

# Fumigants & Pheromones

## Insects Limited, Inc.



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## SightTrap Remote Pheromone Monitoring Working within a Cave System

In parts of the Midwest, limestone was mined in the late 1800s and early 1900s and this excavation left behind an extensive network of caves. In the 1950's, investors started finding ways to utilize the abandoned underground space and decided to create leasable warehouse space. Today, some of these facilities are massive in scale. One particular cave system used for storage consists of 55,000,000 square feet of space with 6,000,000 square feet of leasable space and an additional 8,000,000 square feet leasable space available in the future. The consistent, cool temperature and humidity year-round in these caves provide good storage conditions for all kinds of items. Dried food goods, seed, Ready-to-Eat (MREs), tires, cave-aged cheese, USPS collection of rare stamps, Hollywood movie reels, mushroom farming, crude oil stockpiling, and vehicles are among some of the items stored in these underground caves.

Even in a cave 150 feet below the surface of the earth, pests can still find their way into underground storages through inbound materials trucked in one load at a time. In order to monitor this underground space for Indian meal moth activity, Insects Limited helped Fumigation Service and Supply install their remote pheromone monitoring system called [SightTrap](#) at one of these facilities used to store large quantities of crop seeds. When old Crop seeds that go unplanted by the farmer after the planting season are returned to and stored by the seed manufacturer. This returned seed notoriously has insect pest activity in it from the farmer's barn and a good IPM program will monitor this seed to allow for early detection and treatment.



A [SightTrap](#) remote pheromone monitor is hung near to seed storage in a cave.



*A vast labyrinth of carved out tunnels offers millions of square feet of storage space in caves in the Midwest.*

Conventionally, one would think that the task of installing an Internet-of-Things (IoT) device in an underground bunker may be impossible, but using cutting-edge communication technologies, it was found that installing SightTraps in the cave was much easier

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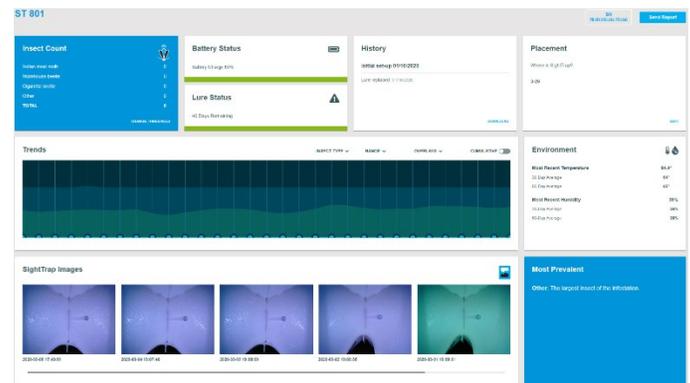
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than many other remote monitoring devices. SightTraps communicate through Wi-Fi where many other remote monitoring devices communicate through cellular connection. In a cave 150 feet below the surface, cellular was not an option and a boosted wireless internet signal was the only source available to communicate to the outside world. The great news is that if remote pheromone SightTraps can be installed deep within the earth, they are even easier to install in vast above-ground warehouses. Many commercial food, seed and grain facilities incorporate concrete or steel building materials that block or greatly reduce cellular service. Remote monitoring in these facilities can also be difficult when using devices that communicate through cellular connection. Concerning the [SightTrap](#), nearly all commercial facilities have existing Wi-Fi throughout their facilities and boosting the Wi-Fi signal to the remote corners of these warehouses gives complete internet coverage to these devices. Connecting remote monitoring devices via Wi-Fi can provide a stronger and more consistent signal for the devices to communicate. When thinking of IoT devices, we often look up towards the satellites that carry the signals to the internet, but don't forget to also look down, way down, as there is a lot going on beneath our feet as well.



*SightTrap data can be accessed online at [www.ForesightIPM.com](http://www.ForesightIPM.com) or from the convenience of your phone with the ForesightIPM app.*

**Gain the SightTrap Advantage**