

FIFRA Scientific Advisory Panel on Efficacy Testing of Pesticides used for Invertebrate Pests and Fire Ants

The Agency is seeking advice and recommendations from the SAP on scientific issues associated with the proposed revised premises and fire ant EPA guidelines. Below is an additional charge question to the panel associated with the premises guideline.

Additional Charge to the Panel

Premises treatment methods

11) Historically, the Agency has often received basic laboratory studies which utilize 5 replicates of 10 individuals. Based on the stats document provided, that replication provides power of 0.8 with 15% or 20% precision. However, with a precision of 10%, the same replication only provides a power of 0.6. This level of replication is the default recommendation in the draft premises guideline, though other levels of replication may be acceptable if submission of information from a power analysis or other justifications are provided. The Agency is specifically considering available methods to increase the statistical power of each test.

Please discuss and provide comment on:

a. The statistical methods and simulations EPA has developed to estimate the power of the proposed design, and specifically to achieve an adequate estimate of precision around the estimated mortality rate in the treated group.

b. Using the assumptions described in the Sample Size document, options with 10% precision and power of 0.8 are 5 replicates of 15 individuals, 7 replicates of 10 individuals per replicate, or 35 replicates with 1 individual per replicate. Please comment on this conclusion and provide alternative approaches, if appropriate. Please also comment on the use of power of 0.8 and precision of 10% as generally acceptable standards. Do the panel's recommendations vary based on species and/or test? Please specify.