feed in the manure pat and progressively grow into 2<sup>nd</sup> and 3<sup>rd</sup> instar larvae. Larvae of the horn fly develop only in fresh cattle manure. Third instar larvae crawl from the manure pat to a drier area and pupate. Inside the pupal case the adult fly forms and the adult will emerge from the pupal case and seek a suitable host, which are typically cattle. During mid fall adults do not emerge and the horn fly spends the winter in the pupal stage.

Horn flies can have significant impacts on growing cattle. The main impact is the reduction in weight gain especially in weaning weights for spring born calves. Some studies have attributed a 1.5 lb of extra gain per week when horn flies are controlled. The reduction in weight occurs mainly because of stress on the cow which can then result in reduced milk flow or production. This stress is caused by horn flies because they are a blood feeding insect. The loss of blood and stress from biting activity results in direct economic impacts (reduced weights). Considering today's market value for cattle the impact is even larger.

Mineral supplements that have IGR's are effective only when most of the cattle in a herd are consuming the required amount and mineral supplements work best when non treated cattle are not nearby as populations of horn fly will exchange from one herd to another. Some other things to consider when applying IGR's to control horn fly populations:

- 1.) Start before you have a horn fly problem
- 2.) Start feeding supplements with IGR's within 15-20 days after the last hard freeze
- 3.) If large adult populations start to build up on your cattle consider using additional control strategies such as pour-ons, insecticide ear tags, or spraying the animals with an approved insecticide

The role of IGR's in a horn fly control program can be very significant if used in a more preventative manner. Since IGR's only control immature stages and if your neighbors are doing nothing for horn flies then you may want to consider alternative control strategies.