SCOUT FOR GRASSHOPPERS IN FIELD EDGES

Field reports indicate some grasshopper hot spots. A recent report of grasshopper defoliating dry beans near Park River in Ramsey County, NE area of North Dakota, had severe damage and required an edge treatment to prevent the grasshopper nymphs (young grasshoppers) from moving further into the field. Field crops are most susceptible to grasshoppers in the early crop stages. Grasshopper nymphs damage field crops by defoliating leaves of crops near field edges.

Scout for grasshopper nymphs that are active in field ditches and starting to move into field edges of crops. Nymphs look like adult grasshoppers but are smaller and have wing pads instead of wings. There are usually five or six nymphal growth stages depending on the species of grasshopper. The development time from egg to adult is 40 to 60 days.
The NDSU Extension IPM scouts have been sweeping field ditches and have found low grasshopper populations in the state (see map); however, there are some isolated ‘hot spots.’ Scouting individual fields is the best strategy to determine if fields need treatment. Since grasshopper nymph infestations are often the heaviest on the field edges, treating just field edges can reduce the populations of grasshoppers.

Scout for grasshopper nymphs from now through mid-July. Inspect ditches and field edges for nymphs and defoliation. For grasshopper thresholds, the ‘threatening’ rating in Table (below) is the action threshold for grasshoppers in any field crop. For example, grasshopper control is advised whenever 50 - 75 small nymphs per square yard can be found in adjacent non-crop areas; or when 30 - 45 nymphs per square yard can be found within the field.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Nymphs per square yard</th>
<th>Adults per square yard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Margin</td>
<td>Field</td>
</tr>
<tr>
<td>Light</td>
<td>25-35</td>
<td>15-25</td>
</tr>
<tr>
<td>Threatening</td>
<td>50-75</td>
<td>30-45</td>
</tr>
<tr>
<td>Severe</td>
<td>100-150</td>
<td>60-90</td>
</tr>
<tr>
<td>Very Severe</td>
<td>200+</td>
<td>120+</td>
</tr>
</tbody>
</table>

Since it is difficult to estimate the number of grasshoppers per square yard when population densities are high, pest managers can use a 15-inch sweep net and four 180-degree sweeps is equivalent to the number of adult (or nymph) grasshoppers per square yard. Or, count the number of grasshoppers in a square foot and multiply by 9 to get the number of grasshoppers per square yard.

The USDA APHIS grasshopper hazard map for rangeland in 2017 is shown on next page. The rangeland adult grasshopper counts in North Dakota were the lowest densities that USDA APHIS scouts have ever documented in the 32 years of survey. This was surprising since drought conditions prevailed in the historic survey areas and usually dry conditions favor increasing populations of grasshoppers.
“Hotspots” were very infrequent even in recurring trouble spots. Reports from rancher cooperators and grazing associations also reported low population densities and few treatments were needed. Although no grasshopper outbreaks for rangeland are anticipated for the 2018 season, weather and pasture/forage conditions can affect future conditions. (Source: D. Hirsch, USDA APHIS PPQ, State Plant Health Director, North and South Dakota).

As of June 11th, pasture and range conditions rated 3 percent very poor, 14 poor, 47 fair, 34 good, and 2 excellent in ND (Source: USDA, NASS, ND Crop Progress and Conditions – June 11, 2018 News Release). North Dakota has areas listed as abnormally dry in west to severe drought in north central in the latest Drought Monitor map, even with the recent rains. See the U.S. Drought Monitor website.

COLLECTING LEAFY SPURGE FLEA BEETLES FOR BIOCONTROL

The southeast corner of North Dakota has accumulated enough degree days to start scouting for leaf spurge flea beetles for biocontrol of the noxious weed leafy spurge.

There are several companies that commercially rear leaf spurge flea beetles for purchase (see information below), if you don’t have time to collect leafy spurge flea beetles. Here’s an updated article from last year’s Crop & Pest Report to refresh your memory on biocontrol using Aphthona flea beetles.

Leafy spurge is flowering in ditches and pastures. Farmers and land owners can use leafy spurge flea beetles (Aphthona species) for effective biocontrol of leafy spurge. Adult Aphthona flea beetle feed leafy spurge foliage causing severe defoliation and on the roots as larvae. However, the larval root feeding injury causes the major damage to water and nutrient uptake, and storage. These flea beetles are host-specific to the leafy spurge plant, which makes them an ideal biological control choice.
To determine when to begin scouting for adult flea beetles, use the accumulated growing degree days (AGDD) for sunflower (base of 44 F) on NDAWN - sunflower degree days/growth stage application. Select the “Map” tab, enter “2018-03-01” for planting date and select “growing degree day” for map type.

Begin scouting for adult flea beetles when the sunflower AGDD approaches 1,000. Flea beetles should be collected between 1,200 and 1,600 AGDD using the sunflower GDD model. Currently, North Dakota ranges from ∼890 AGDD in the northwest to 1074 in southeast (see map below).

Adult flea beetles can be collected easily with sweep nets. After late July (or 1,600 AGDD), flea beetles begin to lay eggs and should not be moved or collected. Leafy spurge flea beetles typically take three to five years to establish and reduce leafy spurge infestations.

To find collecting sites for leafy spurge flea beetle, contact your local county weed office (number listed in local phone book). Leafy spurge flea beetles also are available commercially for purchase at Biological Control of Weeds or WeedBusters BioControl in Montana.

An excellent resource on leafy spurge flea beetles is available on NDSU Extension Service publication website entitled Leafy Spurge Control Using Flea Beetles W1183 by Rodney Lym.

Note: Please note that mention of any company is not an endorsement by NDSU or the author.
ALFALFA WEEVIL UPDATE

Based on the degree day accumulations (see map below) for alfalfa weevils in North Dakota, we are pass the period when adults and larvae cause significant feeding injury on alfalfa. Although adult weevils will feed on the foliage causing defoliation, larval feeding causes most of the defoliation. This is good news for alfalfa growers since cutting has started in many areas. There were a few field reports of severe defoliation caused by alfalfa weevil from Makoti-Ryder in north central area (T.J. Prochaska, NCREC) and Beach in southwest (Ryan Buetow, DREC). However, these alfalfa fields were cut early for hay and they avoided any insecticide treatments while preventing economic damage from alfalfa weevils. For alfalfa grown for hay, the most cost-efficient management is to cut the alfalfa early before feeding damage occurs. This also preserves our parasitic wasps that attack alfalfa weevils reducing populations naturally.

The degree-day model for alfalfa weevil use a base development temperature of 48°F. Egg hatch begins at 300 accumulated DD and larval development occurs from 371 to 595 accumulated DD. Peak feeding occurs from 504 - 595 accumulated DD when larvae are in the 3rd to 4th instar. To assess the DD model, go to the NDSU's NDAWN website and Applications – Insect DD. Then, click on the Map tab and select 48 F for your base temperature and Degree Days (DD) for your type.

For more information, see the NDSU Extension publication Integrated Pest Management of Alfalfa Weevil in North Dakota E1676.

Janet J. Knodel
Extension Entomologist
SUGARBEET ROOT MAGGOT: FLY ACTIVITY DROPPING, WATCH OUT FOR RESURGENCE

Sugarbeet root maggot (SBRM) fly activity has diminished considerably in the past few days. This is, in part, due to wet and windy weather that began last Friday. Such conditions keep flies down in more sheltered microsites, such as on the ground, in the plant canopy, and in field margins. The adults also fly at lower distances above the ground, resulting in many flies being missed by sticky-stake traps, or the majority being captured on the lower end of the sticky surface of the trap (Fig. 1). As such, the fly infestation actually present in a field may not always be accurately estimated by sticky-stake traps.

Peak fly activity has probably been surpassed in all areas of the Red River Valley (RRV). Populations are expected to continue dropping in the coming days. However, as warmer and more settled weather conditions resume, it will be important to closely monitor for any potential resurgences of fly activity in fields of concern.

Valley-wide, SBRM fly infestations are on the increase in comparison to the past couple of years. In fact, if monitoring results continue at the expected pace for the next week or so, 2018 will be the second-highest fly activity year in the past 12 years. Hotspots this year include Auburn, Bathgate, Cavalier, Crystal, Drayton, Grand Forks, Reynolds, St. Thomas, and Thompson, ND, as well as Ada, Crookston, and E. Grand Forks, MN.
Two things to watch for. First, a close watch should be kept on all fields in areas where at least moderate fly activity had been detected during the past two weeks. A resurgence in activity could possibly require a rescue insecticide application (see Control Recommendation below). Second, due to the extremely early flush of fly activity in several fields this year, plants in unprotected fields (or those where postemergence rescue insecticide applications were made later than optimal) could begin showing stress, and even dying, as warmer weather develops. Adequate to even surplus soil moisture conditions may actually save some of those fields this year if regular rainfall events occur to sustain those plants.

Control Recommendation. Fields should be monitored for fly activity during the next few days. The areas of highest concern at this time are those in the central and northern RRV. Fields that have already received a postemergence liquid spray may require retreatment if subsequent infestations reach or exceed 0.5 flies per plant. NDSU research suggests that postemergence liquid insecticides are the best option for SBRM control at this time, and they still can provide good results if applied within 2-3 days after peak fly. Fields protected with postemergence granular insecticides should be sufficiently protected, and should not need additional treatment. Foliar liquid insecticide applications made after this weekend (June 19-21) are unlikely to be economically justifiable, unless infestations reach 0.5/flies plant.

IMPORTANT: If a chlorpyrifos-containing liquid spray (e.g., Lorsban 4E, Lorsban Advanced, or any generic chlorpyrifos product) is applied, 10 days must pass before another chlorpyrifos-containing liquid can be made to the same field. If retreatment is deemed necessary within 10 days of the initial chlorpyrifos application, an insecticide product containing a different active ingredient must be used. For more guidance on postemergence control strategies, consult the “Insect Control” section of this year’s Sugarbeet Production Guide. Always remember to READ, UNDERSTAND, and FOLLOW the label of your insecticide product – it’s the law.

Mark Boetel
Research & Extension Entomologist

Iron Deficiency Chlorosis in Soybean

After an initial dry start to the soybean growing season, rainfall in the last week or two has provided conditions for iron deficiency chlorosis (IDC) to show up in the region. Although there is usually enough iron (Fe) available in the soil, young soybean plants may not be able to take up enough Fe. The symptoms of IDC usually start to show when the plant is at the first or second trifoliolate growth stage (see photo on next page). The cotyledons and unifoliolate leaves normally will stay green. In trifoliolate leaves, the symptoms appear as yellowing leaf tissue between the veins while the veins may remain green.
Severe IDC cases may turn leaf tissue brown and cause necrosis (Graph 1). Plants with chlorosis are often stunted and behind in growth and development compared to healthy plants. Chlorosis is common when soybean plants are grown on high pH calcareous soils, especially when salt levels are elevated. For a description about the need for Fe in soybean and why IDC develops, consult Extension publication SF1164.

Soybean plants may grow out of the chlorosis and become green again, however yields might already be reduced due to IDC. The most important management practice is selecting chlorosis tolerant soybean varieties. NDSU scientists use a rating of 1 to 5 to score the IDC symptoms in plants where 1 is green, 3 is yellow, and 5 is dead tissue (Photo 2).
A listing of IDC ratings of varieties tested in 2017 can be found in the NDSU soybean variety trial results publication A843. The IDC scores for varieties tested in 2018 will be available this fall. If a field has IDC this year, it is critical to note which variety is used and what tolerance the variety has to IDC expression. It is vital to grow soybean tolerant varieties in fields more prone to IDC.

Hans Kandel
Extension Agronomist Broadleaf Crops

**UPDATES TO ‘NDSU CANOLA DOCTOR’ AND ‘SUGARBEET PRODUCTION GUIDE’ APPS**

The “NDSU Canola Doctor” and “Sugarbeet Production Guide” mobile apps are now available for installation on both Android and iOS devices. Previously, the Canola Doctor app was available for android, while the Sugarbeet Production Guide app was available only for iOS devices. The apps deliver critical information to make timely management decisions and optimize crop production for canola and...
sugarbeet growers, respectively. The apps can be installed by scanning the QR code below or following the short links.

For more information on the apps, contact us at:

Kishore Chittem  
Post Doctoral Research Scientist

Mohamed Khan  
Extension Sugarbeet Specialist  
NDSU & U of MN

Luis del Rio  
Professor of Plant Pathology

Janet J. Knodel  
Extension Entomologist

INTEGRATED PEST MANAGEMENT SURVEY – SMALL GRAIN DISEASE REPORT

The NDSU IPM scouts visited 317 wheat and 21 barley fields during May 28 to June 8. Collectively, foliar diseases were detected in only 9 fields (less than 3% of the fields). This matches similar reports from agricultural professionals indicating disease has been low this year. Most questions at this point have revolved around atypical looking lesions (Figure 1) that likely are attributed to physiological responses from abiotic stressors (ie: temperature fluctuations, wind, etc). The recent rain events across much of the state will increase the risk for residue-borne fungal leaf spots, especially fields in no-till with a short rotation away from wheat.

Figure 1. Photos showing small grains symptoms caused by abiotic (non-living) stressors.
Stripe rust and leaf rust of wheat have not been found in North Dakota and reports of rust in the Great Plains is also low. These observations are vastly different from what was observed over the past three growing seasons when stripe rust was reported early (mid to late May) in the growing season.

As always, continue to keep scouting fields! The NDSU IPM Survey is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27144 / accession 1013592] from the USDA National Institute of Food and Agriculture.

Andrew Friskop
Extension Plant Pathology, Cereal Crops

SOYBEAN IRON DEFICIENCY CHLOROSIS (IDC)

Soybeans are ‘blooming’ in the region. Not flowering, just turning yellow. My first summer at NDSU (1994) I experienced this phenomena for the first time, asked a colleague what was going on with the yellow soybeans and they said “Oh, they always do that.” But soybeans are supposed to be green all season. Yellow is bad. I have detailed the reasons for IDC in the NDSU Soybean Fertility circular SF1164, 2018 version that can be accessed as a pdf or as html.

The summary version follows:

Due to the increase in soybean acres planted this year, there are probably soybeans planted in fields that are not favorable for soybean growth. IDC cannot happen unless soil pH is greater than 7 and the soil has significant carbonates (calcium carbonate, magnesium carbonate, sodium carbonate). All soils with pH greater than 7 have at least some measureable carbonate. There are differences even within a soil type in carbonate content. A Bearden soil, common at the fringes of the Valley, may have 2% by weight carbonates in the surface 6 inches, or 20% by weight carbonates. Carbonates themselves do not influence IDC; however, when the soil is moist enough to dissolve more soluble salts like sulfate or chloride salts, carbonates (CO$_3^{2-}$) dissolve forming bicarbonate (HCO$_3^{-}$). Bicarbonate neutralizes the acidity that soybeans produce around their roots, which is significant because the protein that soybeans exude to change insoluble iron into soluble iron only works in an acid environment (like eggs going into a frying pan- first sort of a liquid, then a solid due to heat). Enzymes are 3-D biological tools that have a function, and when the environment is unfavorable, they change shape. Think of a Phillips head screwdriver changing into a straight head.) Once the protein is inactivated, iron is no longer accessible to the soybean, and new leaves without an iron source turn yellow due to low chlorophyll production (of which iron is a key element). The greatest reason for regional IDC being different than Iowa IDC is soil salinity. Soil salinity is a huge plant stress. Whenever there is a plant stress, its ability to overcome IDC is greatly reduced. The greater the salinity, the worse will be the IDC if carbonate content predisposes the plant to IDC.

Therefore the number one management strategy in the region to reduce IDC is field selection. Fields that are 7 and below in pH are preferred. The lower the salt (EC) values, the better. Once a field hits EC 1.5, bad things will happen to soybeans. An EC of 2? Call your insurance agent the day after you plant.

The second most important strategy is variety selection. Dr. Kandel and Dr. Helms maintain a site with regional IDC ratings. Using local ratings is very important because these varieties are screened
on sites with both carbonates and soluble salts, whereas Iowa ratings are screened solely on carbonate tolerance, with little or no soluble salts. Other management aids are 1.) planting in wider rows to decrease distance between plants, 2.) seeding a cover crop of oats, barley or rye at the time or before time of seeding to help dry the soil and take up some soil nitrate (high soil nitrate, which we had this spring, causes a physiological precipitation of iron inside the leaf, rendering within-plant iron unusable), and 3.) use a high ortho-ortho-EDDHA containing iron fertilizer with the seed at planting. Spraying a foliar iron fertilizer at this time will only affect leaves that are out and new leaves will come out yellow. Foliar iron is not mobile within the plant.

When the soil dries out, most areas of IDC will become green again. Some areas that remain moist due to a high water table, and have high soil carbonate and salts, may not green up at all depending on variety or even in spite of the variety. For next year, have fields screened for CCE (calcium carbonate equivalent) and EC (soluble salts). Choose the most favorable fields to seed soybeans for greatest economic return in 2019.

Dave Franzen
Extension Soil Specialist
701-799-2565

AROUND THE STATE

NORTHWEST ND

Scattered storms last week produced pockets of hail but I heard no reports of widespread damage in Northwestern counties. Strong winds blew most of the day Sunday and Monday and prevented people from spraying. Calmer winds are predicted for the middle of this week, and growers are under pressure to get their weed control done, so expect to see sprayers out in the fields. There are chances of showers this weekend (June 16 and 17) and additional moisture would be welcome to keep stands looking good. At the Williston Research Extension Center, early-planted wheat has started jointing while later planted small grains are tillering. We will take our first cutting of alfalfa and grass hay this week. Crops generally look good and there are no signs of moisture stress. Weed control will likely be a challenge this year with late planting, enough moisture to allow for continued weed emergence, and winds that limit spraying windows. On the weed control note, narrow leaf hawksbeard is flowering and is widespread in southern Williams County. If you see it flowering in your ditches and field edges, mow it to prevent the seed from blowing as glyphosate is not likely to prevent seed production at this point.

Clair Keene
Extension Cropping Systems Specialist
NDSU Williston Research Extension Center
NORTH CENTRAL ND

Over the last week, a wide area of North Central North Dakota received decent amounts of precipitation. Minot received about 1.12”, Bottineau 1.07”, Crosby 0.69”, Garrison 1.32”, and Rugby 0.45” of precipitation. Precipitation, even possible severe weather, remains part of the short term forecast. Soil temperatures (bare) appear to be holding steady at most NDAWN stations in the North Central region in the upper-60 degree range (NCREC/Minot - 70˚F, Bottineau - 66˚F; Garrison - 70˚F; Rugby - 67˚F). At the current moment, when weather permits, growers appear to be spraying crops throughout much of the region as planting has finally wrapped up.

Populations of canola flea beetle appear to be decreasing across the region as we move deeper into the month of June. That is good news as some growers in the region were having to step up scouting programs. With that said, growers should continue to scout for flea beetles through about the 6th leaf stage in canola. Additionally, the North Central scout has found some minor populations of grasshoppers in the area. Scouting for grasshopper nymphs should continue through the month of June. Always inspect ditches and field edges for nymphs. The ‘threatening’ rating is considered the action threshold and is advised whenever 50-75 nymphs per square yard are being observed in adjacent non-crop areas or 30-45 nymphs per square yard within the field. Growers can use a 15 inch diameter sweep net, taking four 180 degree sweeps to equal a square yard estimate.

Often times, wet weather can lead to some disease issues. Some ascochyta infected field peas have been identified in the northwestern part of North Dakota, so scouting in the north central region is suggested. Additionally, some photos of wind and hail damage have come into my office in soybean, pulses, and canola – many of which were from the Kenmare, ND area.

TJ Prochaska
Extension Cropping Systems Specialist
NDSU North Central Research Extension Center

NORTHEAST ND

Rain showers spread across the region in the last week. Crops are looking very good with adequate soil moisture and sunny warm days. Most of the wheat crop was sprayed with herbicide in the last week. Soybean and canola weed control is also fully underway although winds are dampening progress. Leaf disease in the wheat is very low; only a little tan spot has been scouted. Flea beetle populations are diminishing in canola. I saw my first soybean fields showing iron chlorosis. These fields were found in a high water table area. Variety choice is the number way to combat iron chlorosis. NDSU’s 2017 soybean IDC evaluations can be found for Round-up/Extend varieties here: https://tinyurl.com/y9qk4hah and for conventional and Liberty Link varieties here: https://tinyurl.com/y7hck4nw. If your soybean is not performing how you anticipated against IDC, check how the soybean variety tested in our native soil above. Ratings from NDSU research can differ from IDC ratings from company publications.

Lesley Lubenow
Area Extension Specialist/Agronomy
NDSU Langdon Research Extension Center
SOUTH-CENTRAL

The region’s NDAWN station data indicate rain during the current month (June 1-12) ranged from 1.2 inches (Brampton and Cooperstown) to 4 inches (Jamestown), with the Carrington REC receiving 2.6 inches. Alfalfa is flowering and harvest will proceed with cooperative weather. Winter wheat is flowering, and winter rye is in the wetary ripe seed stage. Early seeded (late April) barley is in the full boot to early head emerging stages, and spring wheat is in the flag-leaf stage. Foliar fungicide application for scab suppression in barley is recommended when main stems are fully headed. Field pea is beginning to blossom. Corn planted during the first week of May has 5-7 leaves (V5-7 growth stages). Based on NDAWN growing degree day units accumulated from a May 1 planting date to June 12, the region’s corn ranges from 175-250 units or 2-3 leaves ahead of the long-term average for the same period. The current corn stages are good for side-dressing corn with N. Mid-May planted soybean and dry bean are in the 2\textsuperscript{nd}- to 3\textsuperscript{rd}-trifoliate leaf (V2-3) stages.

Greg Endres
Extension Cropping Systems Specialist
NDSU Carrington Research Extension Center

SOUTHWEST ND

Everything is looking nice and green around Dickinson. More rainfall has fallen over the weekend, NDAWN recorded 0.91 inch in Dickinson between June 6\textsuperscript{th} and June 12\textsuperscript{th}, and 1.57 inch in Mott, 0.54 inch in Beach, and 0.44 inch in Hettinger over the same period of time. Showers continue to be scattered so there are some who still need rain and others who have received plenty.

A few sunflower acres were still being planted in the past week. Some still are planning to plant forages and cover crops. Winter wheat in the region is beginning to head out, small grains are anywhere from just emerging up to jointing, some canola is beginning to bolt, and overall crops are looking good. There are some parts of the region dealing with wind and hail damage. As for now there is not much for disease in the region. Hay is beginning to be cut in the region, a friendly reminder to allow adequate time for drying to avoid high moisture content in the bales and risk of thermal expansion and fire.

Ryan Buetow
Extension Cropping Systems Specialist
NDSU Dickinson Research Extension Center
WEATHER FORECAST

The June 14 through June 20, 2018 Weather Summary and Outlook

This past week brought widespread rain to much of the North Dakota Agricultural Weather Network (NDAWN). One inch or more rain fell across even more areas than what occurred last week (see Figure 1). Usually this time of year the rains tend to be more hit and miss, but widespread rains occurred on two occasions in the past week and I would not be surprised if we record widespread rains in the next seven days as well.

Figure 1 Total Rain for the period of June 6 through June 12, 2018

Much of eastern North Dakota and northwestern Minnesota, as well as eastern Montana recorded temperatures just a bit above average these past seven days with temperatures 1° to 3° above normal. Much of central North Dakota was much warmer with temperatures 5° to 8° above average (see Figure 2). The past month has been quite warm, but the odds favor the next seven days recording temperatures below average at most of the NDAWN stations.
A storm system has developed in the northern Rockies and will be moving across the area in the next 24-30 hours. Thunderstorms are expected to develop later today (Thursday) in western North Dakota and then move east overnight. Some severe weather, as is often the case this time of year, should be expected. Although amounts of course will vary, many parts of the area should see some rainfall from this system. Then over the weekend, yet another storm system will be moving across the Northern Plains and that system may bring two or three waves of rain with it. Each wave probably hitting different locations, but this weekend will be another period where many areas will record at least some precipitation. The weekend storm coming in after a cold front on Friday morning, will likely reinforce the cooler air already in place by that time, plus the cloudiness associated with the rain will also keep most areas on the cool side for the middle of June. In turn, these next seven days are expected to be cooler than normal for much of the region with the one possible exception being the southeastern corner of North Dakota into west central Minnesota. With these many chances of rainfall, clearly any worries that 2018 would be similar to 2017 will not be a concern anytime soon. June is historically the wettest month of the year and there will likely be dry periods coming in July and August, there almost always is, but so far, with a few exceptions, dry is not an immediate concern. My projected growing degree days (GDDs), Base 50°, 44° and 32° for the period of June 14 through June 20, 2018 is presented in Figure 3.
Using May 5 as a planting date, the accumulated wheat growing degree days (Based 32°F) through June 12, 2018 is presented in Figure 4. You can find your exact GDDs for your planting date(s) at: [https://ndawn.ndsu.nodak.edu/wheat-growing-degree-days.html](https://ndawn.ndsu.nodak.edu/wheat-growing-degree-days.html)
Using May 10 as a planting date, the corn accumulated growing degree days through June 12, 2018 is presented in Figure 5. You can find your exact GDDs for your planting date(s) at: https://ndawn.ndsu.nodak.edu/corn-growing-degree-days.html

**Figure 5 Accumulated Corn Growing Degree Days from May 10 through June 12, 2018**

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Daryl Ritchison  
Meteorologist  
Interim Director of the North Dakota Agricultural Weather Network
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This publication will be made available in alternative formats for people with disabilities upon request (701) 231-7881. This publication is supported in part by the Crop Protection and Pest Management Program [grant no. 2017-70006-27144 / accession 1013592] from the USDA National Institute of Food and Agriculture.