

Is Biflex® Mikron Repellent to German cockroaches?

German cockroaches (*Blattella germanica*) need no introduction to Pest Managers. They would be near the top of the list of problem pests in every country of the world. They have been very successful at establishing a relationship with human habitation and are resilient in the face of many pest control measures. Reasons include prolific reproduction rates combined with a short reproduction cycle, sexually mature within several weeks of hatching, the ability to hide in very small spaces, and the adaption and resistance to some chemical treatments.

Biflex® Mikron is the newest dual active formulation to the Australian market. With a number of these dual active products present, which all include a synthetic pyrethroid, a lot of questions are being asked whether they are repellent or non-repellent to the target pests, like German roaches.

Whilst a large volume of trial data was submitted to prove that the product works, FMC are committed to continuously increasing the knowledge base of what their products can and cannot do and delivering this information to pest managers to allow them to make informed decisions on how, when, and where to apply the product to achieve the desired treatment outcome. A current example of this commitment was the engagement of experienced and respected pest researcher Scott Kleinschmidt from Australian Timber & Pest Research (ATP Research) to answer the question: “Are Biflex® Mikron treated surfaces repellent to German cockroaches”.

In early 2022, Scott set up multiple test arenas (large plastic boxes) which contained either a piece

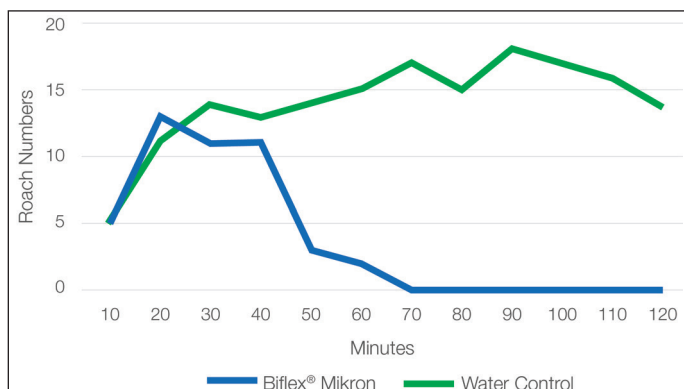


Figure 1: Average number of German cockroaches counted on the porous surface (plywood) treated with Biflex® Mikron and water

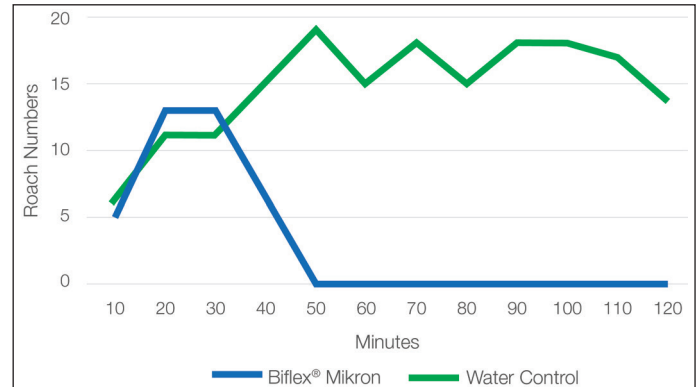
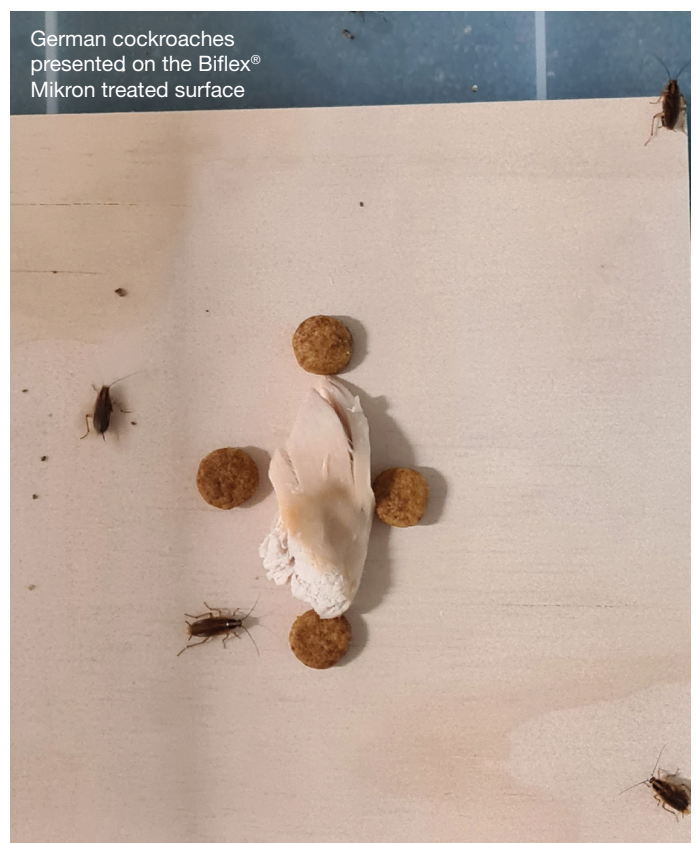


Figure 2: Average number of German cockroaches counted on the non-porous surface (ceramic tile) treated with Biflex® Mikron and water

of plywood (porous surface) or a ceramic tile (non-porous surface) in the middle of the box. These were either treated with Biflex® Mikron at the label rate for the relevant surface, or treated with water only, and left to dry for 24 hours. There were 4 replicates for each treatment on each surface type (16 test arenas in total).

After the 24-hour drying period, a food source consisting of dried dog food and a piece of cooked chicken breast was placed in the middle of each treated surface, and 20 German roaches, a mixture



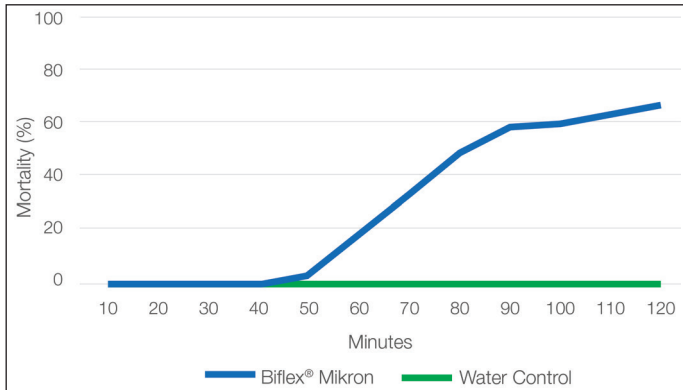


Figure 3: Mortality rate German cockroaches on the porous surface (plywood) treated with Biflex® Mikron and water

of adult and nymphs, were added to the corner of the box along with a piece of wet cotton wool as a moisture source. The roaches could then choose to travel over the treated surfaces to reach the food or not. A count of the number of roaches present on each surface was conducted every 10 minutes for a total period of 2 hours. Roach mortality was also recorded.

If the Biflex® Mikron treatment was repellent to German roaches, it would be expected that fewer roaches would be present on the Mikron treated surfaces compared to the water treated surfaces.

In Figures 1 and 2 the average number of German roaches on the Biflex® Mikron and water treated surfaces were very similar until the 40-minute mark (Figure 1) for the porous surface, and the 30-minute mark for the non-porous surface (Figure 2). After these points the roach numbers present on the Mikron treated surfaces dropped off dramatically.

The reason for this can be explained in the mortality results. You can see in the second set of graphs (Figures 3 and 4) that at a similar time that the roach numbers present on the Mikron treated surfaces started to decline, the mortality rate started to increase. Whereas on the water treated surfaces, the mortality rate stayed at zero. In other words, why there were less roaches present on the Mikron treated surface was because they were either dying or dead.

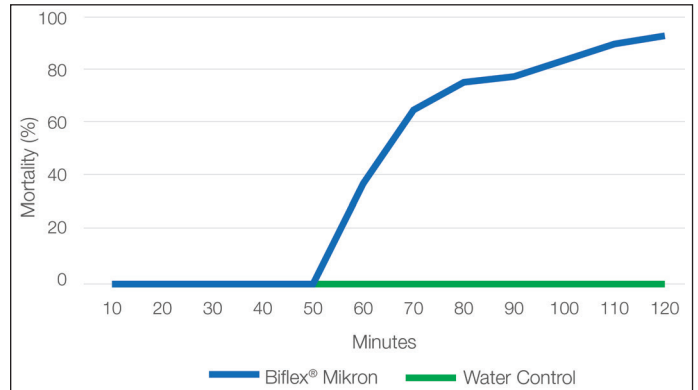


Figure 4: Mortality rate German cockroaches on the non-porous surface (ceramic tile) treated with Biflex® Mikron and water

This trial proves that Biflex® Mikron is non-repellent to German cockroaches on both porous and non-porous surfaces. This means the roaches will not avoid Biflex® Mikron treated surfaces, such as a harbourage area, and increasing the chances of picking up a lethal dose.



For further information please contact your local FMC representative or visit fmcaustralasia.com.au