



NC Cooperative Extension - Perquimans County Center

March 31, 2022

Corn Planting Considerations

Uniform Emergence

As the time draws near for 2022 corn planting, what are some of the biggest factors to help position yourself to have a successful crop? Other than starting with adequate pH and fertility, starting with uniform emergence is the first step. Studies have shown corn emergence on the same day vs three days later shows a yield difference of an average of 50 bushels per acre. With a September future price of \$6.75, uniform emergence could lead to \$337.50 per acre difference. Also making sure that every row unit on your planter is fine-tuned will make a huge difference. Randy Dowdy has found differences as high as 150 bushels between rows on his planter just from one simple part replacement. Slowing your planting speed down to ensure seed placement could be another key. Lastly reviewing seed vigor when selecting hybrids and planting depth could be the last things to consider.

Avoid Low Temperatures & Excess Rain

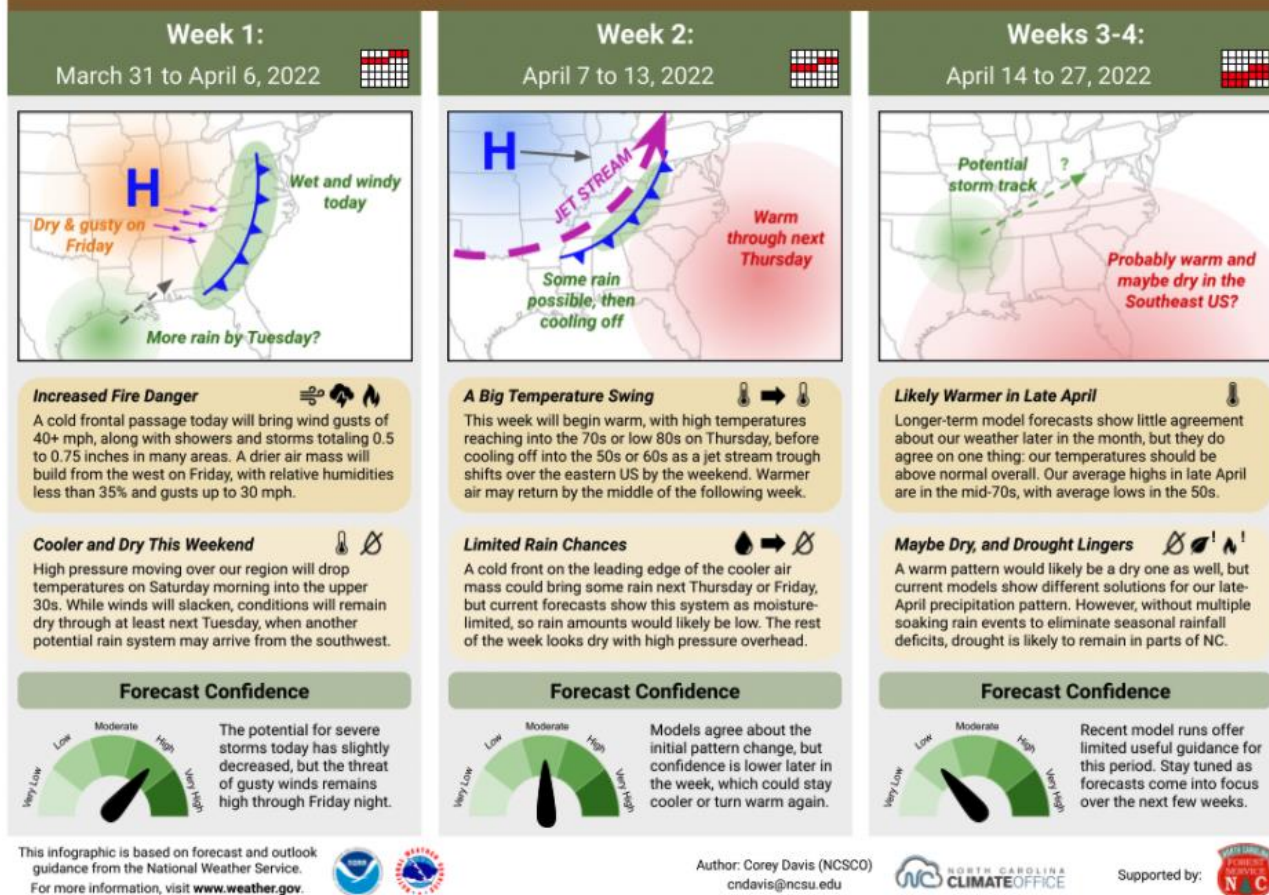
NC State Extension Specialist Ron Heiniger says to plan for 40 to 50 growing degree units (GDU's) to be accumulated the 4 days after planting. What does this mean and how do you calculate GDU's? The formula is $(\text{Daily Maximum temperature } ^\circ\text{F} + \text{Daily Minimum temperature } ^\circ\text{F}) \div 2 - 50 = \text{Growing Degree Units}$. There is an upper base limit of 86°F and a lower limit of 50°F for corn. If the daily high is higher than 86°F, then 86°F is used for the daily max. If the daily minimum temp is less than 50°F, then 50°F is used. When planning to plant, check the upcoming weather, do the GDU calculations and if no big rainfalls occur following planting, excellent emergence should be achieved. When determining if rainfall will be a factor Dr. Heiniger suggests no more than 2" of rainfall for the first 7 days following planting should occur to allow for adequate germination. The North Carolina Climate Office has produced a tool to help with GDU calculations based upon your specific latitude and longitude. You can find this tool by clicking this link: <https://products.climate.ncsu.edu/ag/corn/>. Lastly, checking your soil temperature at 2-inch depth and waiting to plant when soil temperatures reach at least 50 °F.

Seeding Rates & Early Season Nitrogen Fertility

The last couple planting considerations involves seeding rates and preplant nitrogen fertility. Below is an image from a seeding rate trial that shows yield at different plant populations and row spacing. As a general rule for 2022, seeding rates utilizing flex hybrids at 26,000-28,000 for situations with lower yield potential and 33,000-38,000 for higher yielding potential is recommended. Lastly, if your goal is to reduce cost, below are a couple slides showing corn yield at varying N rates at planting and layby as well as questions if considering to use starter fertilizer or not.

For questions or more information, contact Dylan Lilley at 252-426-5428.

Short-Range Outlook for North Carolina



Planting Guidance Chart for 36.188°N -76.465 °E Based on Today's Date

Corn germination is based on an accumulation of at least 40-50 GDDs over the next 4-5 days (of the current date, not the planting date). This table shows the predicted accumulation of GDDs over the next 5 days, starting with each date.

Mon	Tue	Wed	Thu	Fri	Sat	Sun
Mar 28	Mar 29	Mar 30	Mar 31	Apr 1	Apr 2	Apr 3
			42	43	38	41
Apr 4	Apr 5	Apr 6	Apr 7	Apr 8	Apr 9	Apr 10
43	46	38	49	42	32	21

Numbers in each box indicate the forecasted 5-day accumulated GDDs, starting on the given date. Daily GDDs are based on NWS Forecasts for days 0-7, and on historical averages for days 8+.

Please Note: Actual conditions may differ from local forecasts and historical averages. We recommend you return to this tool for updated forecast information.

(GDD forecast for Hertford, NC from Climate Office: <https://products.climate.ncsu.edu/ag/corn/>)

Planting Dates and GDD to Silking to Avoid In 2022

Planting Date	Hybrid Maturity – Growing Degree Days to Silking			
	1200	1300	1400	1500
	----- First Day of Silking -----			
April 5	June 17	June 21	June 25	June 29
April 10	June 18	June 22	June 27	June 30
April 15	June 21	June 25	June 29	July 3
April 20	June 23	June 28	July 2	July 6
April 25	June 26	June 30	July 3	July 8
April 30	June 29	July 3	July 7	July 11
May 5	July 2	July 6	July 10	July 14
May 10	July 5	July 9	July 13	July 18
May 15	July 8	July 12	July 16	July 20

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Managing Through Avoidance

Avoid Low Temperature and Excess Rain



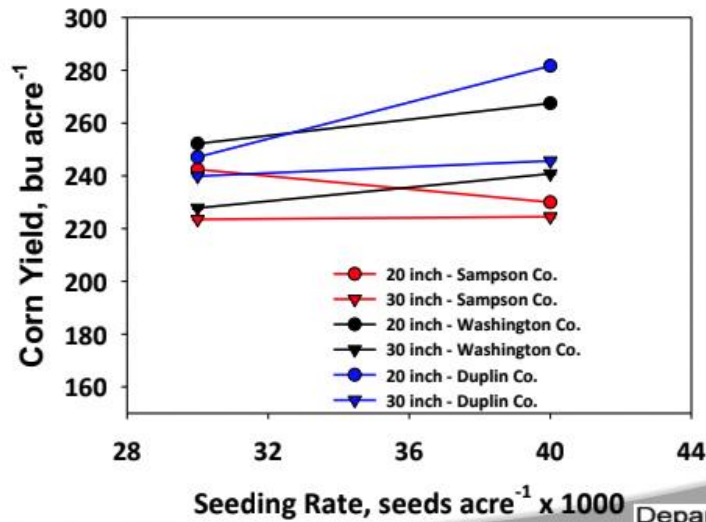
1. Seeding to 3-Leaf (V3) -

- Aim to Plant so That 40 to 50 GDD are accumulated over the next four to five days
- No more than 2" of rainfall for the first 7 days following planting



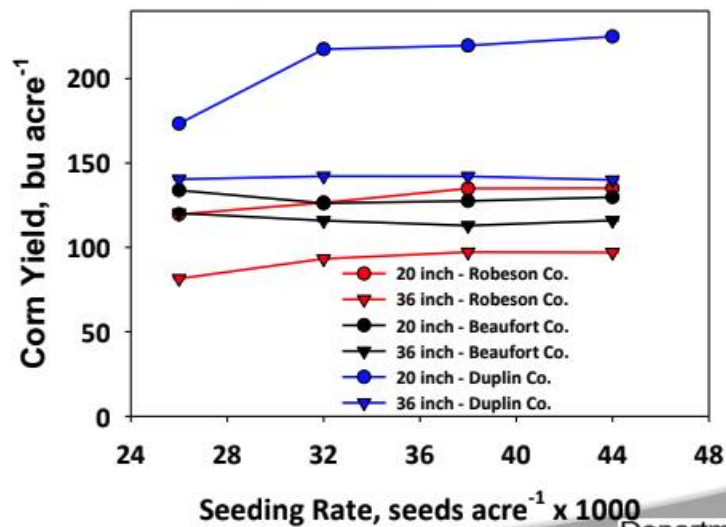
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Seeding Rate Impact on Corn Yield – 2020



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When to Apply N When I Need to Control Rate

	N Applied at Layby (Prior to V6)				
	0	50	100	150	200
N Applied at Planting	----- Corn Yield, bu per acre -----				
0	112.3	140.3	175.4	173.6	179.9
50	154.3	168.2	173.0	197.5	194.5
100	168.6	188.9	197.6	202.0	206.3
150	185.4	195.7	209.0	207.2	194.6
200	190.3	197.5	199.0	203.7	203.3



Should I Spend Money on Starter Fertilizer in 2022?

❖ Ask Yourself four Questions

1. Am I able to plant into a very good to idea soil environment?
2. Is my phosphorus (P) index above 40?
3. Do I have sufficient micronutrients available – Zn, B, Mn, etc.?
4. Do I have at least 1/3 of my N requirement applied at planting?

❖ If the answers to all of these questions is YES then consider dropping a starter application in 2022!!