



FarmSense uses machine learning to identify and track insects | Photo source Pixabay

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## REAL-TIME INSECT PEST IDENTIFICATION COULD PREVENT DAMAGE TO CROPS



AGRICULTURE & ENERGY

### A new sensor offers farmers the ability to identify insect pests in real time, potentially saving billions

**Spotted:** According to the US Department of Agriculture, insect pests cause more than **\$100 billion** in damages to agriculture each year. If pests are not identified quickly, before they get out of control, it can be difficult to use the appropriate pest control measures. Enter California-based FarmSense. The agtech startup is using machine learning algorithms to identify and track insects in real time.

To develop their latest sensor FarmSense’s founders Eamonn Keogh and Dr. Shailendra Singh, were inspired by Cold War espionage. The FlightSensor uses lasers to pick up vibrations in light, in much the same way as Russian spies would use lasers pointed at glass window panes to pick up on vibrations caused by people’s voices.

The sensor—called ‘FlightSensor’—uses attractants to draw insects into a tunnel containing a light source, where an optical sensor measures how much light is occluded by the insect’s flight. That data is then turned into audio and analysed by machine learning algorithms to identify specific insect species. Farmers can then use this information to target pest management measures such as insecticide or biocontrols. This precision approach reduces the amount of pesticide that needs to be used, which is both good for the environment and saves farmers money.

One of the key benefits of the FlightSensor is that it works in real-time. This means that farmers can react quickly to infestations of pests – some of which live for only a few days.

“The quality of the signal is so beautifully clear and it’s so deaf to the ambient sounds normally heard in the field,” Keogh [explains](#). “It’s essentially a different modality to hear the insect, but when you put on headphones and listen to the audio clip from the sensor, it sounds just like a mosquito or a bee flying around.”

FarmSense is just one of a many agtech startups working to increase yields while decreasing costs. Recent innovations include modified plants that [release pheromones](#) to keep pests away and an [organic fungicide](#) designed to be delivered by bee.

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### **Takeaway:**

For farmers, real-time information on impending insect infestations could allow potential problems to be dealt with before they cause expensive damage. FarmSense claims this will empower farmers in remote rural areas, who are disproportionately affected by infestations according to the company. The system will allow these farmers to better manage risk and make better decisions on where and when to spend limited funds, especially if the sensor tech was paired with insurance. However, the FarmSense is currently proposing to charge a subscription fee of \$300 per sensor per season – a hefty price for those with limited means. However, the sensor might also prove useful in tracking and spreading critical information about disease-carrying insects, like mosquitoes.