Wheat Entomology Newsletter April 12th, 2024

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We are excited to begin our fourth year conducting the Wheat Entomology Newsletter! Our team is led by Dr. Punya Nachappa, entomologist and Associate Professor in the Department of Agricultural Biology (www.nachappalab.com). Adam Osterholzer, our Research Associate in the CSU Wheat Entomology Program, will provide updates from the field. We welcome wheat pest questions from growers, please don't hesitate to reach out for information.

Request For Crop Rotation Field Sites: CWRF-funded research project

As part of our CWRF-funded research, we are studying the impacts of crop rotations on sawfly infestations, and we need more field sites! If you are interested in participating, please contact Adam about your rotation history and our team will come to sample your fields.

Monitoring for adult wheat stem sawflies in New Raymer and Orchard, CO

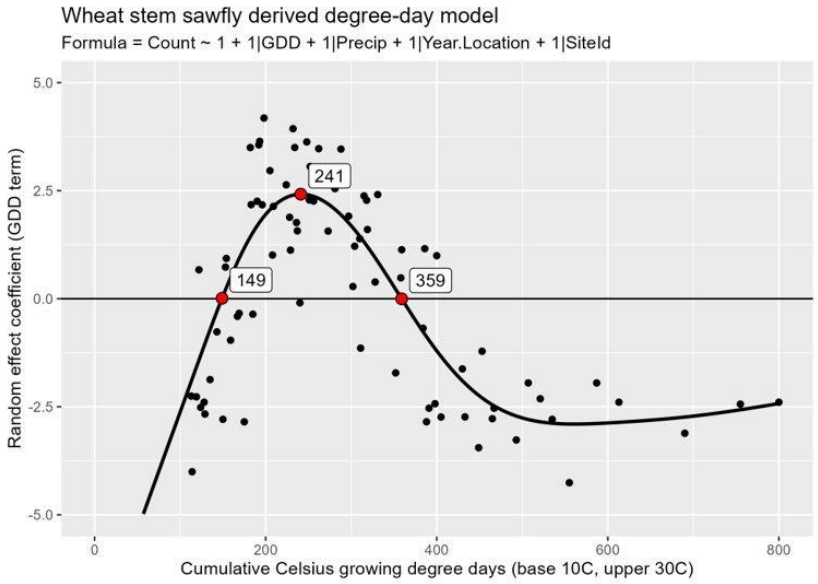
To ensure that we capture adult emergence, we've begun scouting in several fields in New Raymer and Orchard. No adults or pupae were observed at 8 separate locations on April 11th. All sawflies were still in larval form (**Figure 2**) so we estimate around 3-4 weeks for adult emergence.

Figure 2: Wheat stem sawfly larvae obtained from New Raymer, CO on April 11, 2024.

Wheat stem sawfly Phenology Model

Henrique Vieira, a PhD student in the Nachappa lab has developed a growing degree-day (GDD) model based on 13-years of adult population data collected at New Raymer and Orchard to predict the timing of adult emergence and peak abundance. This model is based on temperature and precipitation. We predict the first adult appearance at 149 DD, adult population peak at 241 DD and decline at 359 DD (**Figure 3**).

We recommend scouting before 149 DD and on average the date for WSS emergence in Colorado is May 12th, so it is valuable to start scouting around late April. There is a difference of only 92 DD between emergence (149) and population peak (241), this is typically achieved around two weeks in Colorado. The average date of population peak was May 28th. Management strategies such as insecticidal sprays may be implemented during the transitory 149-241 DD period when WSS levels are still low which can reduce population build up and economic damage.



Growing degree day accumulation for your own area can be determined at: Online Phenology and Degree Day Model- https://pnwpest.org/cgi-bin/ddmodel.us?spp=aaa&uco=1

Use the following steps:

- Use the pin on the map that is closest to your farm.
- Select "insects" as the model category.
- Select "degree day calculator (general purpose)" in the model selection.
- Use 10 C and 30 C for the temperature thresholds. **Remember to change from Fahrenheit to Celsius!**
- Use "single sine" as the calculation type.
- Use a start date of Jan. 1st and end date of Dec. 31st for 2024.
- Leave the forecast type in the default setting.
- Click the box to run the model, and then scroll down to the current date.

You can also visit CoAgMET Homepage https://coagmet.colostate.edu/ to calculate GDD.

Other Wheat Pests

Dillon Roesch (Flagler Aerial Spraying) was reported low levels of Russian Wheat Aphids near Flagler. These populations may increase without future rainfall. Dillon also reported needing to treat a few fields for cutworms.

Wheat Diseases

For wheat disease updates by Dr. Robyn Roberts, please see:
https://coloradowheat.org/category/news-events/wheat-pest-and-disease-update/

Acknowledgements

We would like to acknowledge the tireless work of CSU researchers and extension agents for reporting pest problems throughout the state. Special thanks to Kevin Larson, Brett Pettinger, Ron Meyer, Todd Ballard, Sally Jones-Diamond, Dennis Kaan, Kat Caswell, and Michaela Mattes.