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Bed bug monitoring – from demand assessment to market introduction

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How can bed bug infestations be reliably localised with modern technology? Are the well reviewed bed bug monitors that are currently on the market functional and reliable? These and other relevant questions are often asked. Through a long-standing collaboration with the Albstadt-Sigmaringen University of Applied Science, the Frowein company, sought to answer these and more questions through a series of investigations. Using students from the Food, Nutrition and Hygiene course in the Faculty of Life Sciences, Frowen conducted experiments with existing bed bug monitors, in the laboratory of the Albstadt-Sigmaringen University of Applied Science and in a purpose-built hotel room in the premises of the Frowein. Bed bugs were obtained from the colony of Bayer Crop Science Deutschland GmbH.

The results and their analysis suggested that bed bugs choose their hiding places mainly by chance. More importantly, the low capture rates of the monitors used, made it clear that in the tests, they did not function as effectively as claimed by the suppliers and it was felt that the attempt to attract the bed bugs using heat alone did not have the desired result.

In a parallel project, an extensive review of old literature held by the Frowein company, dating back to the 1920's was made, together with external literature sources. The experimental results and literature sources combined have formed the basis for the development of a new bed bug monitor. The tests focused on the behaviour of bed bugs, looking at average activity during the night, nocturnal activity during a week and the average location on each morning using night vision cameras.

The bed bug monitor that has subsequently been developed is based on the simultaneous release of heat and CO_2. Both are released constantly at a similar dosage within a model body, specifically designed for this purpose. The bed bugs that are attracted are trapped in place with a special adhesive surface. CO_2 is released by a special CO2 generator, which produces and releases CO_2 for approximately 4 – 6 weeks after activation.

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