**Cornell Cooperative Extension** | **Central New York Dairy, Livestock and Field Crops**

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# Checking the Back Forty

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## Alfalfa weevil and growing degree days

Time to cover a few crop pests to on the look outfor at this point in the growing season. Alfalfa weevil is one to consider if you have finished up cutting your alfalfa.

The first few issues of Checking the Back 40 I was focusing on GDDs because tracking them a bit can help you make management decisions and when to scout for alfalfa weevil is one of those decisions. Alfalfa weevil life cycle is also driven by growing degree days which has a base of 48º F. In Table 1 I have listed sites for which we have GDD data for 48º F for March 1 until May 30. Table 2 lists stages if the life of alfalfa weevil and the GDDs that coincide with stage. We are soon approaching the 3 instar or larval stage of alfalfa weevil (Figure 1) so these are larvae that could be feeding on that regrowth.


Figure 1. Alfalfa weevil larvae.

If you have cut your alfalfa then after 5-7 days look at the regrowth for larvae feeding. If 50% of the new buds show feeding then an insecticide application maybe warranted. I often hear people say that they drove by an alfalfa field after first cutting that just didn't seem to be growing back or it grew back some and stopped. I find alfalfa weevil was usually the culprit.

Table 1. Growing Degree Days base 48 F for March 1 to May 30,2018

| Location | GDDs base 48 |
|---|---|
| Oriskany Falls | 449 |
| Sherburne | 391 |
| Laurens | 389 |
| Sprakers | 397 |
| Cobleskill | 416 |
| Amsterdam | 437 |
| Saratoga Springs | 480 |
| Gansevoort | 424 |

Table 2. Growing Degree Days (GDDs) for Peak (50%) Occurrence of Stage of Alfafla Weevil- 48°F base. 3/1-5/30/2018

| Stage or Event | GDD |
|---|---|
| eggs hatch | 280 |
| instar 1 | 315 |
| instar 2 | 395 |
| instar 3 | 470 |
| instar 4 | 550 |
| cocooning | 600 |
| pupa | 725 |
| adult emergence | 815 |

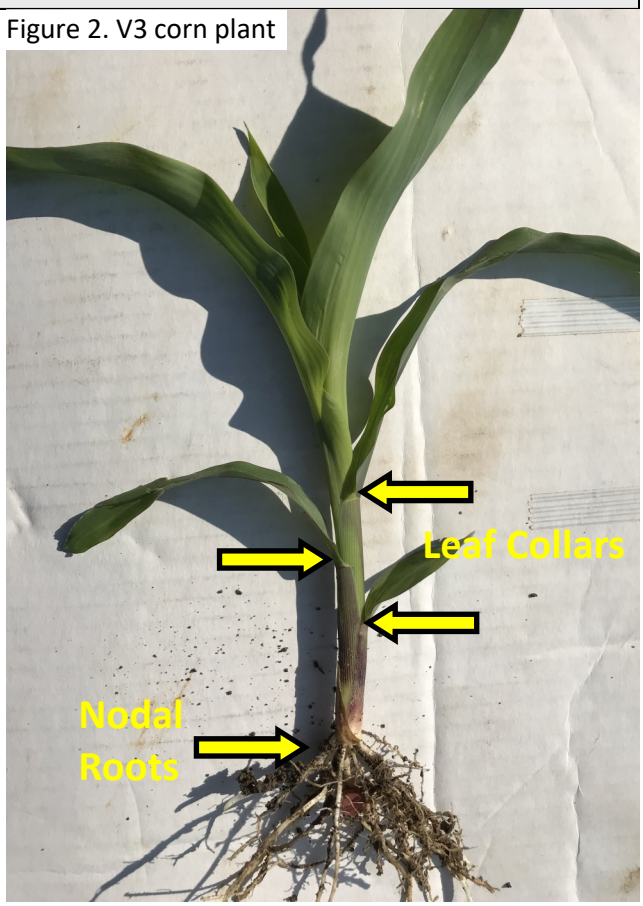
Not spreading an alarm here that I am finding alfalfa weevil more pointing out it is time to be diligent. Note that the alfalfa GDDs and alfalfa weevil GDDs don't match up as alfalfa may mature quicker than weevil. Alfalfa's base is 41°F (vs 48°F for weevil) so some years you see more or less in the first cutting or even second cutting based on this difference. My take is that years like this where the GDDs came at once we see less second cutting weevil feeding compared to years where alfalfa has moved along at temperatures less than what the weevil need so they show up in the second cutting. We will see what plays out this year.

(continued)

# Early season corn growth and development

In Figure 2 is a V3 corn plant in at 336 GDDs. A number of things to point out first of which is the growth staging. V3 indicates 3 leaf collars visible which are indicated in Figure 2 with arrows. Although other leaves are visible, they are not counted yet. This method of describing corn growth allows everyone to be on the same page when communicating vegetative stages.

Figure 2. V3 corn plant




Up until this stage corn has relied on the seminal root system and energy that comes from the seed. Anything such as insects or disease that would affect the seed or mesocotyl area could have injured or killed the plant. At the V3 stage corn has developed the first of it nodal root system and is beginning to survive on its own with energy from photosynthesis. The growing point is still below the soil surface but that will start to change with the appearance of the next three leaves.

The last pictures, Figures 3a,b and c are from a corn field where the grower saw leaves that had been cut at the end off the field. I could see a few holes or divots where birds had worked the plant trying to get the seed but ended up only cutting off the leaves in the struggle. In Figure 3c show a plant with a seeding depth of 2 inches which made getting the seed out of the ground more difficult.

Figure 3a

Figure 3b

Figure 3c


Figure 3a). Hole where birds have worked a corn plant around before leaves are clipped off, 3b) seed, roots and what is left of the mesocotyl after birds clipped the plant, 3c) a healthy corn plant that has not been touched and show s seed is at least two inches deep. Note growing point is about .75 inches below soil surface

# Growing Degree Day Total (86°/50° F) as of May 30, 2018

Here are the Growing Degree Day (GDD) totals for three planting dates and thirteen sites in the team region as of May 30, 2018. This format may change some over the summer but right now it begins to show how growth is shaping up over the growing season. For corn approximately 110-120 GDDs are needed for emergence, 200 GDs are needed to get to V2 or two leaves completely visible and around 475 GDDs to reach V4.

These GDDs can work for soybeans also. Approximately 90 GDDs are needed for emergence, and 520 GDDs are needed to get to R1, or first flower.

To find your GDDs go to: http://climatesmartfarming.org/tools/csf-growing-degree-day-calculator/

| GDDs for May 30, 2018 | | Planting Date May 1 GDDs 86/50 | | | | Planting Date May 10 GDDs 86/50 | | | | Planting Date May 20 GDDs 86/50 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Elevation | Season To Date | 15 Year Average | 30 Year "Normal" | Period of Record | Season To Date | 15 Year Average | 30 Year "Normal" | Period of Record | Season To Date | 15 Year Average | 30 Year "Normal" | Period of Record |
| **Canastota** | 420 | 400 | 315 | 291 | 198-446 | 267 | 235 | 215 | 147-331 | 158 | 138 | 118 | 82-185 |
| **Bouckville** | 1170 | 355 | 277 | 252 | 160-387 | 238 | 208 | 187 | 119-289 | 140 | 124 | 104 | 68-163 |
| **Sherburne** | 1115 | 367 | 288 | 253 | 135-377 | 244 | 215 | 194 | 100-280 | 140 | 126 | 107 | 56-157 |
| **Bainbridge** | 1000 | 346 | 280 | 257 | 131-382 | 227 | 208 | 190 | 98-284 | 136 | 122 | 105 | 55-159 |
| **Oneonta** | 1107 | 364 | 276 | 264 | 132-374 | 240 | 204 | 195 | 98-277 | 141 | 118 | 107 | 55-155 |
| **Richfield Springs** | 1580 | 316 | 248 | 234 | 132-348 | 207 | 186 | 173 | 99-260 | 125 | 110 | 95 | 56-147 |
| **Frankfort** | 530 | 353 | 276 | 256 | 160-393 | 237 | 207 | 190 | 119-292 | 144 | 121 | 105 | 67-165 |
| **Cobleskill** | 937 | 361 | 272 | 257 | 146-408 | 239 | 203 | 190 | 109-305 | 143 | 120 | 106 | 62-172 |
| **Cherry Valley** | 758 | 367 | 291 | 275 | 160-421 | 243 | 218 | 203 | 119-313 | 144 | 127 | 113 | 67-176 |
| **St Johnsville** | 650 | 319 | 255 | 245 | 140-352 | 213 | 192 | 181 | 104-263 | 129 | 113 | 101 | 59-149 |
| **Fultonville** | 489 | 396 | 319 | 300 | 189-449 | 264 | 239 | 222 | 141-335 | 154 | 140 | 124 | 80-190 |
| **Galway** | 749 | 356 | 282 | 271 | 174-390 | 233 | 211 | 200 | 130-290 | 138 | 125 | 112 | 74-166 |
| **Saratoga Springs** | 365 | 385 | 313 | 297 | 176-428 | 254 | 235 | 220 | 131-318 | 147 | 137 | 123 | 74-181 |