PHEROMONE MONITORING OF RED FLOUR BEETLE POPULATIONS IN MILLS TO EVALUATE FUMIGATION EFFECTIVENESS

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Commercial food and pheromone baited traps were used to continuously monitor populations of the red flour beetle in 12 rice and wheat flour mills and a pasta manufacturing facility subjected to fumigation with either sulfuryl fluoride (ProFume) or methyl bromide. The intent of this pheromone monitoring is to determine the impact of fumigation on red flour beetle populations, to evaluate sources of variation in fumigation efficacy, and to compare methyl bromide and ProFume fumigations. The number of traps used at each site varied from 35 to 50, and traps were collected at 15-30 d interval to enumerate the number of adult red flour beetles. The first date of trapping was September 2, 2005 and the last trapping date was April 6, 2007. However, the total pheromone monitoring period varied among facilities. Incomplete trapping data were available from facilities using methyl bromide, and trapping concluded prematurely in many of these facilities, whereas complete data were obtained from facilities using ProFume. This poster will show trends in populations of red flour beetle in each of the facilities relative to fumigations done on major US holidays. Population rebounds following fumigation will be compared across facilities and with similar data presented in published literature. Data will be presented on fumigant concentrations where available and on mortality of insects in bioassays conducted during the fumigations. The limitations of using traps for gauging treatment effectiveness will also be discussed.