2025

FDACS Formosan Termite Alate Trapping Report for Leon and Wakulla Counties

Photo courtesy: Dr. Nan-Yao Su

Johanna Welch, DPM

Contents

Purpose

The Formosan termite (*Coptotermes formosanus*) came into the Florida Panhandle about 60 years ago on infested wood packing materials in ships coming from Asia after WWII. Ever since, they have spread rapidly throughout the Southeastern US and thrive in the region's high temperatures and humidity. Formosan termites cause billions of dollars of damage each year in the US alone. This project is designed to trap Formosan termite alates throughout Leon and Wakulla counties during their major swarm season in May and June. Trapped alates are counted on a weekly basis to determine peak swarming weeks and correlated with local weather data. The presence or absence of alates is also documented in key areas within these counties. This data can aid citizens on Formosan termite presence and activity level in their municipalities.

Materials and Methods

The simple trap consists of a sticky card in proximity to a bright, reliable light source. The white, gridded 7" by 4" sticky card is zip tied to a six-foot, plastic coated metal stake and placed under strong, predetermined streetlights. These streetlights are chosen for brightness, location out of the way of human activity, and lack of competing light sources. Traps are checked weekly during the months of April to July. Alates are identified using a microscope when needed, counted and recorded in an Excel worksheet along with pertinent local weather data obtained from Weather Underground: https://www.wunderground.com/history/.

Figure 1: Formosan termite alate trap

Eleven trap locations were selected, each representing a key area within the counties. Environmental Science students: D'Elia Bonilla, Charlize Taffe, Elizabeth Earhart, Rylee Franklin, Kyra Miller, Kennedi Leary, Christy Romulus, Alyssa Heard, Maya Darville, and Brianna Josue under the leadership of Professor Thomas White Jr. from Florida Agricultural and Mechanical University (FAMU); Ty'Misha Griffin of Godby High School and Isaiah McMillon of Lincoln High School checked and maintained the traps.

Results

Out of the total eleven traps, five were positive for Formosan termite alates throughout Leon and Wakulla counties (see Figure 2).

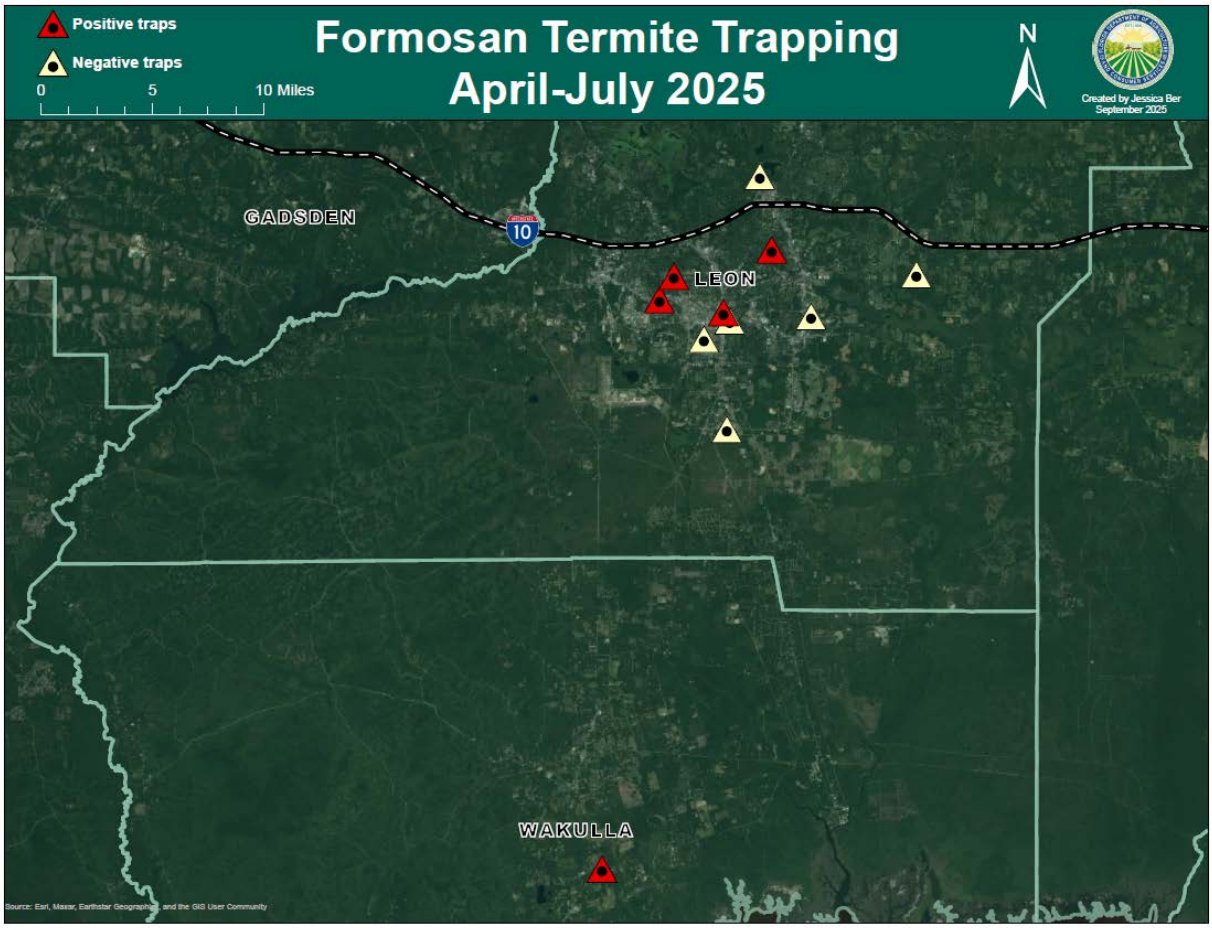
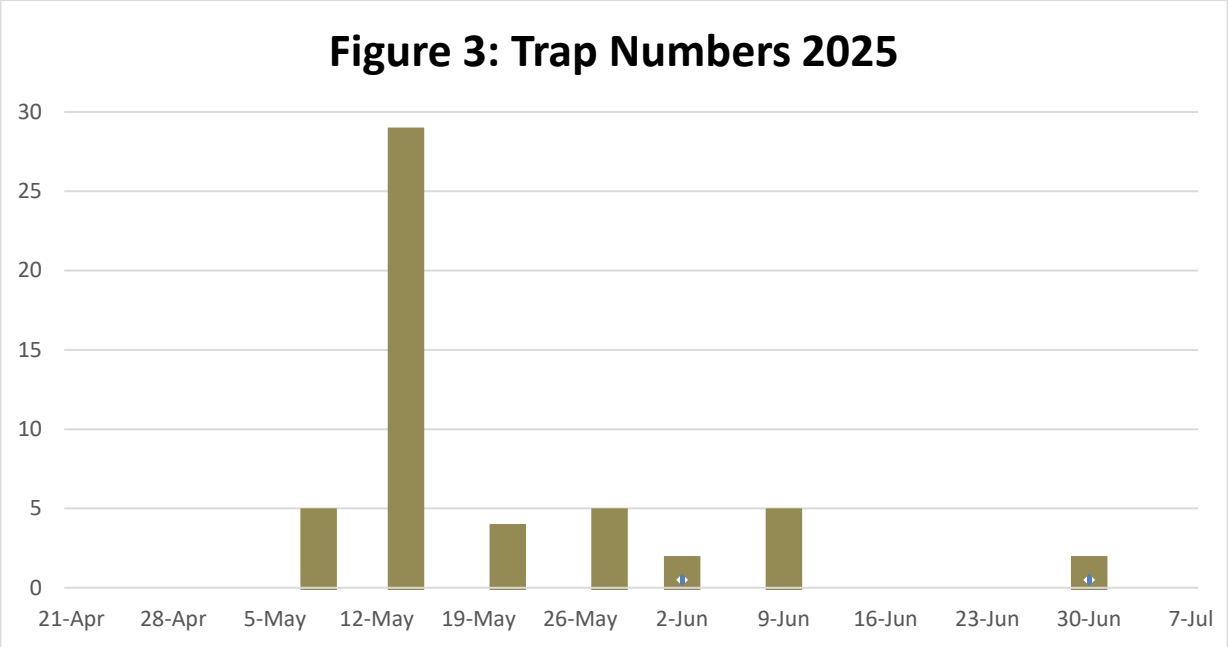
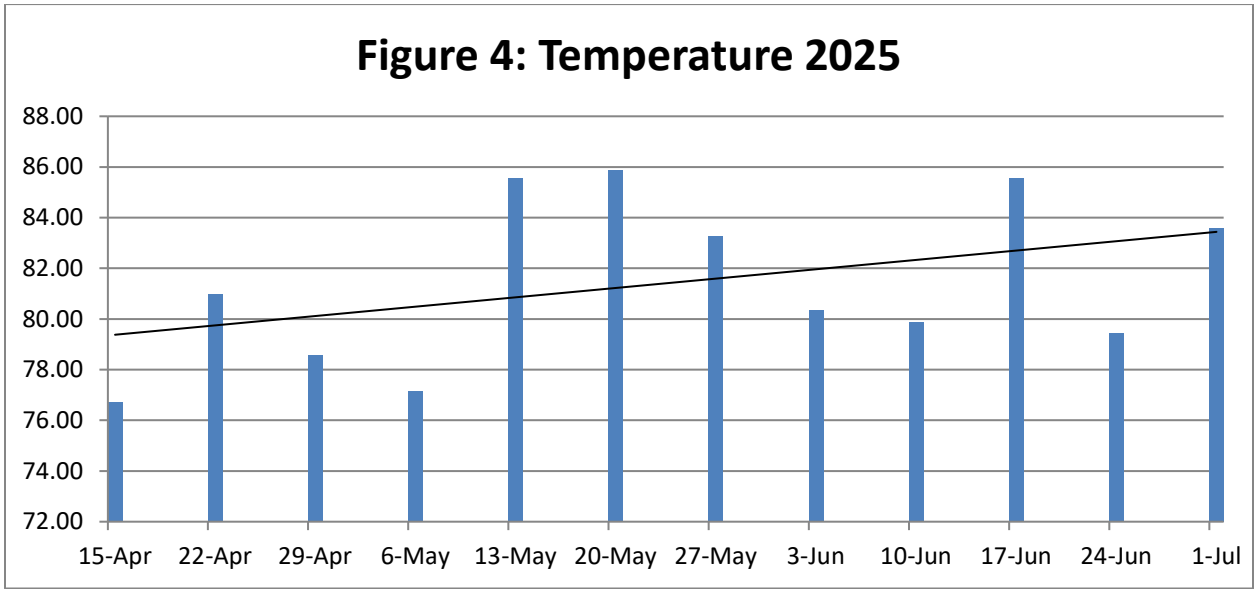


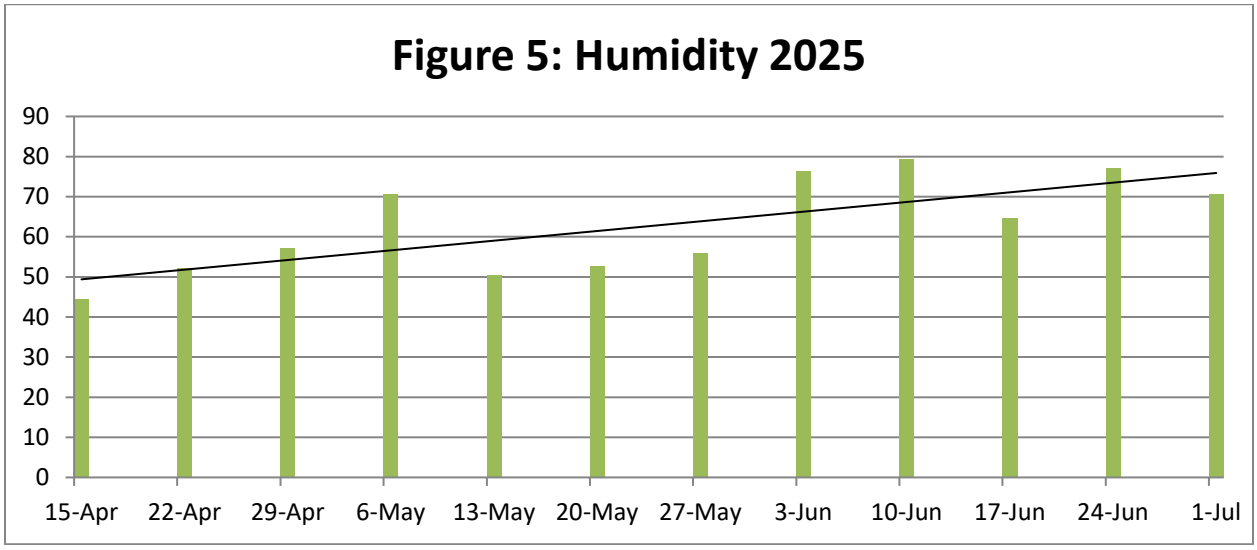
Figure 2. Map of positive traps.

Formosan alates were caught during 7 of the 12 weeks of trapping. Alate numbers from all 11 traps were counted and represented in Figure 3 below. Swarming began at the beginning of May with the largest spike in numbers during the second week of May.

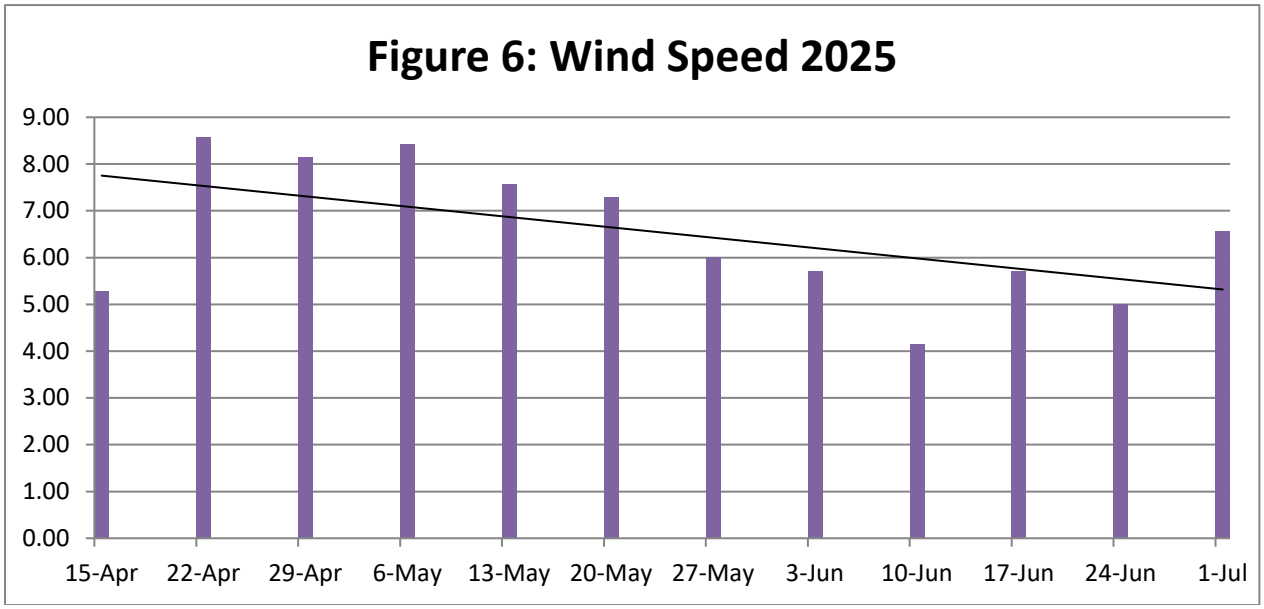


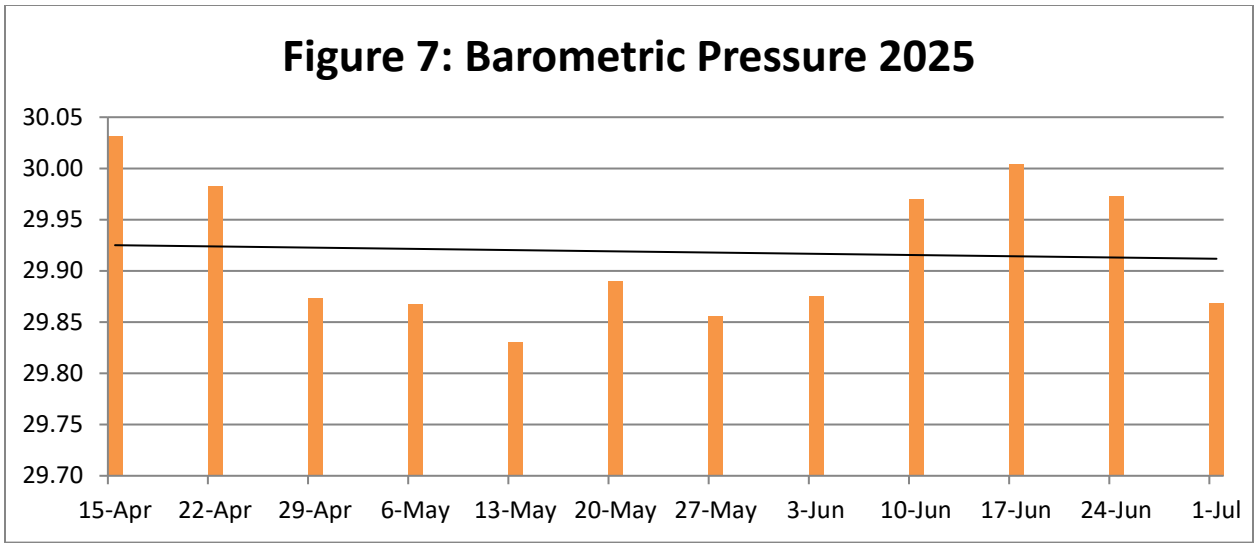
Weather data was collected during the peak alate swarming time of 8 pm and averaged for each week. As temperature and humidity increased throughout the trapping weeks, Formosan alate counts increased as well. Optimal temperatures this year for the peak in flights was in the low to mid 80°F range with humidity at or above 60% as indicated in Figures 4 and 5 below.



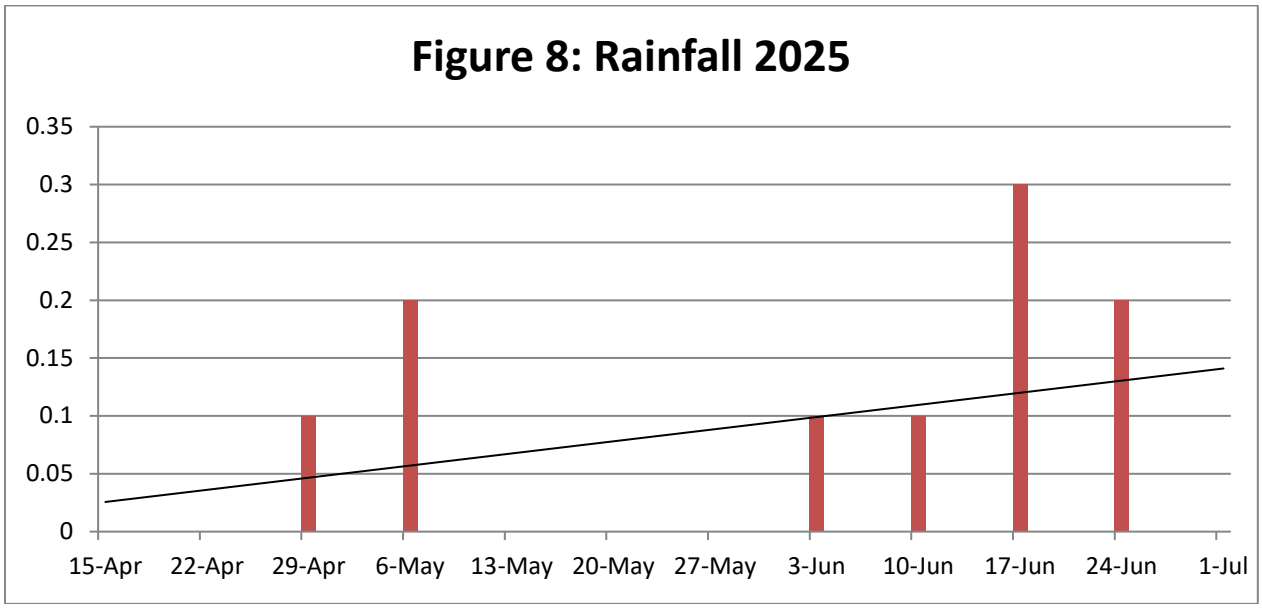


Wind speed was consistently low and barometric pressure stayed constant through time as indicated by Figures 6 and 7 below.





Rainfall was recorded in six of the weeks of the trapping period and increased slightly through time as indicated in Figure 8 below.



Discussion

From this ninth year of trapping, five out of the eleven traps were positive within Leon and Wakulla counties. Seven out of the twelve trapping weeks were documented with swarming activity which is the most ever recorded in the history of this project. The previous record was four weeks of swarming, so this is a significant increase. These results were better than expected since all the local pest control operators that were consulted prior to surveillance agreed that the Formosan termite had only arrived in Leon County approximately 20 years ago. From the trapping results, the initial swarm started in the beginning of May and ended at the end of June.

From the weather data collected, as temperature and humidity increased through April, alate swarming initiated. Swarming occurred in the low 80°F or above range with 60% or above humidity. Barometric pressure stayed constant over time and rainfall was recorded in 6 of the 11 weeks of trapping.

Conclusion

The ninth year of the Formosan alate trapping project was again successful in documenting alate swarming activity in Leon and Wakulla counties. Annual continuation of the project provides a more complete picture of alate swarming activity throughout Leon and surrounding counties, including more fully understanding changes in alate numbers, identifying new areas of activity, and analyzing influences of weather conditions and trap activity in each location over time. This will contribute to increased and more widespread education, a better understanding of the range of Formosan territories throughout the counties, and possibly even a swarm forecasting system for citizen and pest control groups in the Florida Panhandle.

Special Thanks

This success could not have been achieved without the dedication of Professor Thomas White Jr. and the FAMU Environmental Science students: D'Elia Bonilla, Charlize Taffe, Elizabeth Earhart, Rylee Franklin, Kyra Miller, Kennedi Leary, Christy Romulus, Alyssa Heard, Maya Darville, Brianna Josue; Ty'Misha Griffin of Godby High School and Isaiah McMillon of Lincoln High School; as well as Jessica Ber and Marah Clark of FDACS that participated in this project. The partnership between FDACS and FAMU is vital to the project's continued success.