

PROFESSIONAL PEST MANAGEMENT

UNIQUE CHEMISTRY OFFERS SUPERIOR CONTROL

Technical Bulletin

FOR LIFE UNINTERRUPTED™

 **Advion® Cockroach**
Gel bait

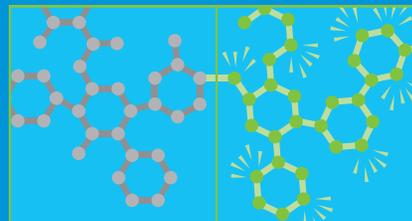
syngenta®

A SUPERIOR FORMULATION FOR THOROUGH COCKROACH CONTROL

Cockroaches are unsightly and can spread bacteria and allergens, which can be problematic to your customers. Syngenta offers **Advion® Cockroach gel bait** to achieve targeted results of multiple cockroach species, including gel bait-averse cockroaches. With Advion Cockroach, your customers can enjoy their property without the nuisance and worry of cockroaches.

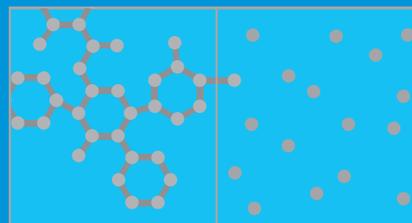
A Differentiating Mode of Action

Advion Cockroach can effectively differentiate between target insects and non-target insects. The mode of action in Advion Cockroach targets the insect's metabolic process by bioactivating the active ingredient, *indoxacarb*, within target insects.



Target Insects

Upon entering an insect, *indoxacarb* is converted into a new molecule with insecticidal properties. This process is activated specifically by the insect's own enzymes.



Non-Target Insects

The bioactivation process of Advion Cockroach is not as efficient within most non-target insects, so they are less likely to be affected by the product.

Defense Against Cockroaches

The slight delay in cockroach mortality caused by the non-repellent active ingredient, *indoxacarb*, allows cockroaches to consume the bait and return to their harborage site to contaminate other cockroaches. Research at Purdue University documents Advion Cockroach as the first bait to prove tertiary kill. One cockroach exposed to Advion Cockroach can carry it to another cockroach, which can then expose it to a third cockroach. This process unleashes a three-step chain reaction resulting in the control of up to 54 cockroaches.

Figure 1 shows cockroach population growth rates over a three-month period. **Figure 2** demonstrates the effect Advion Cockroach can have through its exponential control.

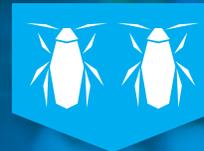


Figure 1

Population Dynamics: Two adult cockroaches can reproduce up to 54 cockroaches in 3 months.

Source: Reid, B., Reiersen, D., Ross, M., Rust, M., and Owens, J. 1995. *Understanding and Controlling the German Cockroach*.

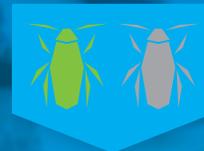
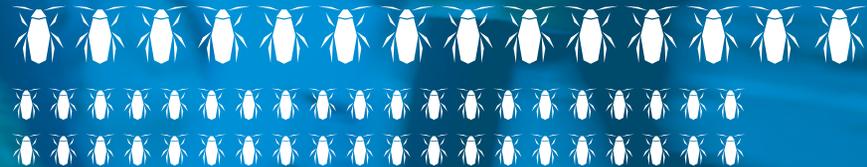
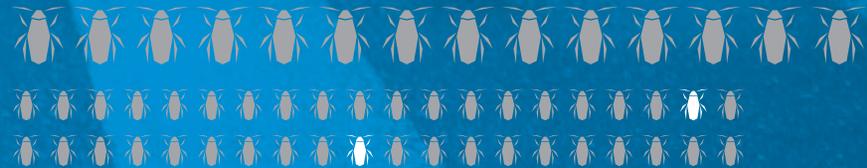


Figure 2

Advion Cockroach Performance: Studies show that one cockroach exposed to Advion Cockroach can kill 54 - a rate comparable to the growth rate of cockroach populations.

Source: Buckowski, G., Scherer, C. and Bennett, G. 2008. "Horizontal transfer of bait in the German cockroach: Indoxacarb causes secondary and tertiary mortality." *Journal of Economic Entomology* 101(3): 894-901



 Carrier  Alive  Dead

Highly Attractive Formulation

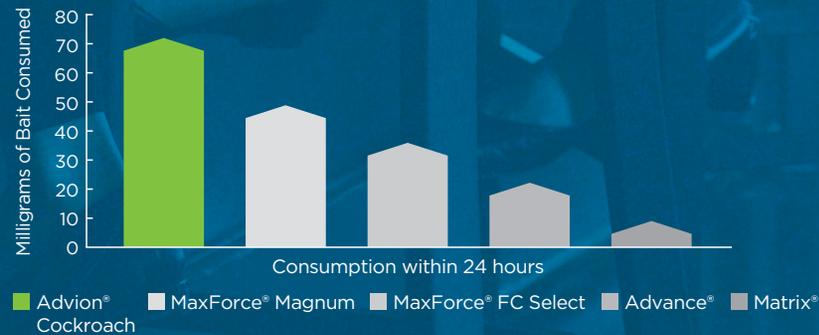
Some baits dry and harden after application, making them less palatable to cockroaches. However, studies show Advion Cockroach remains palatable to cockroaches for up to three months after application.

German Cockroach Consumption Trials¹ – Stine-Haskell Research Center

Baits are designed for targeted insect consumption, so the appeal of gel baits is a critical part of performance.

Advion Cockroach appealed to more than 75 percent of German cockroaches.

Source: Stine-Haskell Research Center, PR086142



¹Trials reflect treatment rates and mixing partners commonly recommended in the marketplace.

Gel Bait-Averse Populations

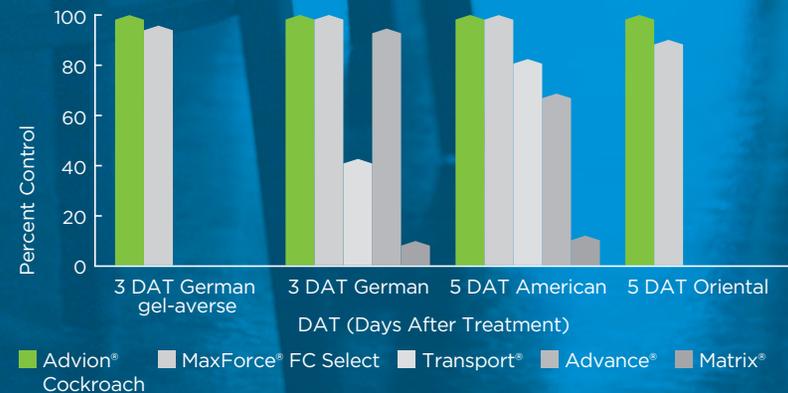
Research shows the bait matrix of some gel bait products can lose its appeal to cockroaches. The formulation of Advion Cockroach was developed to specifically overcome gel bait-aversion in tough cockroach populations. Furthermore, because gel bait-aversion is a form of resistance, Syngenta continues to monitor any change in response to help ensure superior performance for the future.

Gel Bait-Averse, German, American and Oriental Cockroach Laboratory Trial¹ – Delaware, Indiana and Virginia

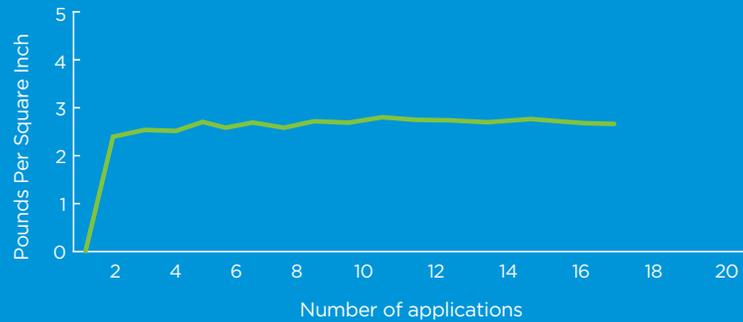
This chart illustrates bait appeal and performances on some of the most dominant and problematic cockroach species.

Advion Cockroach provided 100 percent control of all prevailing cockroach species.

Source: Stine-Haskell Research Center, PR076106, PR076107, Purdue University, PR057606, Virginia Tech, PR047106



Consistency of Application Dispensing



■ Advion® Cockroach
 ■ MaxForce® FC Select
 ■ MaxForce® FC
 ■ Avert®

Source: DD2005, DuPont Applications Technology Center

Easy and Consistent Application

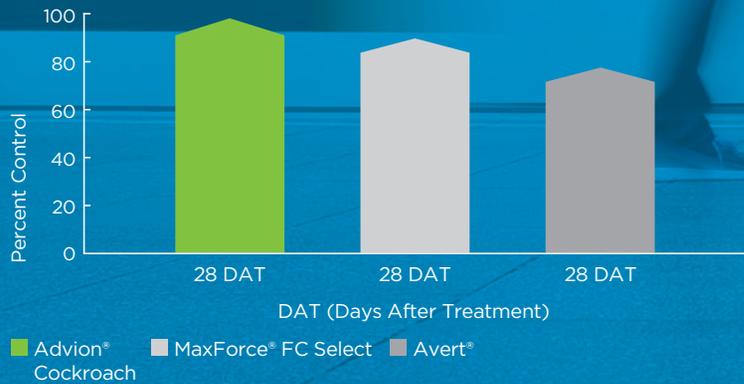
In application tests, using a mechanism that measures the pressure required to pull a bait-gun trigger for product dispensing, only Advion Cockroach applications were consistent pull after pull. Competitor gel bait formulations showed viscosity variations and included air bubbles. With the smooth formulation of Advion Cockroach, you can feel confident that you are applying the right amount of gel, even in areas hidden from view.

American Cockroach Field Trial¹ - Indiana

This 28-day simulated trial best predicts how products will perform with alternative food sources in a traditional cockroach environment.

Advion Cockroach maintained 100 percent control when competing with alternative food sources.

Source: Purdue University, PR067102

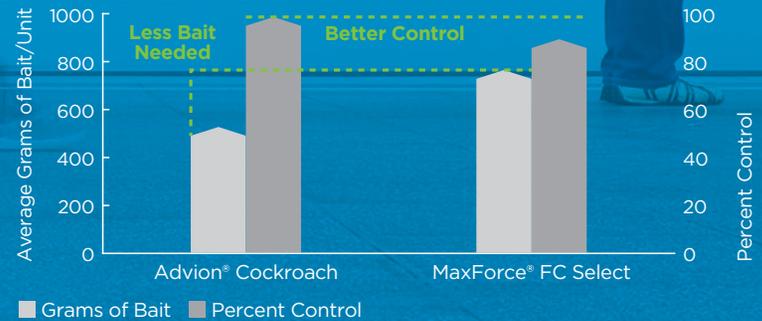


Greater Control with Less Bait: German Cockroach Field Trial¹ - Texas

This chart demonstrates field performance in a heavily infested housing complex. Each product treated the same number of housing units with similar infestation levels.

With its low use rate, Advion Cockroach still maintained 100 percent control of German cockroaches.

Source: Texas A&M University, PR067402



¹ Trials reflect treatment rates and mixing partners commonly recommended in the marketplace.

ADVION COCKROACH PROFILE

- ▶ Begins controlling cockroaches in 24 hours
- ▶ Proprietary, high-consumption bait matrix
- ▶ Non-repellent chemistry
- ▶ Performs well on all major cockroach species
- ▶ Approved for use in food-handling establishments, as directed by the product label

Advion Cockroach was formulated to achieve targeted results quickly, reliably and with minimum disruption to normal routines.

To learn more about Advion Cockroach gel bait, please visit www.SyngentaPMP.com or call **1-866-SYNGENT(A) (796-4368)**.



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