

**TEMPERATURE ACTIVITY OF FIPRONIL
in FIELD STRAINS of GERMAN COCKROACH
(DICTYOPTERA: BLATTELLIDAE)**

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Speed of control in cockroach field trials with bait products often seems to vary inexplicably by region. An investigation was run on a variety of field strains to determine whether temperature and strain differences are factors involved in speed of performance. Regional strains from a variety of sources were established in the laboratory. Replicated batches of adult males from each strain were tested at 21.1, 26.6, and 32.2°C. Male biomass was similar across strains. An experimental 0.03% fipronil gel was placed in the test jars and effect monitored at 0.5 hour intervals until complete mortality occurred. Consumption occurred in all cases. LT_{50} and LT_{90} values were calculated for each temperature and strain. Both strain and temperature were found to be factors in speed of kill. A positive temperature activity was found for each strain tested. This result is not illogical, considering the mode of activity, but there was a large difference in LT response at each temperature by strain. There was a 10-hour range in the LT_{50} s at 26.6°C across strains, from 2.6-12.5 hours, while at 32.2°C, there was only a 2.4-hour range, from 1.5-3.9 hours. In the 8 strains tested, 2 had faster response to the toxicant than the lab strain. The lab strain tested at extended temperature ranges found even faster (-0.8 hr) LT_{50} at 35°C and slower (+1.2hr) at 18°C. Generally speaking, LT_{50} or LT_{90} was twice as fast at 32°C than 21°C for each strain. The positive temperature activity and variance in speed of kill by strain could easily explain some of the differences seen in field performance studies with similar products, pest populations, and sanitation conditions.