ANGOUMOIS GRAIN MOTH (AGM) *Sitotroga cerealella*

Description:

Adults:

Wingspan: 12mm. Fringed wings: yellow-brown. Forewings marked with darker lines. Hindwings notched. Short-lived. Adults do not feed.

Eggs:

40-150. Laid on or near stored cereal and flours, wheat heads, and exposed corn ears. 2mm. Long. White, changing to re-brown within a few days.

Larvae:

Growth to 6mm. Pale yellow; poorly developed abdominal prolegs. Larvae bore into grain kernels, feeding off the endosperm or germ of hard kernels. Mature larvae eat a channel to the outside of the grain and spin a silken cocoon.

Pupae:

Approximately the same size as larvae. Reddish brown. Mature larvae pupate in-situ, emerging "from the grain as a moth."

Left: AGM adult. (Source: Texas A&M University Extension Entomology)
Right: AGM pupae. (Source: Clemson University - USDA Cooperative Extension)

Hosts:

All types bulk and bagged grains and field crops, especially wheat and corn.

Damage:

- Most economic damage is from the larvae directly feeding on commodities.
- Channel made by larvae leaves a transparent, circular "window" in kernels.
- A single kernel may host multiple larvae.
- The most common and most destructive grain moth in the United States.

AGM damage. (Source: University of Kentucky Entomology)

Phenology:

Life Cycle	28-35 days
Egg hatch	7-28 days
Larvae (while feeding)	7-14 days
Pupae	8-20 days
Mating/oviposition	Immediately after eclosion
Adult lifespan	10-30 days
Threshold temperature	62.6-96.8°F (17-36°C)

Lure Type and Maintenance:

** Please note that the lure recommendations can change depending on the trap being used.*

- ***STORGARD® AGM controlled release pheromone lure.***
  - Replace every 6-8 weeks or according to individual package instructions.

Lure Storage:

- Store in unopened factory sealed packages in a cool place (< 74° F or 24° C maximum) for short periods or refrigerate longer term.
- Refrigerate or freeze unopened packages to carry over for annual storage.

Trap Design and Maintenance:

- ***STORGARD® II trap.***
  - Check traps 1-2 times weekly. Remove trapped insects and debris.
  - Replace trap every 6 weeks.
  - Dusty conditions: change trap more frequently.

Placement Time:

- Initiate monitoring program with a full-area survey for at least one month while there is insect activity.
- Monitor incoming commodities and off-loading areas aggressively.
- Monitor throughout the entire season.

Placement Pattern:

- Position traps in grid pattern.
- Traps should be spaced a minimum of 16-20m apart.

Trap Density:

- Decrease space between traps with high capture rates as insects are first captured in order to pinpoint contaminated areas.
- Reduce the number of traps after the initial survey. Concentrate traps in high risk areas.

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Constant Low Capture, IPM Protocol:

- Tighten STORGARD® trap-grid areas of marked increase only.
- Check for at-risk infested commodities.
- Remove/clean contaminated commodities.
- Check for outside sources of infestation.
- Review sanitation program and continue to monitor for infested commodities.

TREATMENT:

- Delay insecticide treatments until there is evidence of a significant population change or spot-treat areas considered susceptible or especially valuable.

Constant Localized High Capture, IPM Protocol:

- Tighten STORGARD® trap-grid in areas showing marked or general increase.
- Remove/clean contaminated commodities.
- Review sanitation program and continue to monitor for infested commodities.

TREATMENT:

- Initiate insecticide treatments in areas considered susceptible or especially valuable.

Constant High Capture, IPM Protocol:

- Remove/clean contaminated commodities.
- Review sanitation program and continue to monitor for infested commodities.

TREATMENT:

- Initiate insecticide treatments immediately.

Note, always:

- Use only one pheromone lure.
- Count and record captures as recommended.
- Change trap as needed.
- Change lure as needed.
- Discard lures in trash far from the area of use and remove trash afterwards.
- Follow recommendations.
- Contact local extension authorities and consultants for regional advice.

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