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POPULATED PLACES

25,000 – 99,999

24,999 and less

State capital

- Grand Forks

- Dickinson

★ Bismarck

TRANSPORTATION

Interstate; limited access highway

Other principal highway

Railroad

PHYSICAL FEATURES

Streams: perennial; intermittent

Lakes

Highest elevation *in state (feet)*

3506

The lowest elevation is 10 feet above sea level.

NDSU

ta is 750

feet above sea level (Red River).



MINNESOTA

1

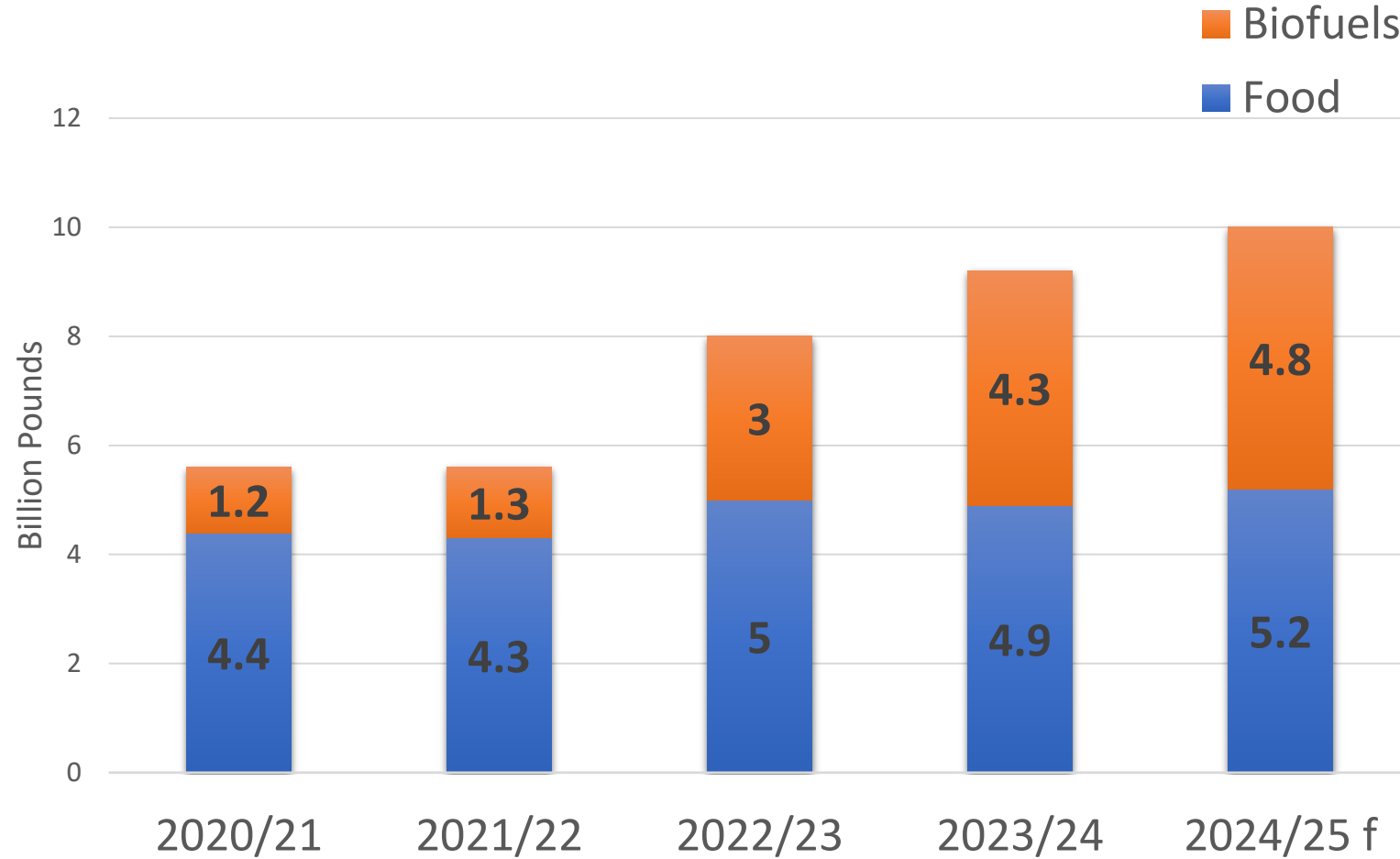


Canola Acres 2024

- 2.15 Million (+11%)
- 4 Billion Pounds (+15%)
- **U.S. – 4.9 Billion lbs.**
- U.S. – 2.76 Million Acres



Canola Oil – Domestic Use 2020-2025

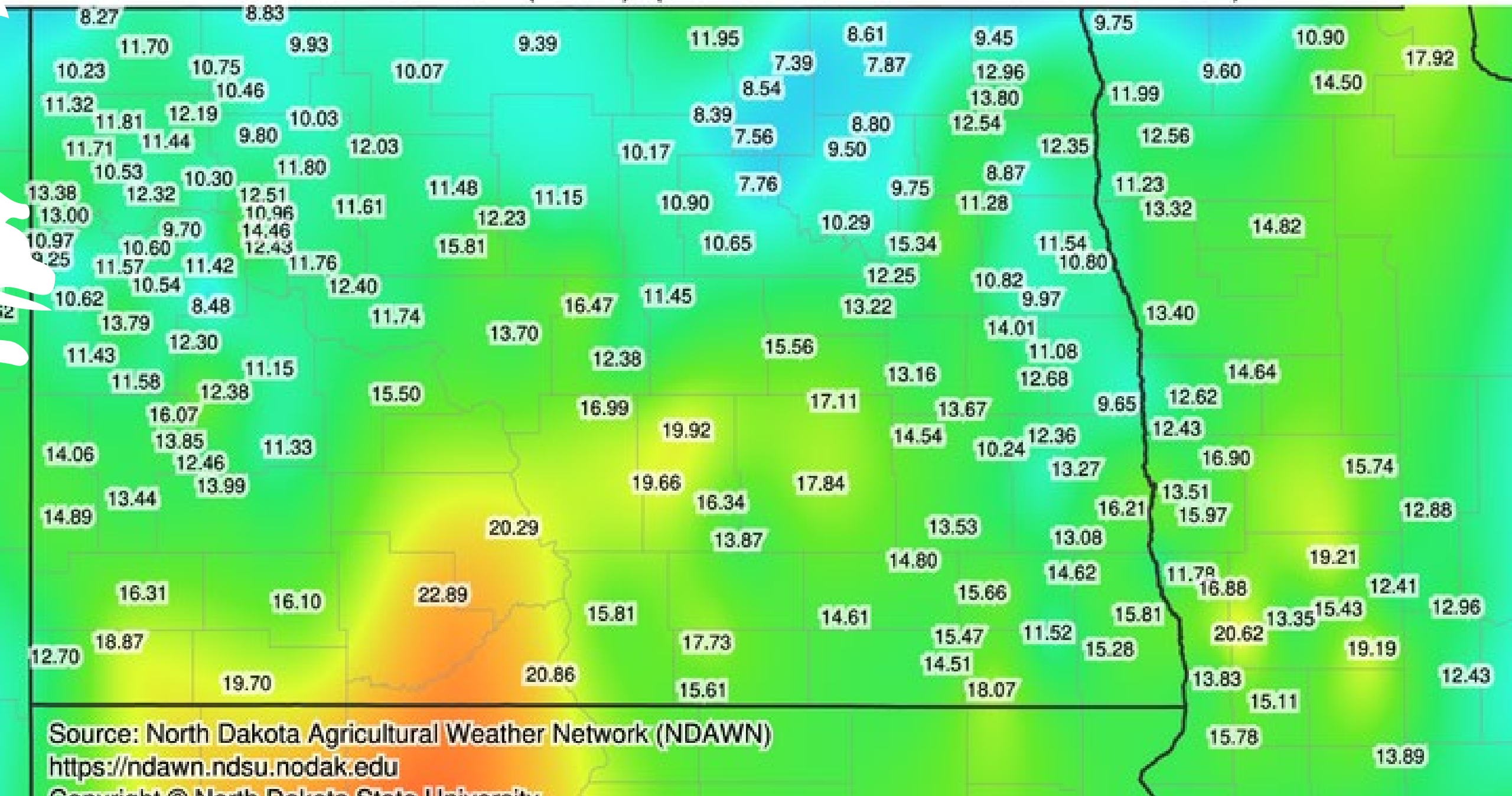


KEEP EVERYTHING IN
PERSPECTIVE!



7/29/2011

Total Rainfall (inch) (2023-05-01 – 2023-10-31)

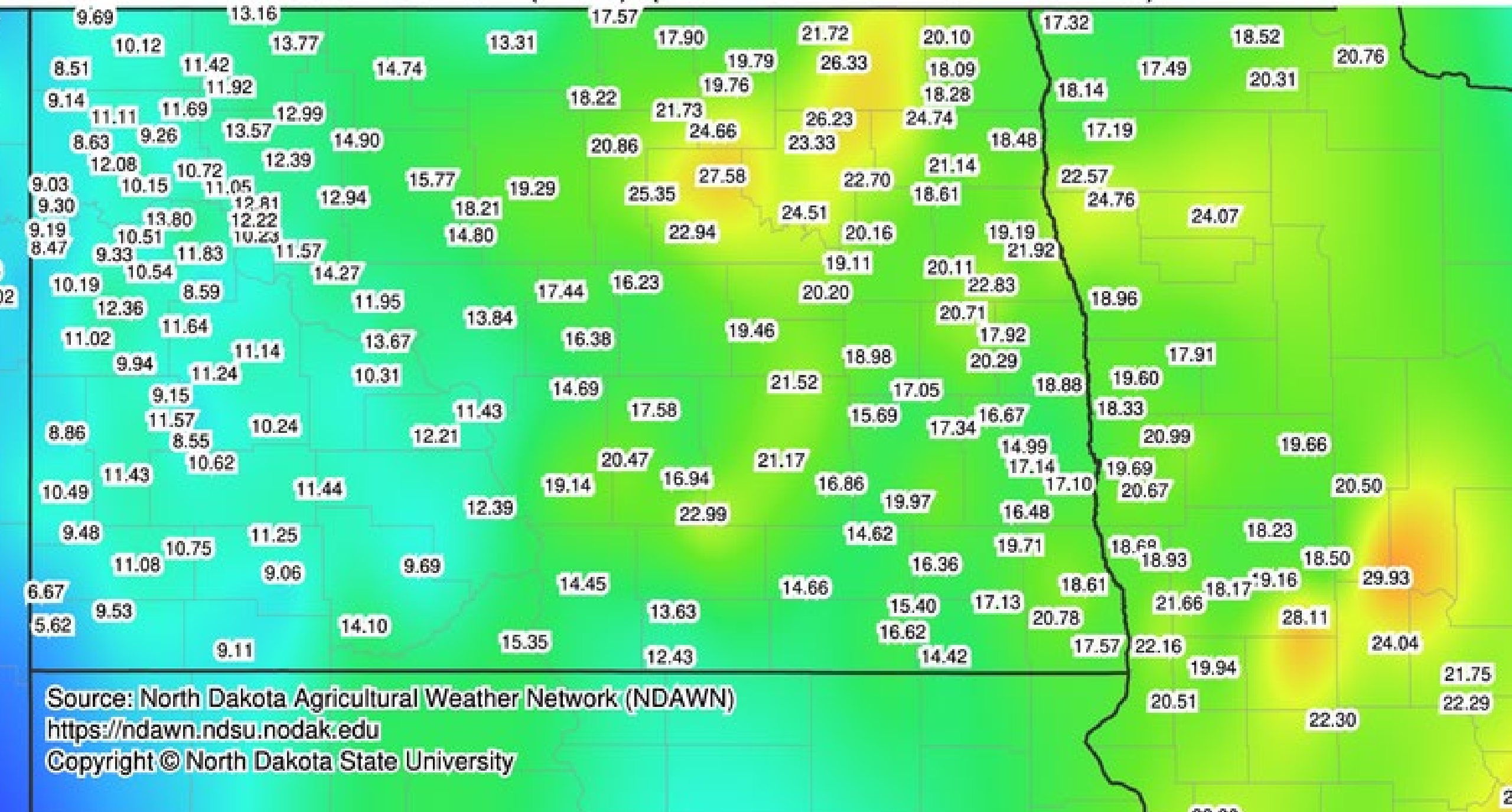


Source: North Dakota Agricultural Weather Network (NDAWN)

<https://ndawn.ndsu.nodak.edu>

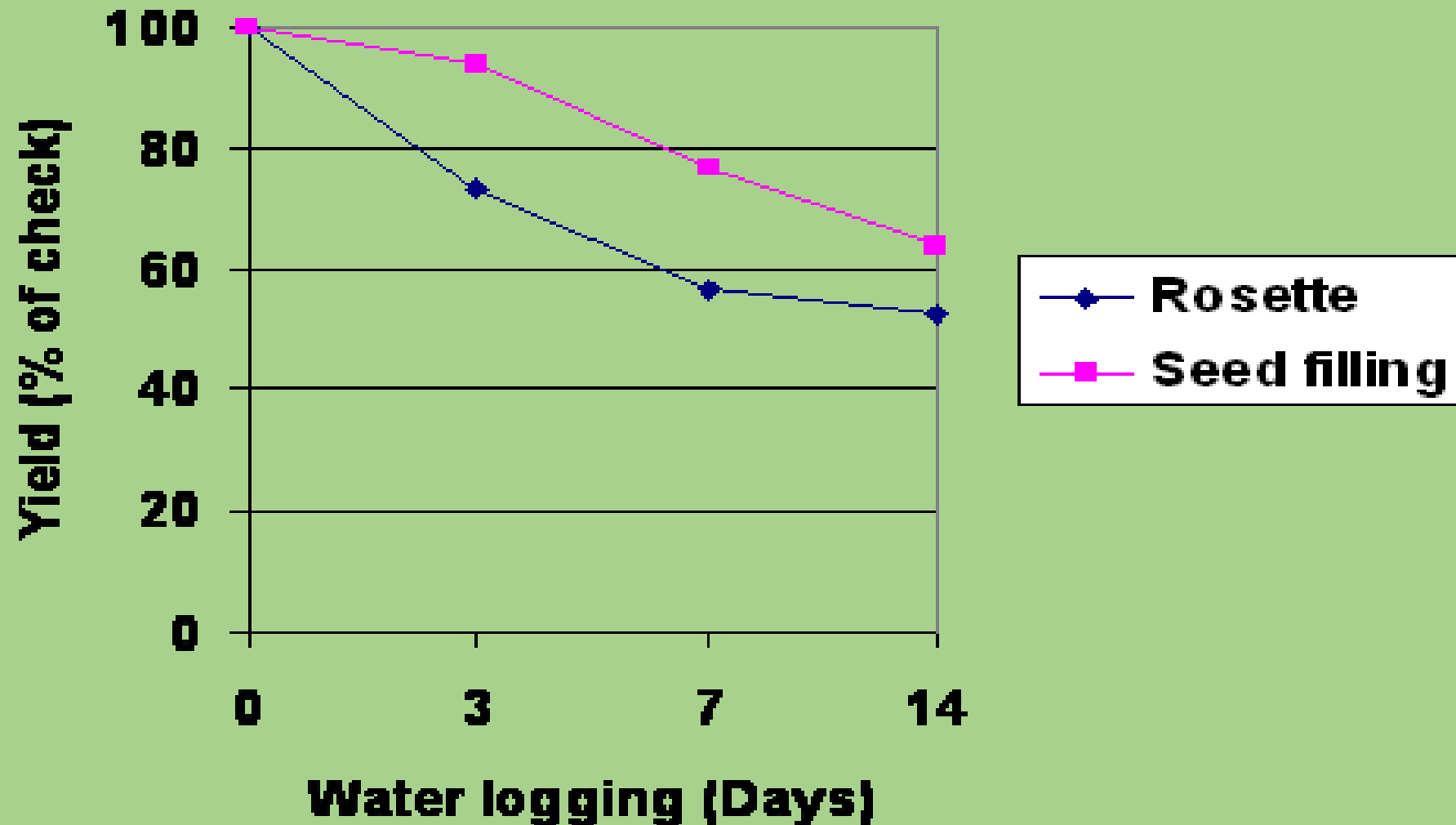
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Total Rainfall (inch) (2024-04-15 - 2024-10-29)



Source: North Dakota Agricultural Weather Network (NDAWN)
<https://ndawn.ndsu.nodak.edu>
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Effect of Water Logging on Yield





400# Loss (1 seed/sq. in. = 50#)

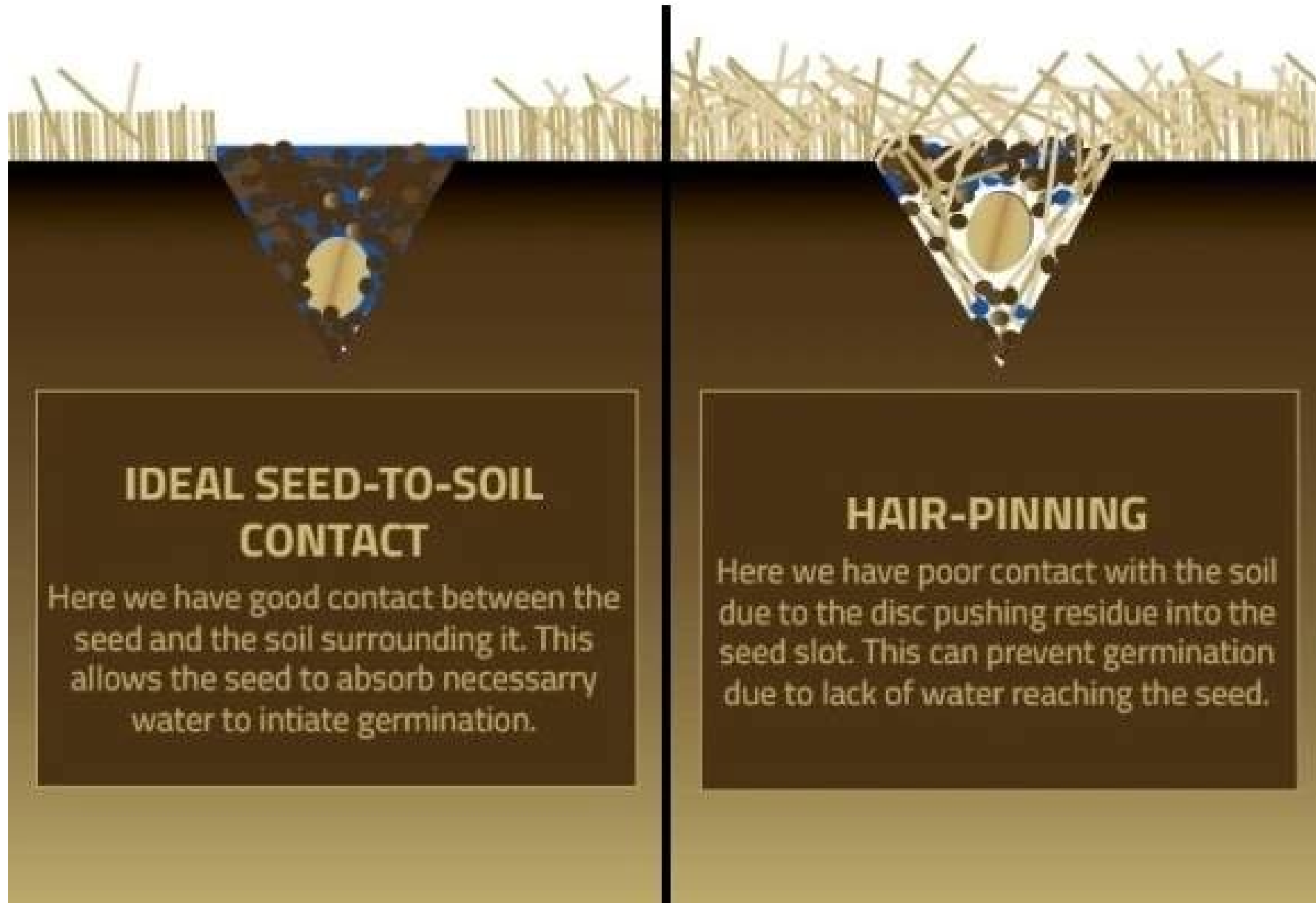


Harvest losses





HAIR-PINNING DIAGRAM





48 hours



Seed rates and depths?

Seed beds? Trash? Bare ground?

Planter type? **Reduce travel speeds!!**

Seed singulation! (Ideal)

8-12 plants/sq. foot (**originally 610,000 PLS**)

5-7 plants/sq. foot established (2-3/sq.ft)

(225,000-425,000 plants/acre)

Typically **60-70%** establishment rate?

Seeding Depths-----**.5-----1.5+?**



2010 Planting Date Trial -

	8.5% M	Stand	1st	End			
	Yield	Rating	Flower	Flower	Maturity	HT	Lodging
DATE	lbs/a	0-100	DAP	DAP	DAP	in	0-9
29-Apr	2967.6	52.5	52.3	72.1	97.8	40.8	2.5
10-May	3107.8	37.5	44.5	68.1	94.0	42.4	1.0
21-May	3559	26.3	43.5	64.8	94.0	42.4	1.8
1-Jun	3079.6	93.1	38.6	58.9	86.9	42.1	1.9
9-Jun	3160.9	85.6	38.5	61.9	87.3	43.9	4.3
LSD 5%	NA	21.8	0.5	1.0	0.8	NA	1.2

Row spacing?

Broadcast – can work -rain

6"/7.5" conventional (can reduce rates)

15" better stand ability (less seed cost)

20/22" some very successful growers (valley)

(early weed control critical)

Wider the rows must reduce seeding rates

(inter-row competition-lodging)

Larger plants-big stems-less lodging!



Sulfur (Sulfate....)

AMS \$450/ton (21-0-0-24) Sulfur 10-40#/acre

10# S \$4.50/acre

15#S \$6.75/acre

20#S \$9.00/acre

25# S \$11.25

**Sulfur deficiency -200-500# yield loss - can
exceed 1000# +++++ (short pods/poor fill)–**

N:S/ratio 7:1





9-22-21

Consider power strips!!





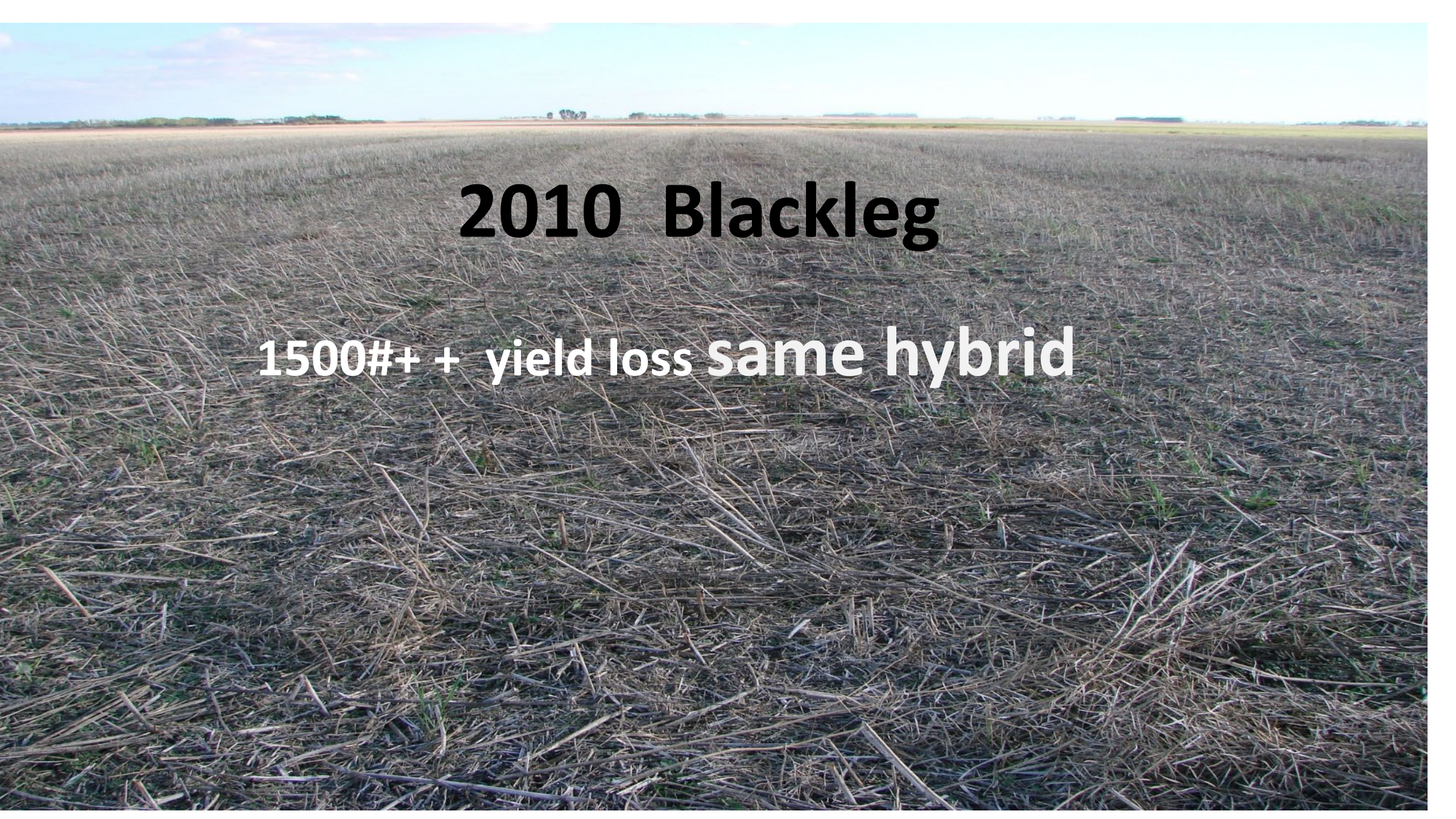


Canola Diseases

- Sclerotinia (white mold) forecast models)
- Clubroot (new 2013) Soil with **low PH**
- Blackleg (issue every-year) 4-year good
- Verticillium stripe (2014)
- Aster Yellows (**2007, 2012, 2024**)



7/9/2012

A wide-angle photograph of a large agricultural field. The foreground and middle ground are filled with a dense layer of dry, harvested crop residue, likely corn stalks, which are light brown and tangled. The field extends to a flat horizon line. In the far distance, a few small, dark silhouettes of trees or structures are visible against a pale, clear sky. The overall scene suggests a post-harvest landscape.

2010 Blackleg

1500#+ + yield loss same hybrid



Verticillium stripe/blackleg?





