2020-2021 CALIFORNIA LEAFY GREENS RESEARCH PROGRAM
ANNUAL REPORT

Project Title: Area-wide monitoring and management of aphids in Central Coast lettuce

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Abstract:
A substantial portion of the IPM program for lettuce on the Central Coast is focused on the management of aphids. Therefore, an area-wide monitoring effort for aphids will provide quantitative data on the fluctuations of this pest across the region and throughout the growing season. Generating historical data on this pest will position future research to understand the impacts of additional drivers on these fluctuations, including long-term changes in weather conditions. Here, we report on the aphid monitoring program for the Salinas Valley in the year of 2020 and Spring 2021.

Objectives:
1. Document population dynamics of aphids across the Salinas Valley throughout the year. *Deliverables*: Reports presenting data of aphids captured weekly on sticky cards.

Procedures:
Twenty-two trap locations were set up across the Salinas Valley in the general regions of the cities of Castroville, Salinas, Chualar, Gonzales, Soledad, Greenfield, and King City. Yellow sticky cards were deployed on PVC poles in areas adjacent to production fields that did not interfere with farming activities. Cards were collected once a week, throughout the entire year. Cards were counted for winged aphids (not separated by species) and averaged across all cards representing the general region. The numbers of aphids per card and per week were reported as a region, as well as an average for the entire Salinas Valley. Data is shared on the University of California Cooperative Extension Entomology website, http://cemonterey.ucanr.edu/Agriculture/Aphid_Monitoring_Program/

Results:
Monitoring of aphids in 2020 showed moderate populations across all locations, compared to

those observed in 2019, while 2021 Spring populations appear to be higher than reports from the previous two years (**Figures 1-3**).

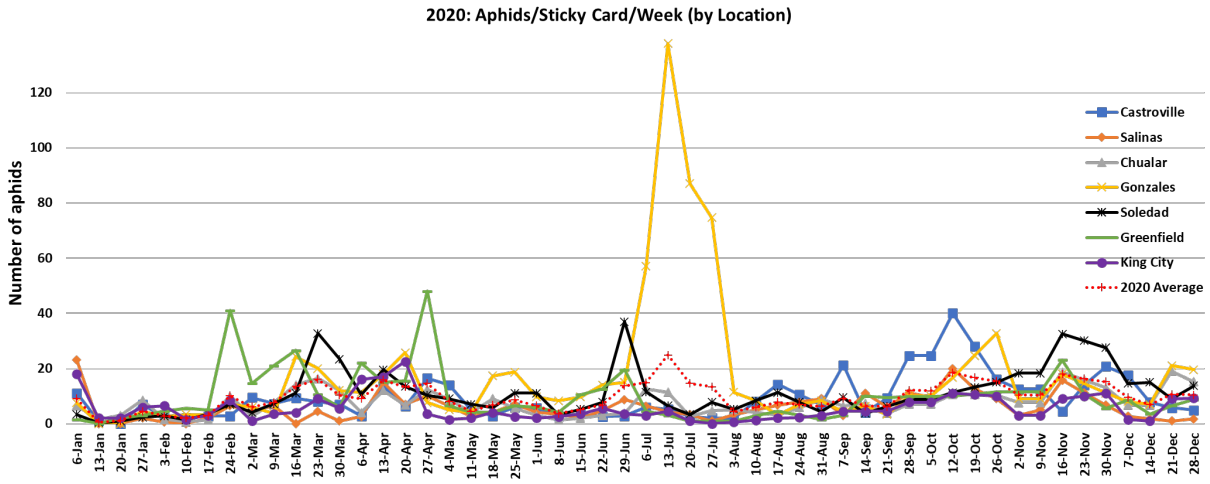

Figure 1: Average number of aphids per sticky card, per week, for each location in 2020. Aphids were counted from each sticky card and averaged across all cards assigned to a general location (Castroville, Salinas, Chualar, Gonzales, Soledad, Greenfield, King City).

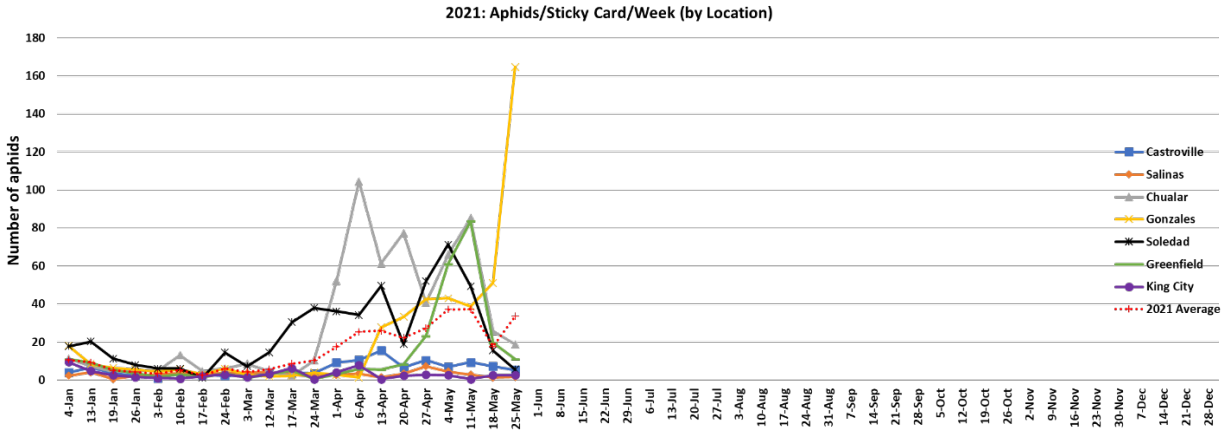

Figure 2: Average number of aphids per sticky card, per week, for each location in 2021. Aphids were counted from each sticky card and averaged across all cards assigned to a general location (Castroville, Salinas, Chualar, Gonzales, Soledad, Greenfield, King City).

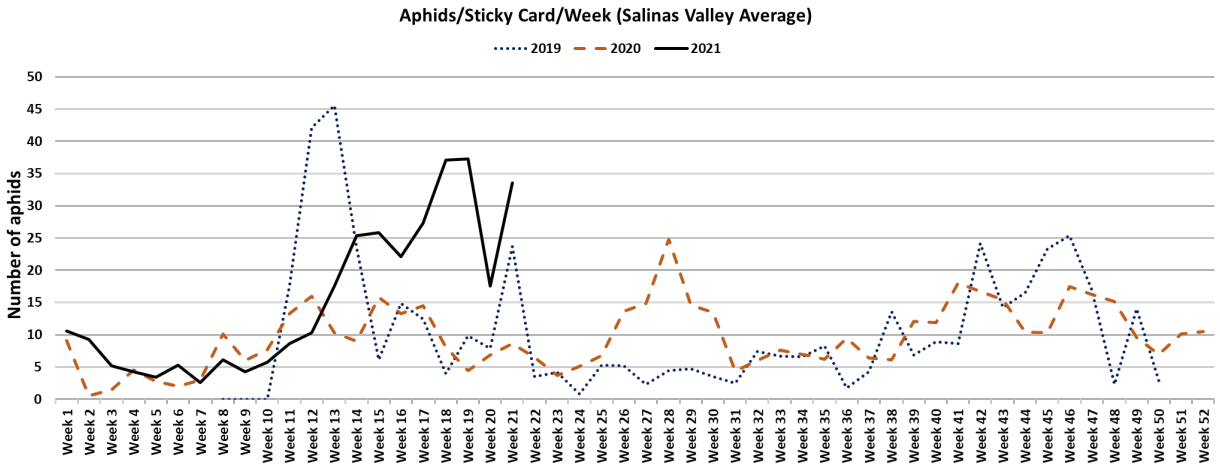

Figure 3: Average number of aphids per sticky card, per week, across all locations in the Salinas Valley. Aphids were counted from each sticky card and averaged across all 22 cards located in Castroville, Salinas, Chualar, Gonzales, Soledad, Greenfield, and King City.

Discussion:

Aphids are major pests in lettuce due to the cosmetic damage they cause, their presence as an insect contaminant, and are vectors of viruses, all of which can reduce marketability and profitability. The green peach (*Myzus persicae*), potato (*Macrosiphum euphorbiae*), foxglove (*Aulacorthum solani*), and lettuce (*Nasonovia ribis-nigri*) aphids are the most problematic aphid species in Central Coast lettuce. Biology and general life history of these aphids have been documented in multiple crop systems, however, there is still a lack of localized and regional data on aphid phenology through the lettuce growing season in the Salinas Valley. The data presented here contributes to historical information on aphid densities that could be matched with weather conditions to explore potential drivers of population fluctuations in this region. Knowing the factors influencing the local populations of aphids in the Salinas Valley will help growers and PCAs make informed decisions in their IPM programs.