

2020

FDACS Formosan Termite Alate Trapping Report for Leon and Wakulla Counties



Photo courtesy: Dr. Nan-Yao Su

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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 Leon and Wakulla County, FL. 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 street lights. These street lights 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 May 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/>.

Eleven trap locations were selected, each representing a key area within the counties. Jessica Ber (FDACS) and Environmental Science students: L'Ariel Wilson, Quandaris Wilson, D'Elia Bonilla, E'lan Miles and Nyasia Haynes under the leadership of Professor Thomas White from Florida Agricultural and Mechanical University (FAMU) checked and maintained the traps.



Figure 1: Formosan termite alate trap

Results

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

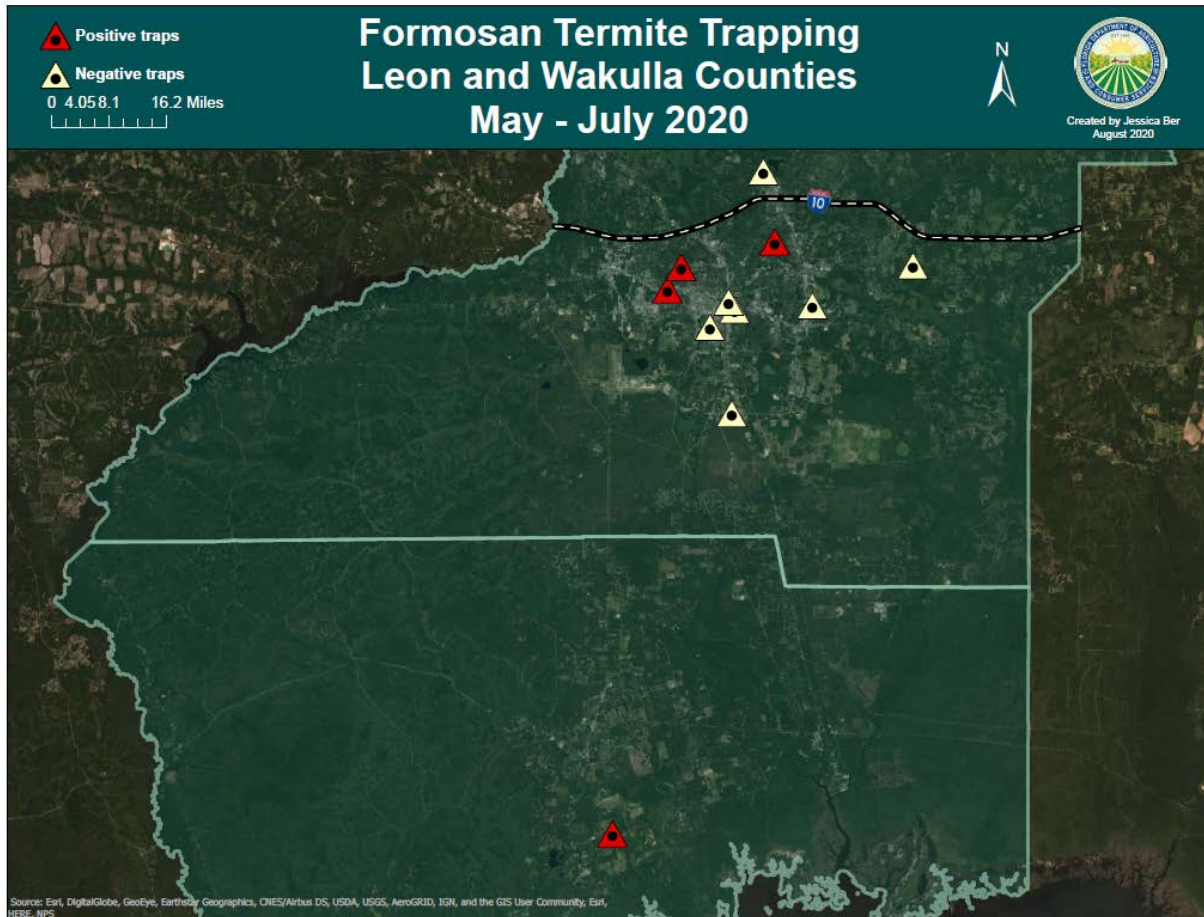
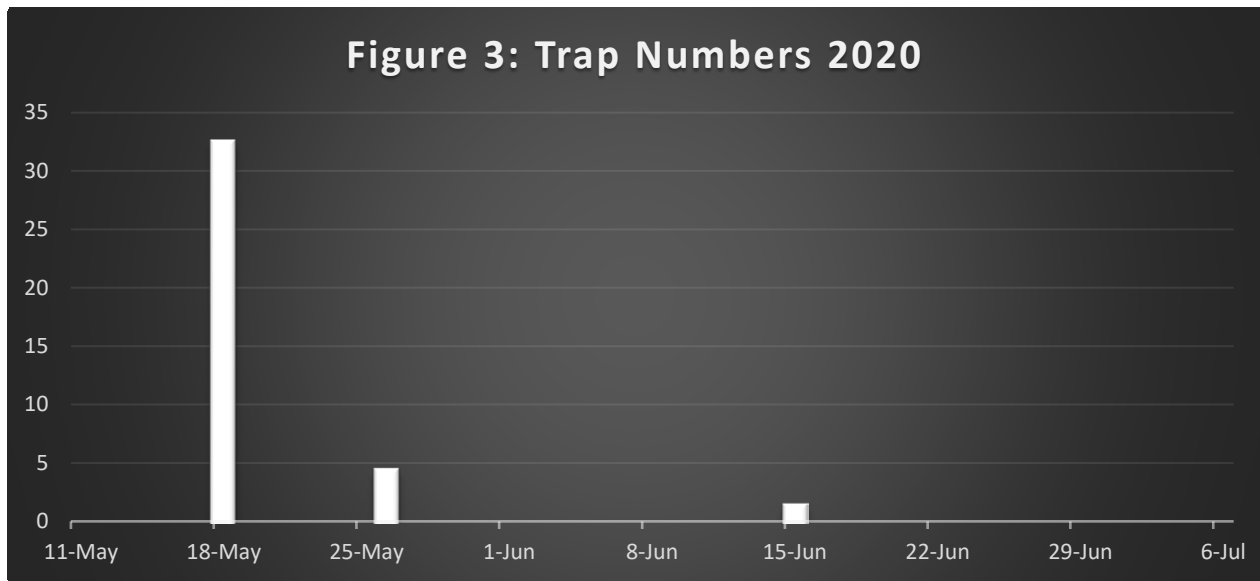
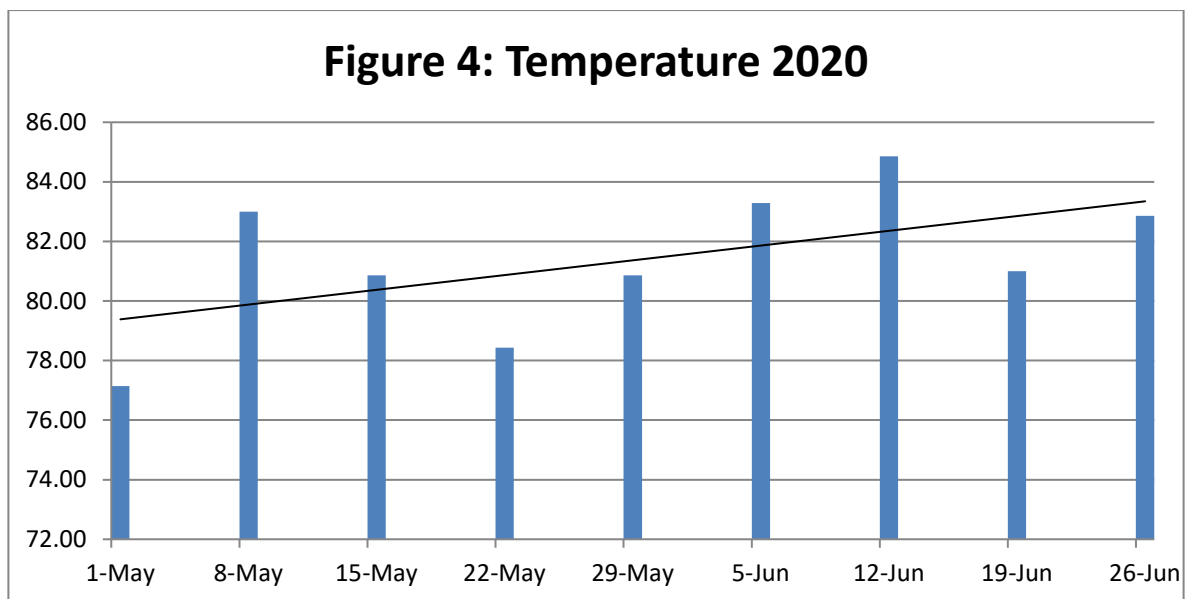


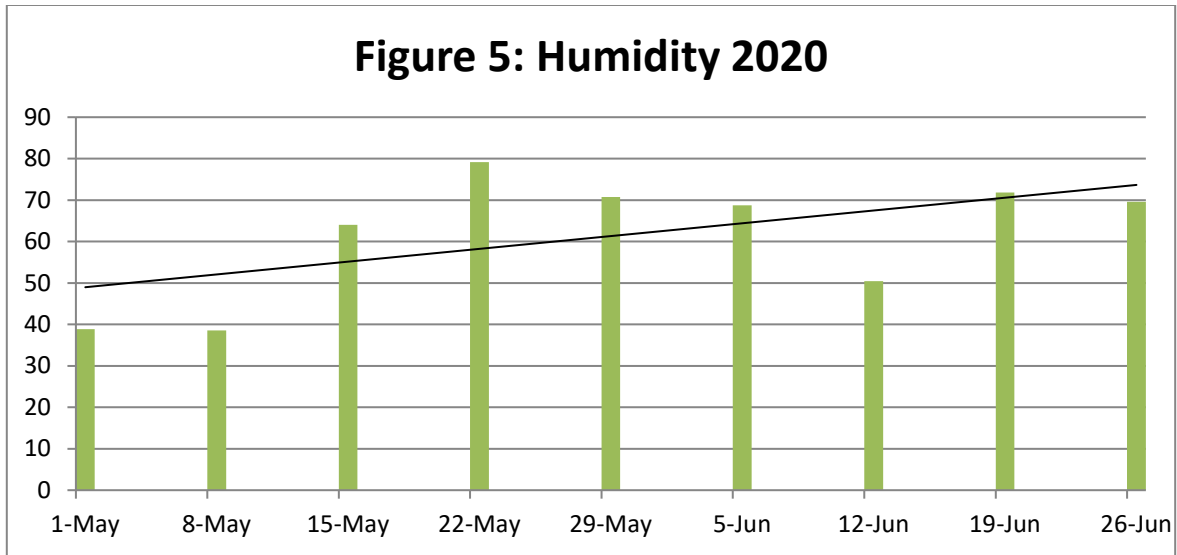
Figure 2. Map of positive traps.

Formosan alates were caught during 3 of the 9 weeks of trapping. Alate numbers from all 11 traps were counted weekly and represented in Figure 3 below. The largest spike in numbers was the first week of swarming: the week of May 18.

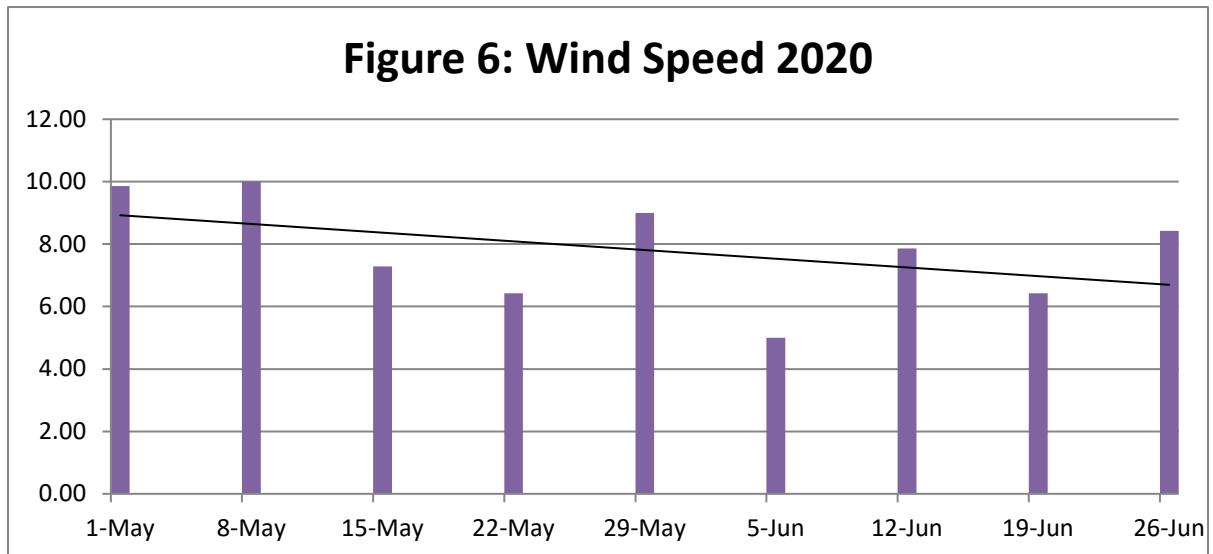


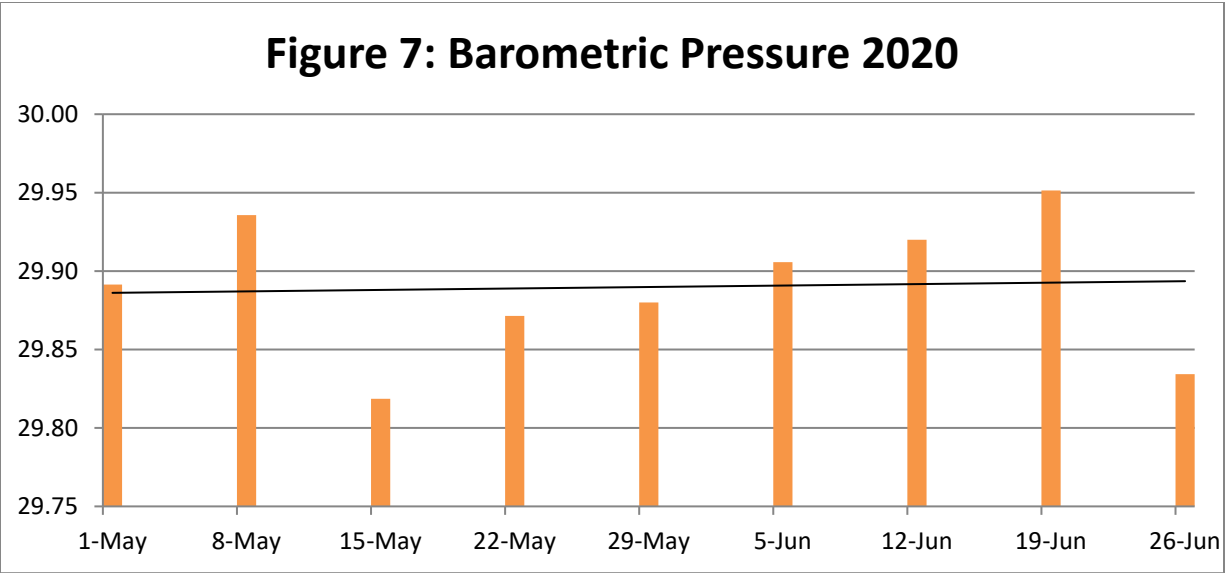
Weather data was collected during the peak alate swarming time of 8 pm and averaged for each week. As temperature and humidity increased throughout the trapping weeks, Formosan alate counts increased as well. Optimal temperatures this year for the peak in flights was in the low 80°F range with humidity at or above 70% as indicated in Figures 4 and 5 below.



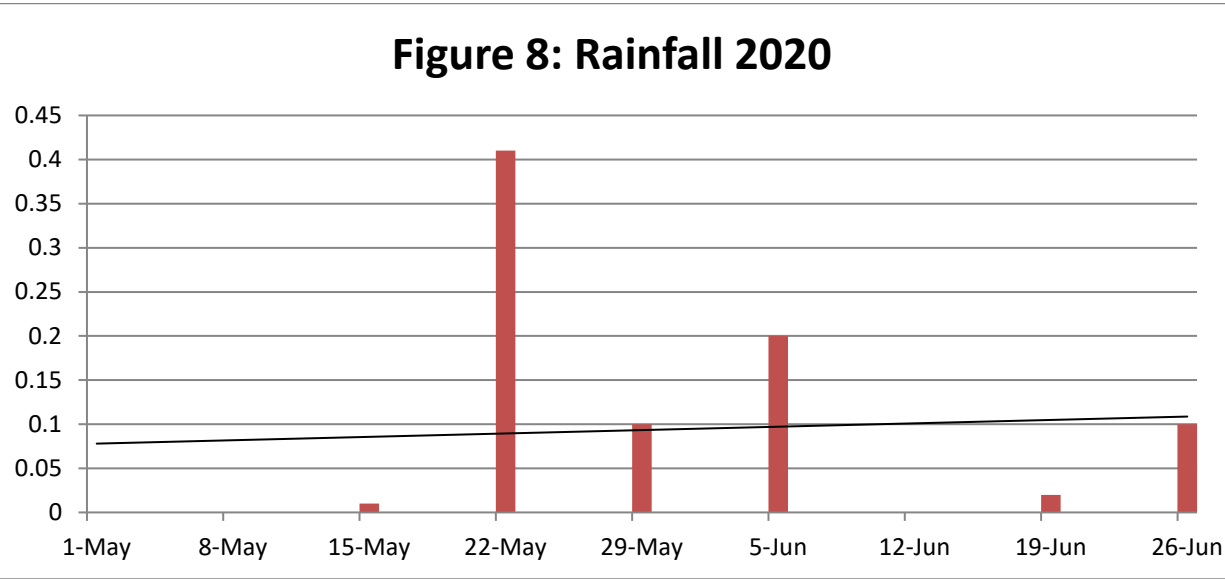


Wind speed was consistently low and decreased slightly through time, and barometric pressure stayed constant through time as indicated by Figures 6 and 7 below.





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



Discussion

From this fourth year of trapping in Leon county, four out of the eleven traps were positive including a never before recorded positive location in Wakulla county. Three out of the nine trapping weeks were documented with swarming activity which was one week more than ever recorded. 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 5 to 10 years ago. From the trapping results, the initial swarm started in the middle of May with two other swarming events at the end of May and in the middle of June.

From the weather data collected, as temperature and humidity increased through May, alate swarming initiated. Swarming occurred in the low 80°F or above range with 70% or above humidity. Barometric pressure stayed very constant over time and rainfall was plentiful and recorded in 6 of the 9 weeks of trapping.

Conclusion

The fourth year of the Formosan alate trapping project in Leon county was again successful in documenting alate swarming activity. Annual continuation of the project provides a more complete picture of alate swarming activity throughout Leon county, 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 Leon county 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 Jessica Ber (FDACS), Professor Thomas White and the FAMU Environmental Science students: L'Ariel Wilson, Quandaris Wilson, D'Elia Bonilla, E'lan Miles and Nyasia Haynes that participated in this project; the partnership between FDACS and FAMU is vital to the project's continued success.