Welcome to github folder for the Inesfly Paint Pesticide Study observing for survival and behavioral effects of bed bugs by Inesfly’s 5A-IGR and Chlorfenapyr paint. This file should help you to replicate the study. Alternatively, if you are a part of our team, it should help you to make any necessary edits or changes in preparation for publication or for other educational purposes.

Data:

Survival Data:

The survival data can be found in csv’s in the “DATA” folder. Each is entered as “#DFS(A/B)”. The “#D” refers to the day after painting. Each data set was double entered so A refers to the first entry and B refers to the second entry. FS refers to “full study” data. Pilot data is also available upon request (dropbox). Temperature and Humidity data can be found in “InesflyTempHum.csv” and the amount of paint for each quadrant can be verified in the “InesflyPaintDistribution.csv” file.

The survival data is process and cleaned in the R code “InesflyPaint\_CleanFormat.R”.

**1-56**  Data is Imported

**57-126** The macro components of the data are corrected (columns and rows)

**127- 784** The individual data is corrected. Values that are not equal between the two data entries (127- 564). Insects hat “resurrected” or observed as dead and at a later time observed as living. (565-679) and considering missing values from bugs that escaped primary containment(680-705).

**706-784** Data is formatted for survival analysis (melt) and dates are added and status is made into series of binary dummy variables.

**785-790** Data is merged and exported as final “DataMelt.csv ”

Once the data is cleaned, “**InesflyPaintCode.R**” is used to analyze the data.

**1-55** Are used to load the necessary packages, set the working directory and bring in the data.

The “treatmentsum” dataset is created to summarize the data based on each treatment level(typically 48 insects). The treatment variable is in the form (##H-AA-#) where ##H refers to the length of exposure in hours(1,3,6, or 24 hours) . AA is an abbreviation for the paint type. “5A” stands for the 5A-IGR paint formulation. “CO” stands for the control formulation and “CF” stands for the chlorfenapyr formulation. The # is the number of days since the tray was painted (1,90, or 180 days). Day in the table refers to the day of observation (0,1,2,7,14,21, or 28). Not all insects were observed at the

Each column should have 48 in the total. As reported in the paper, only 11 insects were used for each quadrant in the 1 day after painting repetition so 44 insects are observed. For 24 hours of exposure, no observations were made for 0 days as they were still on the exposure trays at that point. Also the