PRESS RELEASES

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New Research Study Finds Fruit Flies Capable of Transferring Dangerous Bacteria, Posing Food Safety Risk

ST. PAUL, Minn.--(BUSINESS WIRE)-- Fruit flies have long been a source of annoyance for restaurant, foodservice and food processing operators. But now, new research shows that these tiny pests can play a more sinister role: spreading illness-inducing bacterial pathogens to food and food preparation surfaces.

The study, conducted by scientists at Ecolab, the leading provider of pest elimination solutions to the foodservice, food processing and food retail industries, was recently published in the Journal of Food Protection*. The study found evidence of fruit flies' ability to transfer harmful bacteria from a contaminated source to surfaces or ready-to-eat food. Fruit flies are present in more than half of foodservice facilities, according to data collected by Ecolab's field team, which provides both comprehensive and localized treatment options for small flies.

"Our research confirms that the risk of fruit flies to food safety is as threatening as that of other pests, such as cockroaches, rodents and house flies," said Dr. John Barcay, Ecolab senior staff scientist and an author of the article, "Fruit Flies as Potential Vectors of Foodborne Illness."

In laboratory experiments, the researchers used specially made fly enclosures to assess fruit flies' ability to transfer *E. coli*, *Salmonella* and *Listeria* bacteria from a contaminated food source to surfaces of the enclosures. They also examined fruit flies' ability to transfer *E. coli* from a contaminated food source to non-contaminated foods. Finally, the researchers investigated fruit flies' capacity to carry bacteria – and the location on their bodies where they are most likely to carry the microorganisms.

Results showed that fruit flies are capable of transferring *E.coli*, *Salmonella* and *Listeria* to surfaces and relocating *E.coli* from a contaminated source to fresh, ready-to-eat food. The data showed that, on average, a fruit fly had the capacity to carry 1,000 (range 150 – 10,000) 'foreign' bacteria – microorganisms that are not part of their natural flora. Soil, biofilm and bacteria were found on fruit fly tarsal and leg areas.

"The presence of even a small number of pathogenic foodborne bacteria transferred by fruit flies to food preparation surfaces or ready-to-eat foods can lead to a high probability of infection," said Barcay. "This, along with potentially rapid bacterial growth in many ready-to-eat foods, indicates that a fruit fly infestation can pose a public health risk in restaurants and other food service facilities."

Study co-investigators E. P. Black, G.J. Hinrichs, D.B. Gardner and Barcay conclude that food operators can reduce the risk by being "prudent in eliminating fruit flies through proper cleaning and sanitizing of potential breeding sites." Those sites – generally anywhere food debris and aqueous fluids can collect and stagnate – include floor drains, drain lines from drink dispensing equipment and floors with stagnating water. Further, the authors conclude that "it is very important for food handling facilities to partner with reputable pest management partners that are knowledgeable about how to inspect for fruit fly breeding sites, perform chemical and non-chemical approaches to eliminating fruit fries, and maintain good communication with facility management and staff about maintaining structural integrity."

* For more information on the research, read "Fruit Flies as Potential Vectors of Foodborne Illness," *Journal of Food Protection* (Vol. 81, No. 3, 2018, pages 509-514. doi:10.4315/0362-028X.JFP-17-255).

About Ecolab

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