



# CROP - TOP NEWS

## July Agronomic Updates



- *GDU Update: You want to see this!*
- *Heat stress during Pollination notes*
- *Be on the lookout for Rootworm Beetles!*
- *Corn & Soybean Water Usage*

## GDU Update: May 11th - July 19th

***It is forecasted that we will be caught up to 2021s GDUs by August 2nd!***

Location	2022 GDUs May 11th - July 19th	Normal GDUs	2021 GDUs May 11-July 19th
Elbow Lake, MN	1313	1189	1364
Morris, MN	1371	1263	1422
Fergus Falls, MN	1291	1201	1384
Wahpeton, ND	1388	1205	1452

[Pioneer GDU Calculator](#) [NDAWN GDU Map](#)



# TEMPERATURE & POLLINATION

As we look at higher temps going into pollination, questions arise on how much this could impact pollination. Typically we do not see pollination impacted in the northern corn belt due to temperature. Dry conditions usually play a larger factor. A high portion of mature pollen is usually released from corn anthers in mid-morning when temps are cooler, depending upon environmental conditions. A minimum of 100 grains of pollen per square centimeter per day is needed to successfully pollinate a corn field. Pollen may lose viability within a few minutes if air temperatures are high (approximately 104 degrees F or greater) and water deficit stress is present. Pollen grains contain about 80% water when first shed. These pollen grains die when the water content decreases to about 40%.

A lot of corn is successfully pollinated under higher temperature conditions. If soil moisture is adequate and the corn plant can transpire water rapidly enough to supply necessary water to the pollen, the pollen remains viable long enough to properly shed and complete the fertilization process. However, if the water supply is inadequate, pollen can die prematurely and not complete the fertilization






# NORTHERN & WESTERN CORN ROOTWORM



Traditionally, Lorsban or a Lorsban product like Cobalt Advanced was a main go-to on corn rootworm adults because of its very quick knockdown and volatilization ("Gas") effect. However, all products in that family are no longer options. There is a little used product that also will provide quick knockdown.

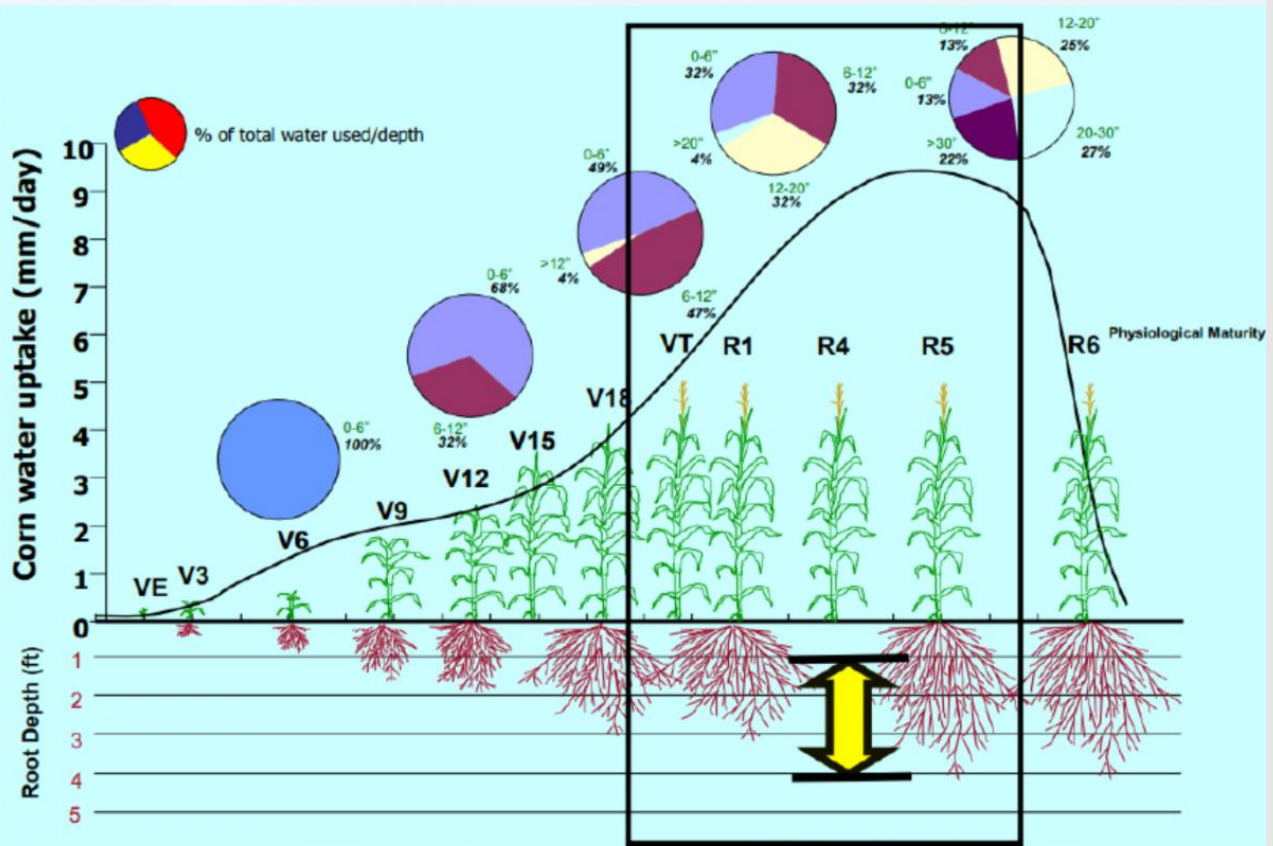
Although we haven't found any rootworm beetles YET this year. Its time to prepare to be scouting. We are prepared to have multiple 'sticky trap' trials (see pic above) to track rootworm population. If you have a corn on corn field that you'd be interested in sticky traps. Let us know! Here are 3 weeks of sticky trap results from last year.

<b>Corn Rootworm</b> <i>Sticky Trap Trial</i>			
	WEEK 1	WEEK 2	WEEK 3
HERMAN	4	1.3	8
ELBOW LAKE	4	4	12
BARRETT	1	1	3
DALTON	10	8	19
TINTAH	13	9	6

RED RIVER MARKETING CO



# CORN WATER USE



This chart serves as a good reference to get calibrated on rooting depth and water uptake this time of year. As the corn crop begins to pollinate (VT/R1), it is still pulling 96% of its water in the top 12". It isn't until R2 (blister) that it starts pulling from greater than 12". Managing water in the top 12" is still a priority. N applications should also occur from VT-R2 to be effective for grain fill.





# SOYBEAN WATER USE

Growth Stage	Daily Water Use Rate	Water Use Per Stage	Cumulative Water Use
	———— inches ————		
2 <sup>nd</sup> Trifoliolate (V2)	0.08	0.56	1.00
4 <sup>th</sup> Trifoliolate (V4)	0.09	0.63	2.19
6 <sup>th</sup> Trifoliolate (V6)	0.14	0.98	3.17
Beginning Bloom (R1)	0.20	2.00	5.17
Full Bloom (R2)	0.25	1.75	6.92
Early Pod Development (R3)	0.28	1.96	8.88
Pod Elongation (R4)	0.32	3.20	12.08
Early Pod Fill (R5)	0.33	3.30	15.38
Mid Pod Fill	0.32	3.20	18.58
Full Pod (R6)	0.25	1.75	20.33
Lower Leaves Yellowing (R7)	0.15	1.50	21.83
Maturity (R8)	0.10	1.00	22.83

Seasonal soybean water use can range from 20 to 26 inches during the growing season, with over 60% of total water use occurring during the R1 to R6 growth stages. The majority of soil water uptake by soybeans occurs within the top 2 to 3 feet of the soil profile. Adequate water is most critical during pod development and seed fill (R3-R6). Most of the soybeans are currently R1-R2. I have heard of a some early planted fields nearing R3.

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