

AAVP 2015

Cat Flea Susceptibility to Imidacloprid: Results of a 14-Year Monitoring Initiative

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A flea larval bioassay was developed to monitor the susceptibility of fleas (*Ctenocephalides felis*) to imidacloprid (Bayer Health Care). Flea eggs representing different field isolates of *C. felis* were collected from Australia, Austria, Canada, Denmark, France, Germany, Italy, the Netherlands, the United Kingdom, and the United States. From 2002-2014, 2,838 isolates were received; 2,042 were placed in the assay. Host species were known for 2,730 isolates; 1,744 isolates were from cats; 986 from dogs. Flea eggs collected by month were highest from July-November (60%) in the northern hemisphere and also from July-November (78%) in the southern hemisphere, a period corresponding to the rainy season in Australia. Isolates were challenged with a diagnostic dose of imidacloprid (3ppm) applied to larval flea-rearing medium. Adult survival of 5% or greater was observed for 56 isolates (0.03%). Re-conduct of the assay using either a repeat challenge dose of 3 ppm of imidacloprid or a dose-response Probit analysis confirmed the susceptibility of these isolates to imidacloprid. We conclude that the *C. felis* isolates evaluated to date remain susceptible to imidacloprid.

July 11-14 Boston 2015