

## **Monitoring the minute: pheromone-based monitoring of gall midges**

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Many of the world's over 5000 gall midge (Diptera: Cecidomyiidae) species are serious pests on a wide variety of crops, e.g. wheat, rice, sorghum, rape, apples, mango, pine, raspberries and blueberries. Due to the small size of all life-stages, short life-span of the adults and the subtle damage they cause on the crop, gall midge outbreaks and/or infestations are difficult to detect. As a consequence, gall midges are normally detected after they have become a serious problem. Depending on the value of the crop and resources available, management strategies vary from doing nothing to extensive, time-consuming scouting and scheduled spraying. An efficient and user-friendly monitoring system would in many cases improve the situation. Pheromone traps can be a sensitive monitoring tool for detection, timing of treatments, monitoring of population trends etc, and over the last years the number of chemical identifications of gall midge sex pheromones have accumulated. The pheromone identification process for three gall midge species will be presented and possibilities for practical application will be discussed.