

Brown marmorated stink bug monitoring trap and lure showcased

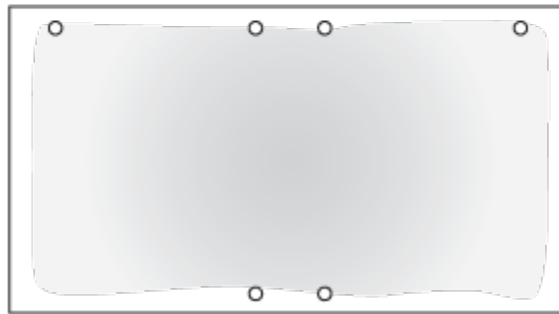
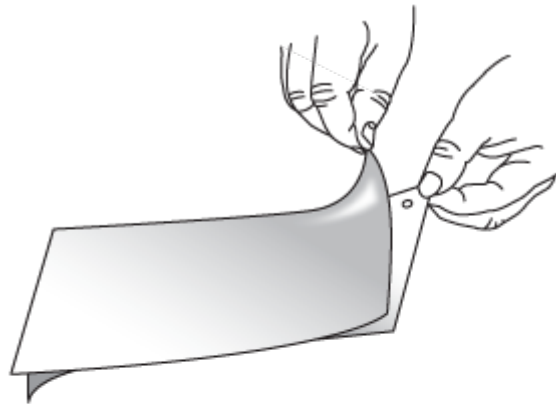
BROWN MARMORATED STINK BUG MONITORING PRODUCTS SHOWCASED IN WEST COAST NUT MAGAZINE

Monitoring is an important step for detection of Brown marmorated stink bug and sticky traps are a good monitoring tool. Trécé's PHEROCON® Stink Bug STKY Dual Panel Trap & Stink Bug Dual Lures were showcased in West Coast Nut's recent article titled "Plant Bug Damage on the Rise: Tips for Combatting this Pest Management Challenge". The full article can be seen in the April 2024 issue starting on page 44, with Trécé's trap and lure pictured on page 45 or on the West Coast Nut website [HERE](#).

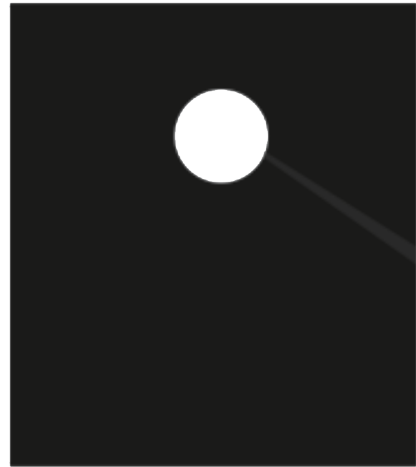
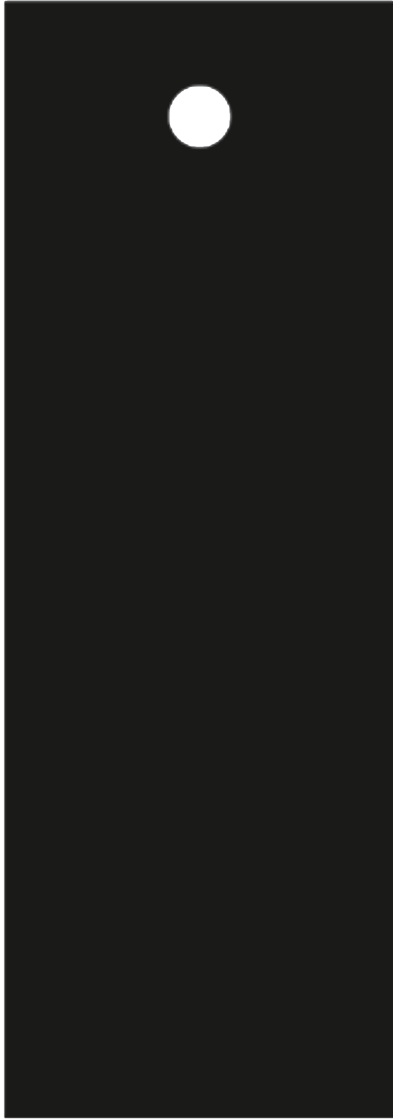
More information regarding BMSB monitoring may be seen on the [PHEROCON® BMSB IPM Partner® Guidelines for Use](#).



BROWN MARMORATED STINK BUG (BMSB)



PHEROCON® STINK BUG STKY DUAL PANEL TRAP



PHEROCON® STINK BUG DUAL LURES

© 2024, Trécé Inc., Adair, OK USA • ® is a registered trademark and TM is a trademark of Trécé Inc., Adair, OK 74330 USA

What's So Cool About Manufacturing? – Trécé, RSU Public TV, & Adair High School students join forces for local area video contest

RSU Public TV has partnered with local area schools in Northeast Oklahoma – Adair, Pryor, Salina, Locust Grover, and Inola to create videos that highlight manufacturing companies and potential future careers. Student film makers select and partner with manufacturing companies in the area who allow the students access into the manufacturing facilities to experience what a career in manufacturing is like.

The program is dedicated to changing the perceptions and attitudes about manufacturing jobs and careers by showcasing real people to provide visual representations of manufacturing employees, their jobs, and their careers.

The manufacturing companies, like Trécé and others from the area, are selected by the student groups as their partner company. The companies allowed the students into their spaces to interview employees, to see their production process, and get a good idea of what it would be like to get a job at that facility or in the industry.

Each group of students uses their imagination and video skills to create a short video and tell the story of what it is like working in the high-tech manufacturing industry, in turn creating potential future employees of the manufacturing industry.

Adair High School students chose to partner with Trécé to

create their video for the 2022 contest and created a first-place award winning video!

For privacy reasons YouTube needs your permission to be loaded. For more details, please see our [Privacy Policy](#).

[I Accept](#)

USAID Engages Private Sector to Protect Georgia's Crops from Pests

Watch the full USAID Video [HERE](#).

WB II Probe Trap: Reduced Length and Efficacy on Trap Catches

WB II Probe Trap: Reduced Length and Efficacy on Trap Catches

Charles E. Konemann

Abstract

The demand on secure non-infested grain products has increasingly grown as the world's population has continued to increase. Historically, the WB II probe trap has demonstrated its reliability as a useful tool in the monitoring of stored product pests.

Recently, our research lab performed replicated comparisons between our standard 13.125-inch STORGARD WB PROBE II grain

insect monitoring trap against three reduced trap lengths using three stored product insect species over five sampling periods. Results showed that the reduced tube lengths of 6.5-, 8.5- and 10.5 inches, on average, caught statistically similar numbers of all three species combined compared to the standard length 13.125-inch probe trap.

On average 8.5-inch traps caught more insects overall than all other lengths. Thereby showing that while shorter, the reduced lengths provided optimum efficacy in trap catches, maintaining the WB II's reliability as a useful IPM tool for stored grain insect monitoring.

Introduction

According to the Food Agriculture Organization of the United Nations (FAO) rice, wheat, and corn are the top three food staples of the world, especially in developing countries (FAO, 2021). The United States produced approximately 1.86 billion bushels of wheat in 2020 worth 9.32 billion U. S. dollars (NASS, 2020; Statistica, 2021). IPM tools are a must for monitoring of stored product pests can be performed efficiently and accurately.

Pitfall style traps have previously been shown to be excellent at determining population densities of stored product insects, including *Rhyzopertha dominica*, *Sitophilus granaries*, *Oryzaephilus surinamensis*, and *Tribolium castaneum* in a variety of grain storage facilities across Europe (Aulicky et al. 2016).

Historically, the WB II probe trap has proven to be very reliable for the detection of stored product pests, primarily beetles (Toews et al. 2005). The WB II probe trap was previously shown to monitor for granary weevils (*Sitophilus granarius*) during the summertime months in the United Kingdom (Wakefield and Cogan 1991). Whereas Trematerra, (1998) noted that WB II probe trap catches of *Sitophilus oryzae*, *T.*

castaneum and *O. surinamensis* were similar in wheat and maize. Similarly, Toews et al, (2003), demonstrated that the WB II probe trap caught as many *Cryptolestes ferruginus* when compared with similar types of probe traps. In fact, previously it had been shown that the WB II probe trap is effective in trapping *Rhyzopertha dominica*, *Ahasverus advena*, *Typhaea stercorea* along with *Cryptolestes ferrugineus* (Hagstrum 2001).

Primarily due to increasing oil prices, production costs have also increased. we examined the idea of reducing the size of the WB II to reduce the overall cost of production allowing us to continue to sell a reliable IPM product at a reasonable price.

Materials and Methods

Probe Trap Sizes: Three shortened versions of our WB II probe traps measuring 6.5-, 8.5-, 10.5-inches and compared those with our standard length of 13.125-inches (Fig. 1). This test was performed to see if length had any overall effect, whether negative or positive, on trap catches over-time at 24-, 48-, 72-, 96-, and 120-hours.

Test commodity: USDA certified non-GMO hard red winter wheat purchased from 4-Generations farms near Alva, Oklahoma. Upon receiving the wheat, it was cleaned by using ASTM certified testing sieves; #10, #14, #18, and #20. This was done to ensure that no insects were present in the wheat before the addition of laboratory-reared species.

Bioassay arenas: This test utilized four 7-gallon sealable buckets filled with organic (certified that no pesticide had been applied) hard red winter wheat to within approximately three-inches from the top of each bucket (Fig. 2). This was done to fully insert the longest of the probes to just below the surface of the wheat.

Insects: Three species of laboratory-reared stored product beetles: Rice weevil (RW) (*Sitophilus oryzae*), red flour beetle (RFB) (*Tribolium castaneum*), and Saw-toothed grain beetle (STGB) (*Oryzaephilus surinamensis*) were utilized.

Procedure: One hundred beetles from each species consisting of mixed-sex were added to each of the four buckets 24-hours before insertion of the probe traps to allow the beetles to disperse in the wheat. Pre-cut versions of the WB II probe trap, along with the standard trap were inserted into the wheat to just below the wheat's surface. Trap catches were evaluated at 24-, 48-, 96-, and 120-hours. Dead insects found in the traps were discarded and replaced with live insects to maintain 100 individuals of each species at the time of evaluation.

Statistics: The mean number of insects caught was generated using Microsoft Excel. The data was recorded for each individual species and all three species combined.

Results and Discussion

Interestingly, our results show that after 120-hours in the wheat, our 8.5-inch version of the WB II caught slightly more of all three species combined when compared with longer versions including the 13.125-inch trap. The much shorter 6.5-inch trap had the least of all total insects caught (Fig. 3).

When evaluated according to species, after 120 hours 6.5-, 8.5- and 13.125-inch probe traps caught an equal number of RW. (fig. 4). Trap captures of STBG in the 8.5-inch WB II were comparable to the other three sizes at each sampling time, however, the 8.5inch caught more STGB at 24-,48-, and 96-hrs than the longer trap versions (Fig. 5). Interestingly, RFB showed an almost linear increase in the number of beetles caught in all trap sizes with the 8.5-inch probe trap catching the most at each sampling (Fig. 6).

Our research showed that reducing the size of the WB II did not have a negative effect on trap catches. the 8.5-inch version of the WB II was comparable to all other trap sizes in trapping all three beetle species.

The reduction in size and the ability to monitor beetle populations maintain the WB II ability to be a reliable monitoring tool. Further research is being developed to test if the depth at which the 8.5-inch probe is inserted in the grain has an impact on the number of beetles caught.

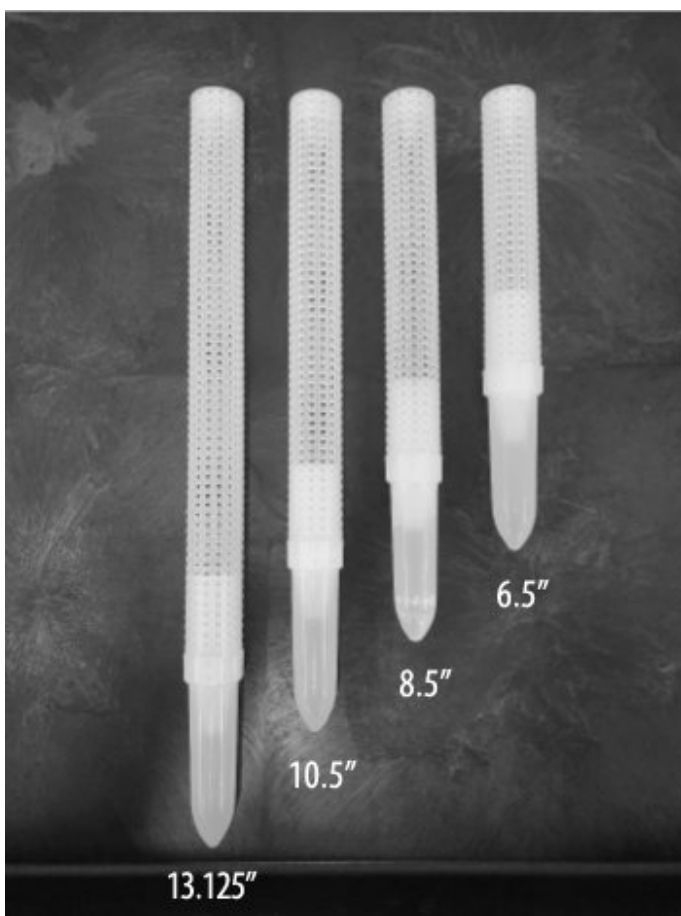


Figure 1. Variants of the WB II probe trap



Figure 2. Probe trap inserted into wheat

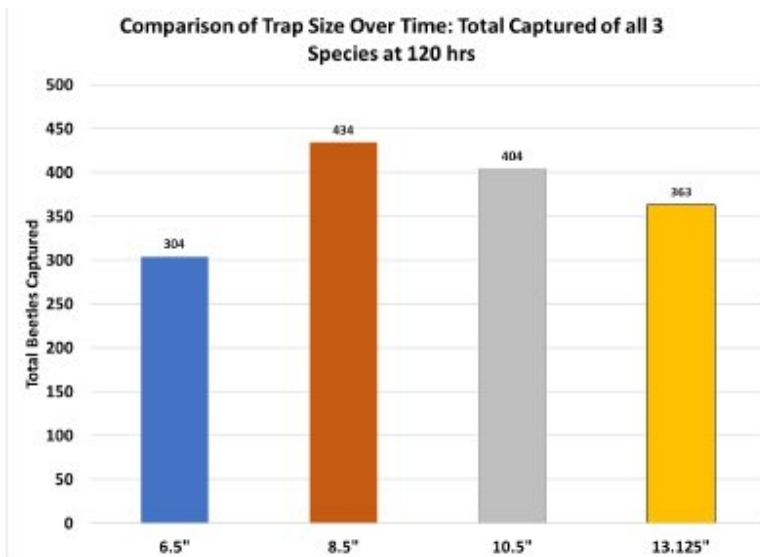
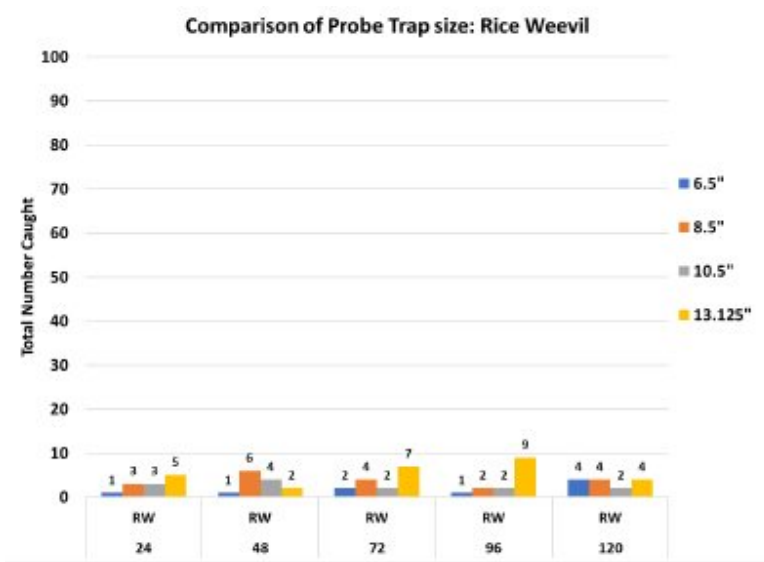
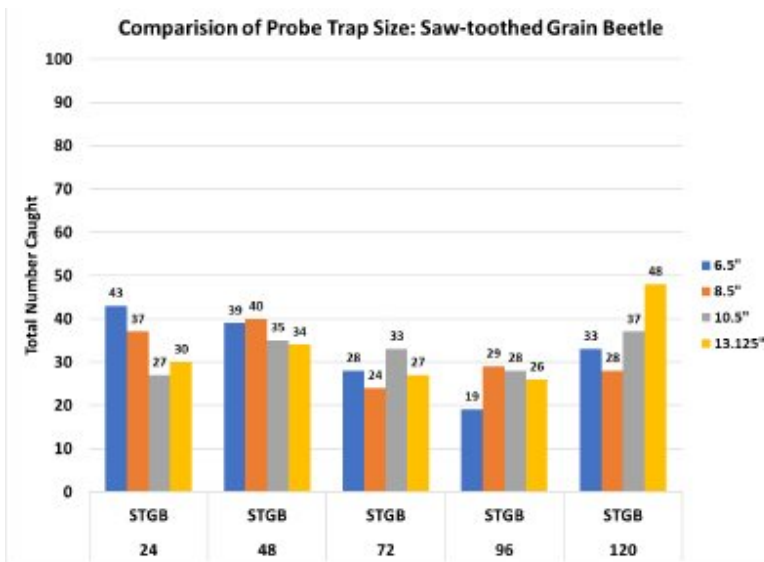


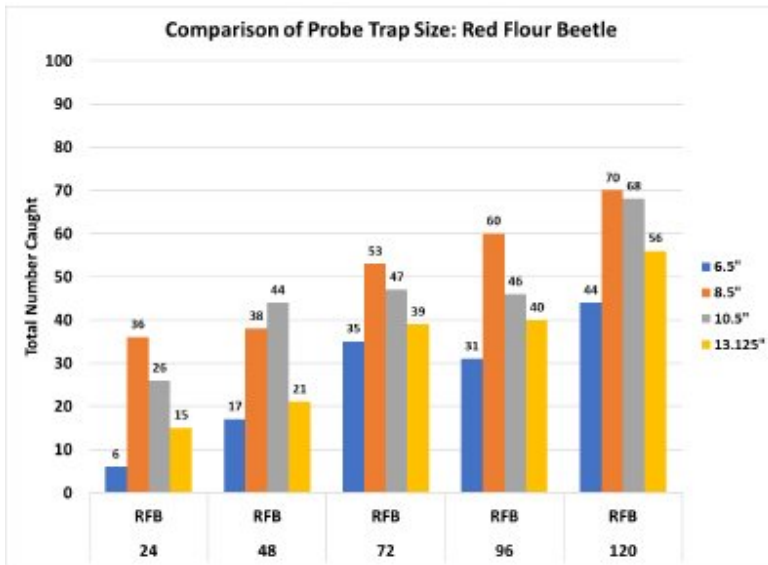
Figure 3. Total trap catches of all four species in each trap size.



Figures 4. Rice Weevils trapped over time.



Figures 5. Saw-toothed grain beetle trapped over time.



Figures 6. Red flour beetle trapped over time.

References Sited

Aulicky, R., Stejskal, V., Cucerova, Z., and Trematerra, P. 2016. Trapping of internal and external feeding stored grain beetle pests with two types of pitfall traps: A two-year study. *Plant Protection Science*, 1(52): 45-53.

Fleurat-Lessard, F., 2011. Monitoring insect pest populations in grain storage: the European context. *Stewart Postharvest Rev*, 3(4).

Food Agriculture Organization of the United Nations, 2021. <http://www.fao.org/3/u8480e/u8480e07.htm>

Hagstrum, D. W. 2001. Immigration of insects into bins storing newly harvested wheat on Kansas farms. *Journal of Stored Product Research*, 37: 221-229.

Nation Geographic 2021. <https://www.nationalgeographic.org/encyclopedia/food-staple/>

Statistica, 2021. <https://www.statista.com/statistics/190362/total-us-wheat-production-value-from-2000/>

Toews, M. D., Phillips, T. W. and Payton, M. E. 2005. Estimating populations of grain beetles using probe traps in wheat-filled concrete silos. *Environmental Entomology*, 34(3): 712-718.

Toews, M. D., Phillips, T. W. and Shuman, D. 2003. Electronic and manual monitoring of *Cryptolestes ferrugineus* (Coleoptera: Laemophloeidae) in stored wheat. *Journal of Stored Products*, 39: 541-554.

Trematerra, P. 1998. Capture of stored-grain Coleoptera with WB Probe II Trap: influence of grain type. *Anz. Schadlingskde., Pflanzenschutz, Umweltschutz* 71: 135-137

USDA, NASS, 2021.
<https://downloads.usda.library.cornell.edu/usda-esmis/files/k35694332/348509606/d791t862r/cpvl0221.pdf>

USDA, World Agriculture Supply and Demand Estimates, 2021. WASDE-616, Wheat.

Wakefield, M. E., and Cogan, P. M. 1999. The use of a managed bulk grain for the evaluation of PC, Pitfall beaker, Insect probe and WB II Probe traps for monitoring *Sitophilus granaries* during the winter and summer in the UK. *Journal of Stored Product Research*, 35(4): 329-338.

Oklahoma Ag Company Engaging in Azerbaijani Market

OKLAHOMA CITY– Trécé, a small, Adair, Oklahoma-based company that is currently the leading manufacturer and supplier of insect monitoring systems for agriculture in the United States

is continuing to grow its worldwide footprint by working to develop a market and export its products to Azerbaijan. Trécé [pronounced tray-say] currently sells products already in all 50 U.S. states and 51 other countries around the world.

“Trécé introduces solutions for Azerbaijani farmers to fight insects in host crops through pest management approach,” said Natig Bakhishov, United States-Azerbaijan Chamber of Commerce Executive Director. “Trécé’s mating disruption technology which is widely utilized in over 50 countries globally reduces reliance on pesticides and helps to save beneficial insects and the environment. Lesser pesticides in crops mean safer and healthier food on our plates.”

This partnership was cultivated after the 2019 Oklahoma-Azerbaijan Agriculture Forum, held in Oklahoma City. Trécé’s most recent trip followed a July trade mission to Azerbaijan by Governor Kevin Stitt, Secretary of Agriculture Blayne Arthur, Secretary of Commerce Scott Mueller and other members of the Governor’s staff.

“I am pleased to see Trécé leading the way in expanding our partnership with Azerbaijan,” said Gov. Stitt. “Trécé is an example of how Oklahoma companies have the products and expertise to improve the lives of people in Azerbaijan and all over the world.”

Bill Lingren, founder and CEO of Trécé, said their mission in Azerbaijan is to produce long-term economic and political benefits to their company, their state and their nation by aiding the Azeri agriculturists in adopting our solutions for Integrated Pest Management programs in certain of their key crops.

“Our overall main goal is to introduce the technologies that Trécé currently offers for pest-management world-wide, but has not been introduced to Azerbaijan yet,” said Danielle Kirkpatrick, Global Technical Support Coordinator for Trécé.

“From my last visit, local growers were asking me how quickly we can get this product from Oklahoma to them. Azerbaijani producers are excited to get these products as quickly as they can.”

Additionally, Trécé is working with Azerbaijan State Agriculture University and Oklahoma State University through their Memorandum of Agreement for a Dual Master’s Program. They are all working together to craft an internship for students, allowing for knowledge of pesticide management to be passed to the next generation of producers.

Trécé expanding, and economic development wheels are spinning

Trécé Inc., a 20-year old Adair company that ships environmentally-friendly insect control products to 50 countries around the world, is planning construction of a new building to add at least 12 employees – and Mayes County, Grand Gateway, Rural Water District No. 5, State of Oklahoma and the federal government are in line to help make it happen.

Mayes County commissioners last Monday agreed to sponsor Mayes County Rural Water District No. 5’s request for a \$395,000 CDGB/EDIF grant from the federal government to fund the majority cost of constructing a new eight-inch, 2.5-mile water line to serve the new building.

CDBG/EDIF is an abbreviation for Community Development Block Grant for Economic Development Infrastructure Financing.

Grand Gateway is writing the grant, Mayes County is the sponsor, RWD-5 will manage construction, and the grant request must be approved by the state Department of Commerce before federal funds are released.

RWD-5 is committed to provide \$50,000 of water line construction costs in participation with the \$395,000 in federal funds, and is expected to apply for a CDBG grant for that amount, also through Grand Gateway.

Trécé, located on State Highway 28 just west of Will Rogers Turnpike, is a customer-focused, market-driven organization that develops, manufactures and markets insect pheromone and kairomone-based products designed to respond to customer needs, protect food production and preserve the environment.

Bill Lingren, founder of Trécé, grew up in Adair, and established his company headquarters here where Trécé's own chemists and scientists conduct research and development, create and manage the production of its pheromone formulations and sophisticated equipment, and oversee all system design and technical matters.

Lingren's other investments in the Adair community include donation of land for the construction of a new fire station for a local volunteer fire department, and the creation of a scholarship program that provides annual scholarships to students at Adair High.

The Trécé product catalog currently contains more than 100 species-specific, pheromone-based kits, attractants and lures, and a full line of trap models designed for a wide variety of flying and crawling insect pests that attack standing and stored crops.

These products are marketed under the internationally respected [PHEROCON®](#), [CIDETRAK®](#), and [STORGARD®](#) brands.

Trécé collaborates closely with universities, government

agencies and business associates around the world in an ongoing effort to refine and advance our insect attractant, monitoring and storage system technologies.

The Trécé-related business before county commissioners created an additional page of agenda because the federal government is potentially involved in this project, and that means I's get dotted and T's get crossed.

5 Questions with James Miller, ACE

The Indian meal moth is the #1 stored product pest worldwide. Its control and prevention are well known but underutilized due to varying economics. Now Trécé has developed a first-ever microencapsulated sprayable mating disruption product, which is soon to be available industry-wide. Here James Miller, ACE, Market Manager, PCO with Trécé Incorporated, reviews questions regarding the application of CIDETRAK® IMM MEC™ sprayable mating disruptant for IMM and other species. [READ MORE...](#)

Leveraging Public-Private Sector Partnerships to

Protect Georgian Hazelnut Crop

In Georgia, CNFA works with Trécé Inc. – a U.S. company based in Oklahoma that produces pheromone traps and lures – and other public and private sector partners to help monitor the Brown Marmorated Stink Bug (BMSB) pest which threatens hazelnut and other crops across the country.

View video on partnership [here](#).

Establishing Effective Partnerships to Control the Brown Marmorated Stink Bug (BMSB)

In Georgia, hazelnuts and other crops are under threat by the Brown Marmorated Stink Bug (BMSB). Since 2016, USAID and CNFA have worked together to support the BMSB efforts of the Government of Georgia through the Restoring Efficiency to Agriculture Program (REAP), and today continue working together through the USAID Agriculture Program and the Georgia Hazelnut Improvement Project (G-HIP).

View video on partnership [here](#).

Establishing Effective Partnerships to Control BMSB

Developed by Cultivating New Frontiers in Agriculture (CNFA) and Trece Inc.

Since 2016, the Republic of Georgia's hazelnut sector has been under attack by an infestation of brown marmorated stinkbugs (BMSB). Other key field and orchard crops in the country-including grapes, corn, peaches, apples, and vegetables-are also under threat of infestation. To learn more about how Trece has been at the forefront of this effort, download our "[Establishing Effective Partnerships to Control BMSB](#)" white paper below.

[White Paper](#)