

Weekly Article

5-17-2021

Calculating Growing Degree Days

Hello, my Name is Richard Purdin with OSU Extension, Ag and Natural Resource Educator and Community Development Educator for Adams County. I hope to better inform local producers and the public of the latest news in the world of agriculture. Spring is back and summer like weather is on the way. Last week was a great week for farmers. In my travels and scouting, I noticed many producers getting field work done. Planters were rolling, herbicide applications, fertilizer spreading, and hay being cut. After one good week of weather much of the field work has been accomplished but there is much more to get done. Looking ahead this week is going to start wet but finish dry and warm, more work should get accomplished. So, with many growers hitting the field and planting corn and soybeans this week I wanted to talk about how you can calculate growing degree days and germination rate. Calculating growing degree days can enable a farmer to calculate when corn and soybeans should emerge. The emergence period is a critical period that can be affected by many factors including, soil temperature, air temperature, planting depth, soil moisture, and seed viability.

Calculating growing degree days can also help producers set a date when to stop planting corn and switch to soybeans or shorter season hybrids due to maturity and potential frost injury before harvest. For emergence corn needs 100-120 growing degree days to emerge, but how does one calculate a growing degree day? A growing degree day can be calculated using the maximum and minimum growing temperature method. For corn the minimum temperature that growth occurs = 50° and the max temp is 85°. The formula to calculate growing degree days = $\text{high temp} + \text{Low temp} / 2 - 50^\circ$.

- Example = Let us say that 24 hours after planting the high temp = 65° + low temp = 50° = 115 divided by 2 = 57.5 – 50 = 7.5 GDD. In 1 day, the corn accumulated 7.5 growing degree days. If the weather were to stay the same, it would take 16 days for the corn to accumulate 120 GDD and germinate. This has been reality for many of our very early planted crops.

Note: Calculating growing degree days can be used for vegetable production, calculating when crops will mature and be ready for harvest. Growing Degree days can also be used to estimate when crop pest will emerge and start injuring crops. Black Cutworm need 300 GDD from egg laying to start feeding on crops.

Some other details to go over:

- USDA FSA will open a sign-up period for CFAP #2 Assistance program for Livestock, row crop, and specialty crop producers effected by the Coronavirus pandemic. Call (937) 544 -2033 for assistance.
- May is Beef Month-remember to Eat some Beef and then thank the cattle producers who work hard everyday to produce a healthy and safe product for you and your family to consume!
- May 25th Calving workshop and BQA held at the Beef Arena Brown County Fairgrounds, 325 West State Street Georgetown, Ohio 45121. Pre-registration is required by May 21st. This is a free event and you can register by going to go.osu.edu/calvingBQA or Contact James Morris at morris.1677@osu.edu or call (937) 378-6716
- July 15th is the set deadline to report acreage planted to spring crops such as corn, soybeans, oats, alfalfa, tomatoes, potatoes and more. Contact the FSA Office to report once crops are planted.

From the field

- Soil Temperatures around 60-62 °F
- Corn and Soybean Planting continues.
- Dry Hay and Hayledge being made from small grains.
- First cutting of Alfalfa taking place.
- Winter wheat is in growth phase Feeks 10.1, seed head is fully developed, cold injury has created bent or deformed heads (should have little effect on yield).
- Tall Fescue, Orchard grass and other cool season grasses are fully headed (quality is degrading fast)
- Scout for flea beetle damage on emerged crops and vegetables.
- Canada Thistle starting to flower, this is a good time to mow or apply herbicide before seed is made.
- Consider clipping pastures with heavy Tall fescue populations.