

SWEET CORN YIELD IN RESPONSE TO NITROGEN

Matt Ruark
AJ Bussan
Mike Drilias
Mack Naber

RESEARCH UPDATE

- Three years of field studies in Hancock, WI
- Evaluating different aspects of nitrogen management

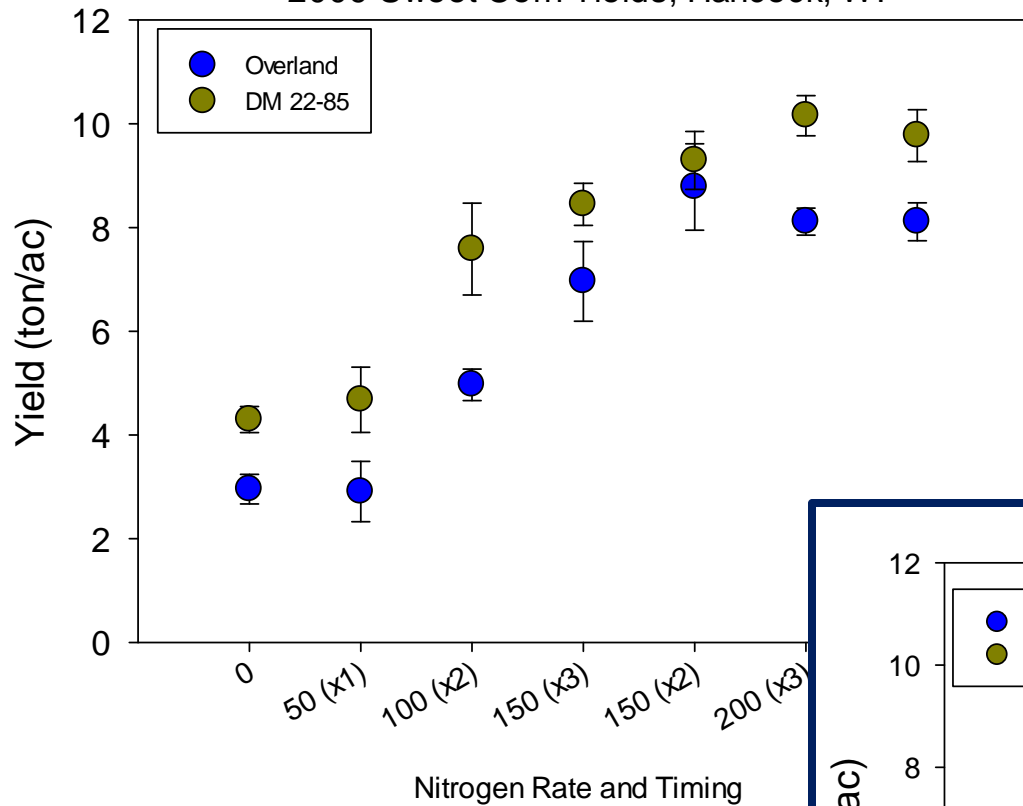
STUDY #1

Seven nitrogen rates (lb/A)

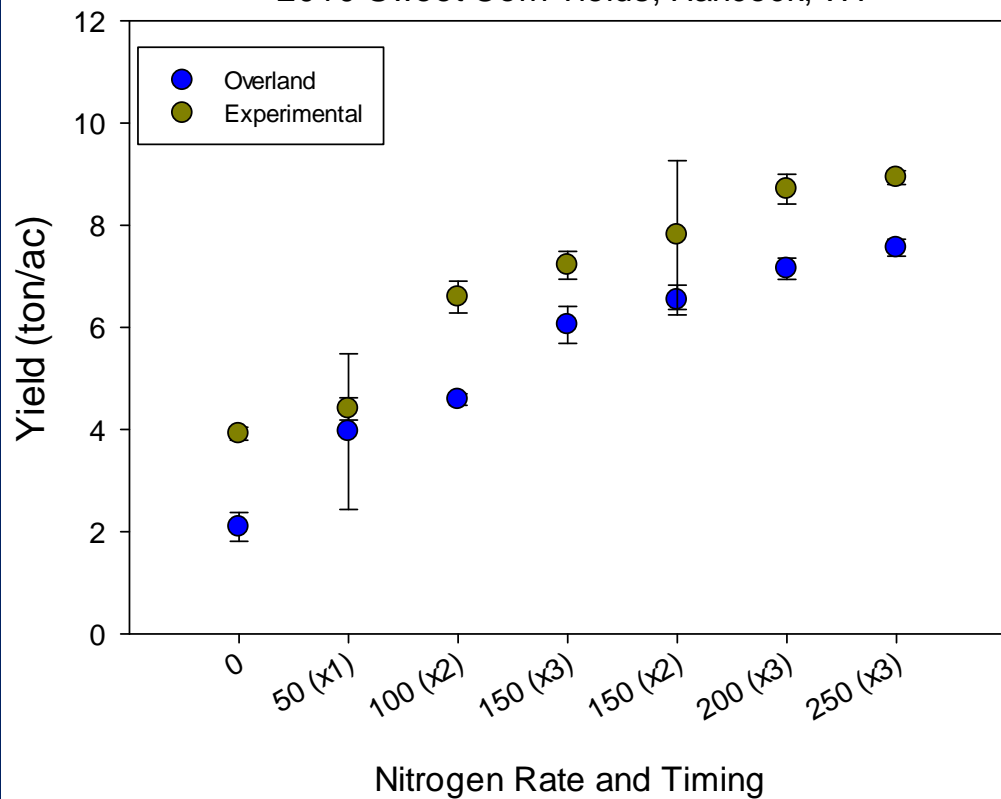
- 0
- 50 (V5)
- 100 (50 @V5, 50 @V8)
- 150 (50 @V5, 100 @V8)
- 150 (50 @V5, 70 @V8, 30 @tassel)
- 200 (50 @V5, 120 @V8, 30 @tassel)
- 250 (50 @V5, 170 @V8, 30 @tassel)

Two varieties: Overland & DCM 22-85

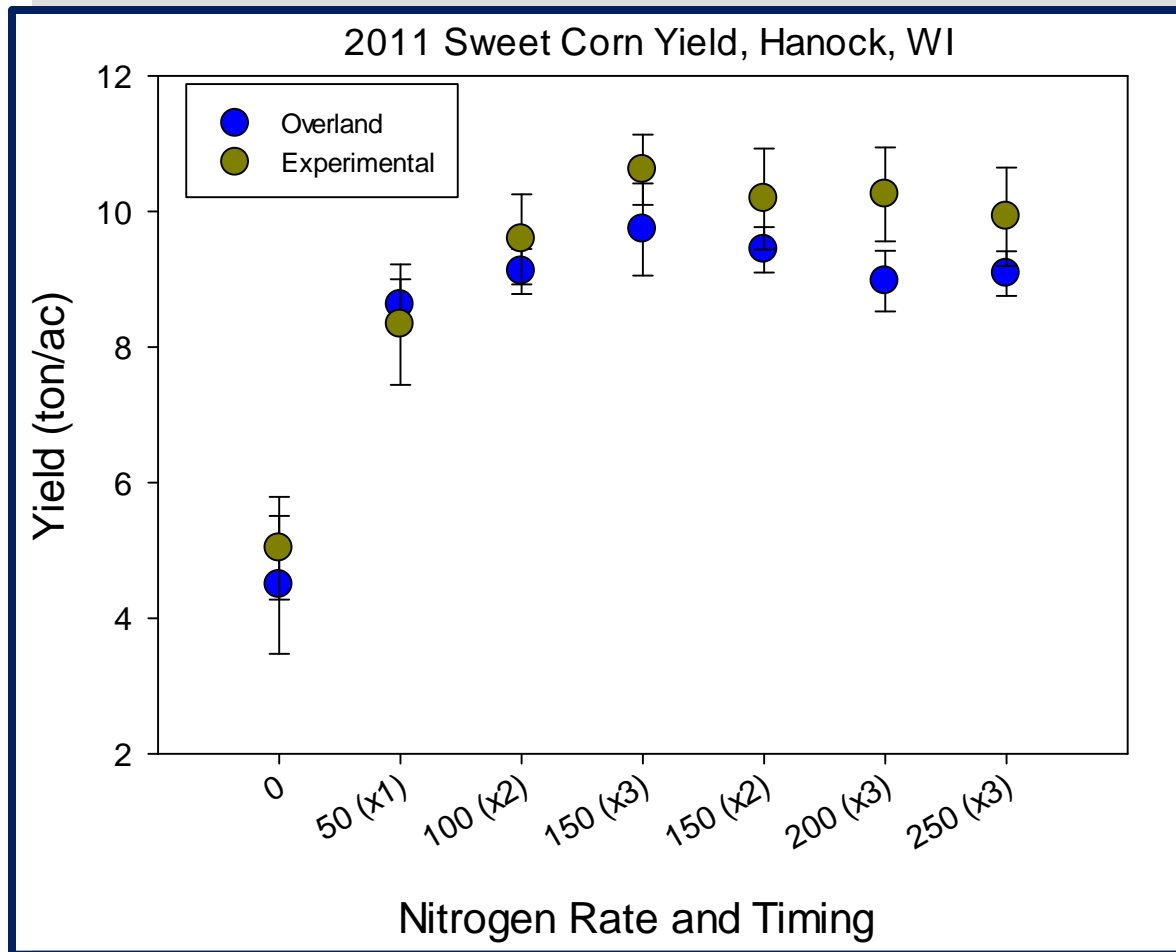
2009 Sweet Corn Yields, Hancock, WI



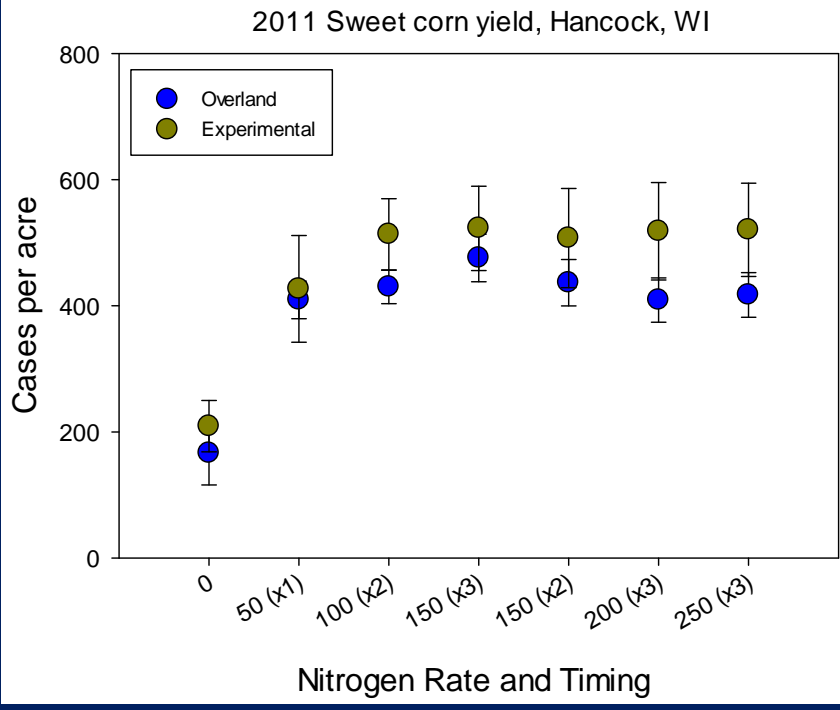
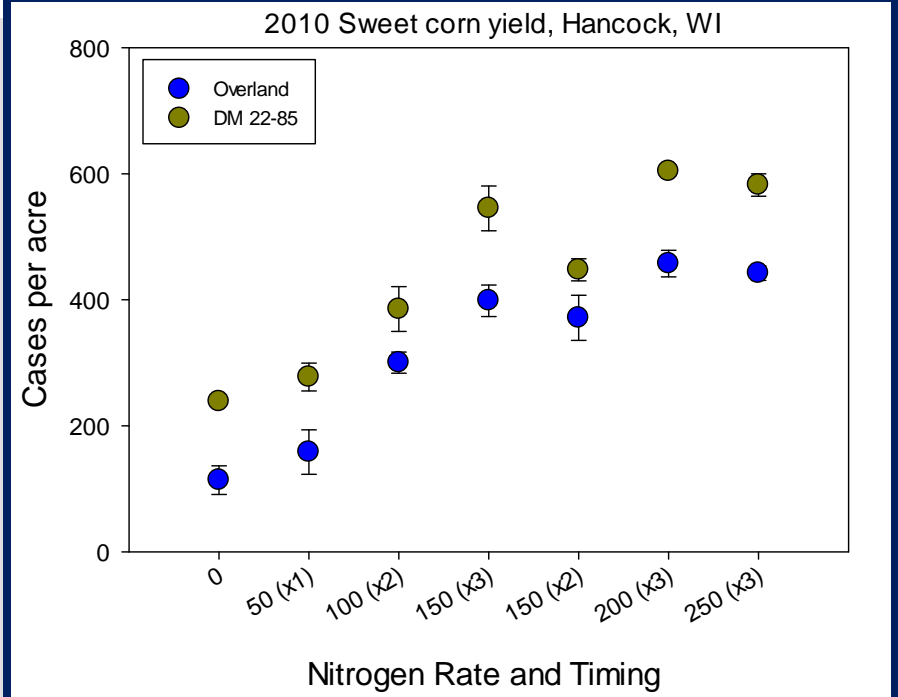
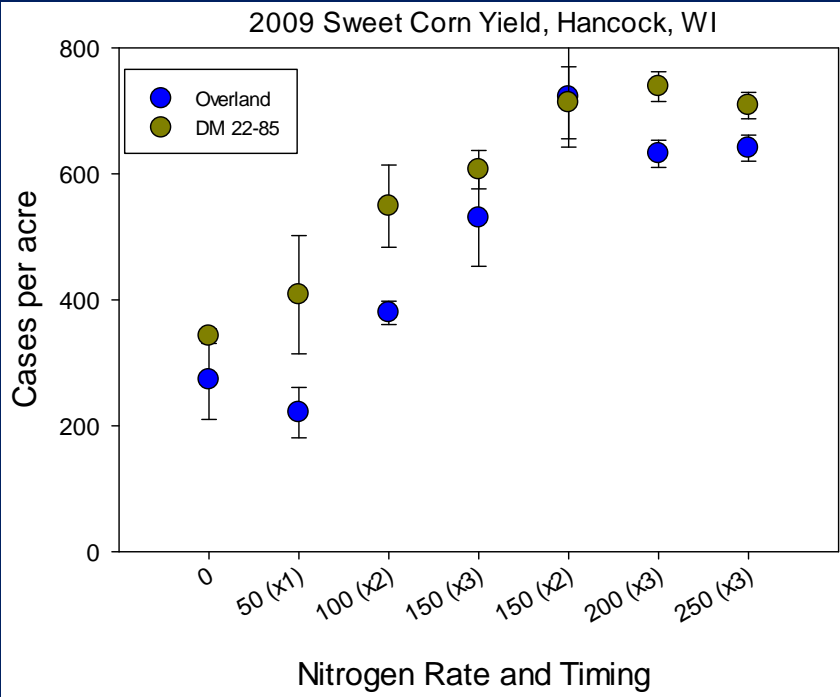
2010 Sweet Corn Yields, Hancock, WI



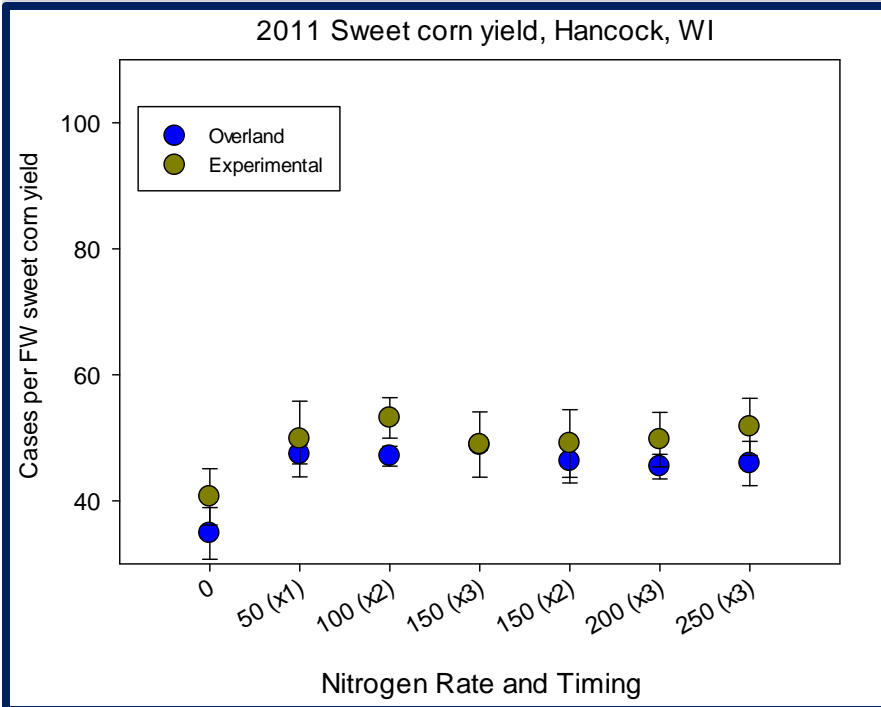
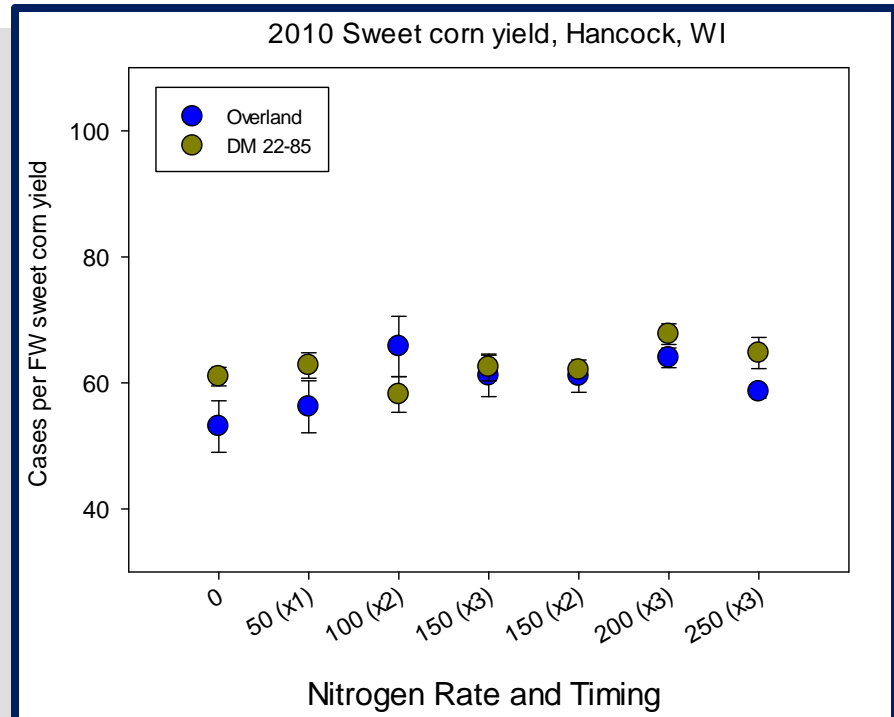
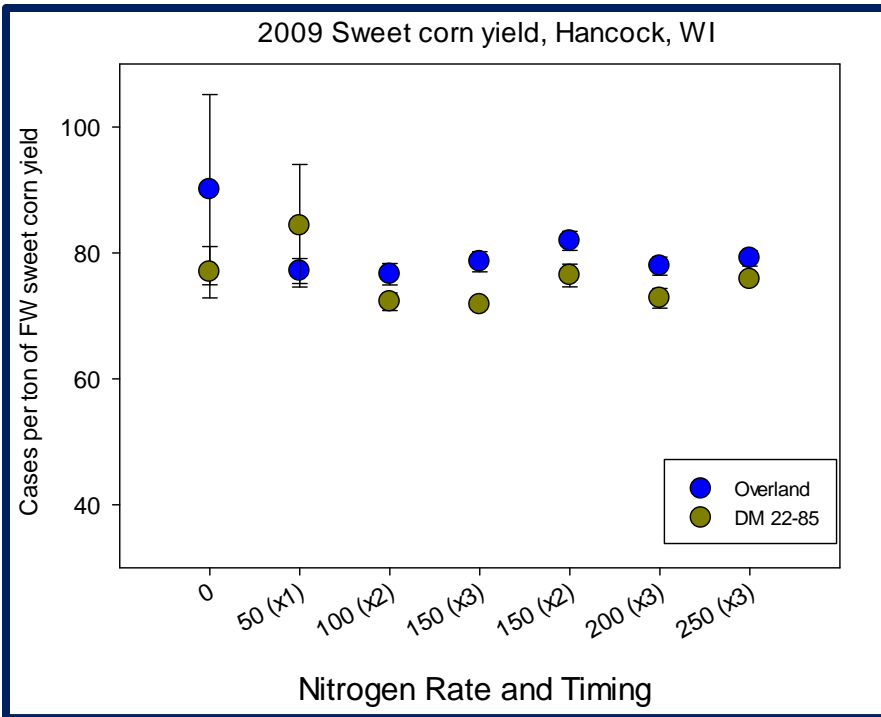
SWEET CORN YIELDS



Maximized between
150 and 200 lb/A of N



No advantage to over-applying N on a case per acre basis.



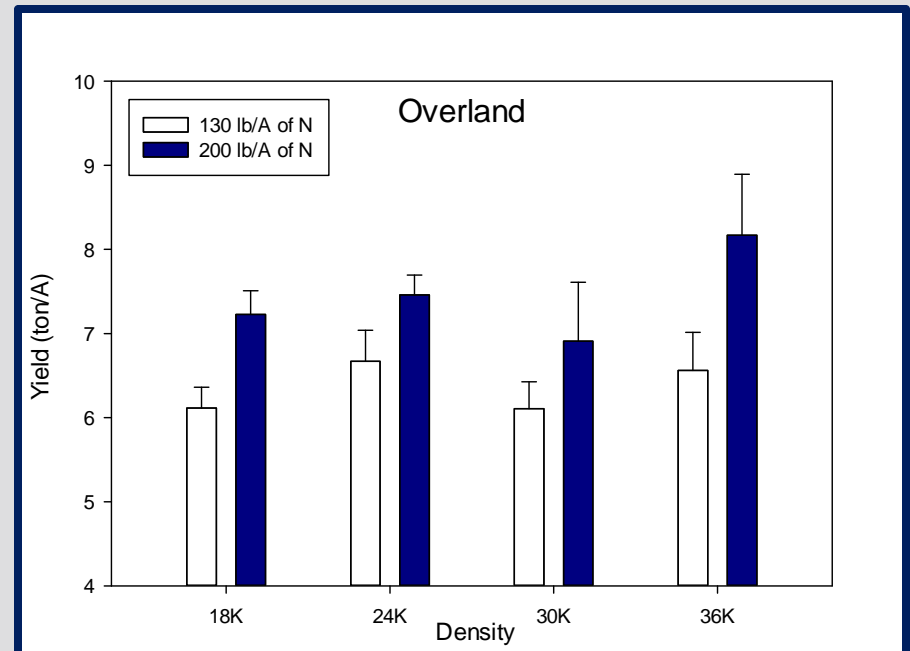
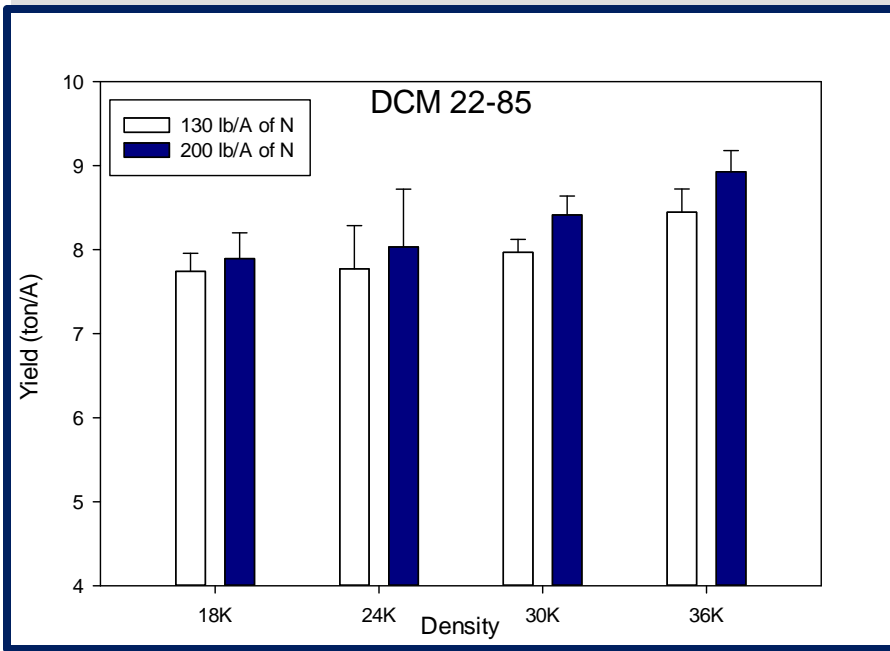
The ratio of kernels per total ear weight...

...different years result in different trends...

STUDY #2

- Two nitrogen rates
- 130 and 200 lb/A
- Two varieties
- Overland & DCM 22-85
- Four seeding densities
- 18, 24, 30, 36 K/A

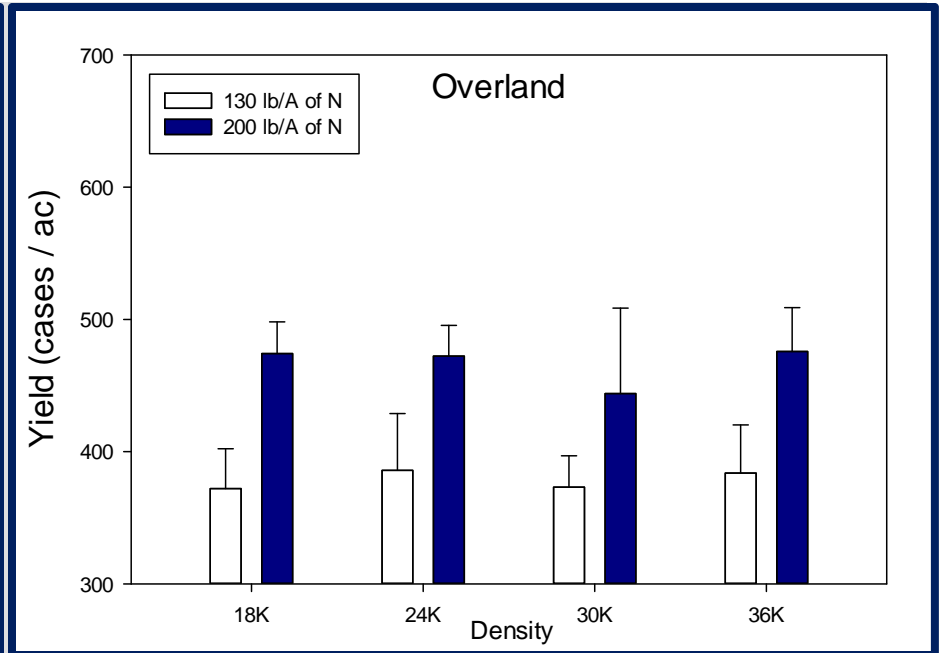
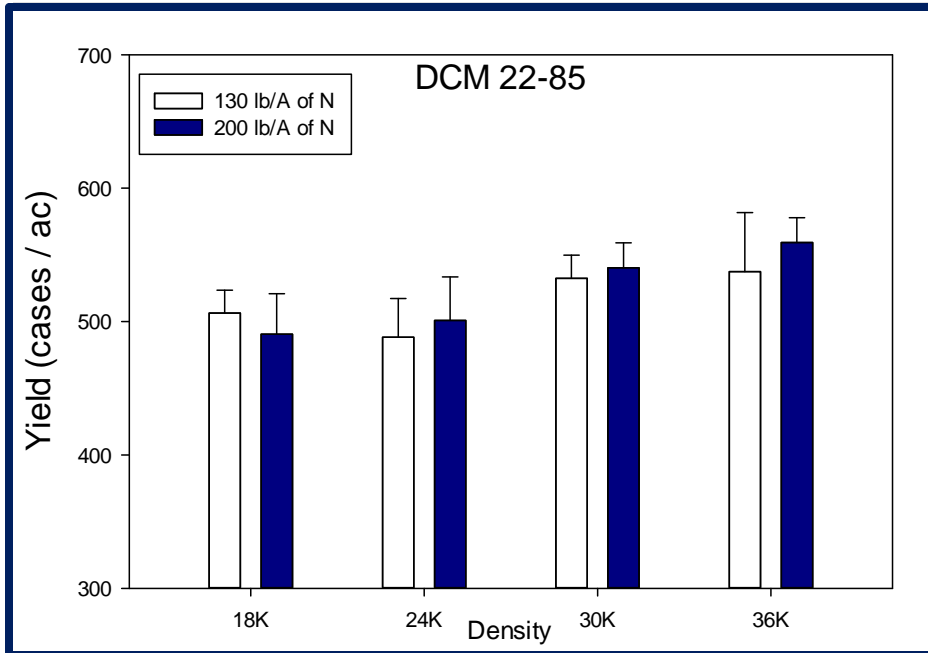
2010 SEEDING DENSITY



Newer variety is has less of a yield difference at 130 vs. 200 lb/A of N compared to Overland

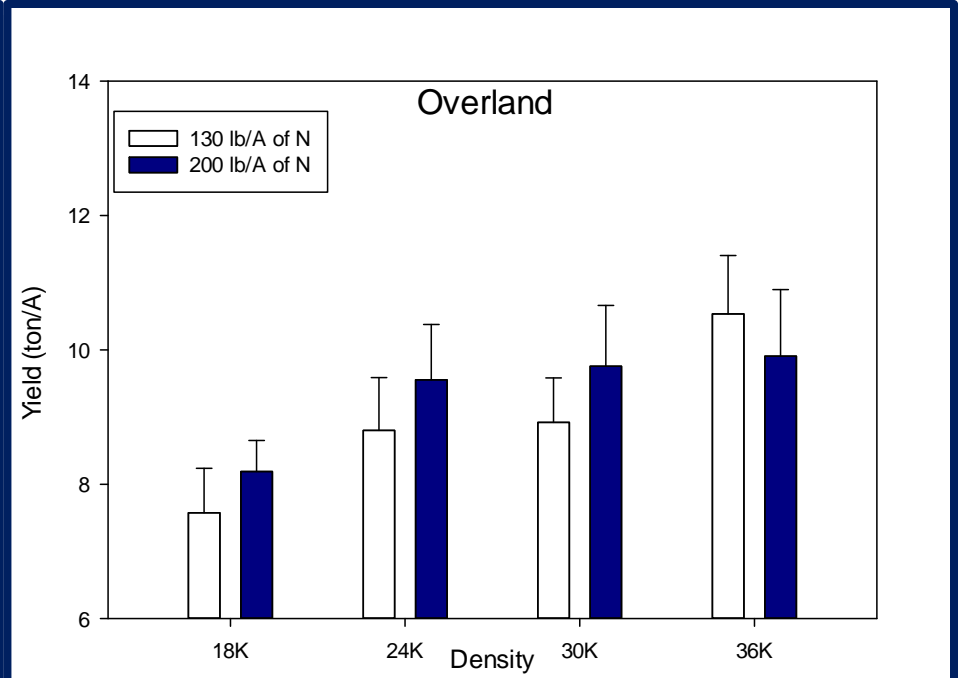
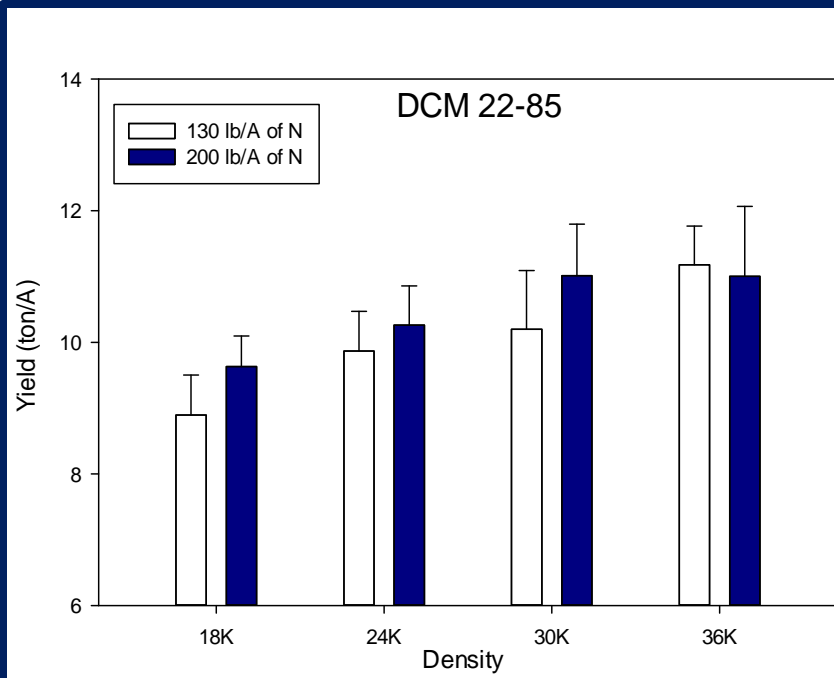
Slight benefit of increasing density on ear yield for 22-85

2010 SEEDING DENSITY

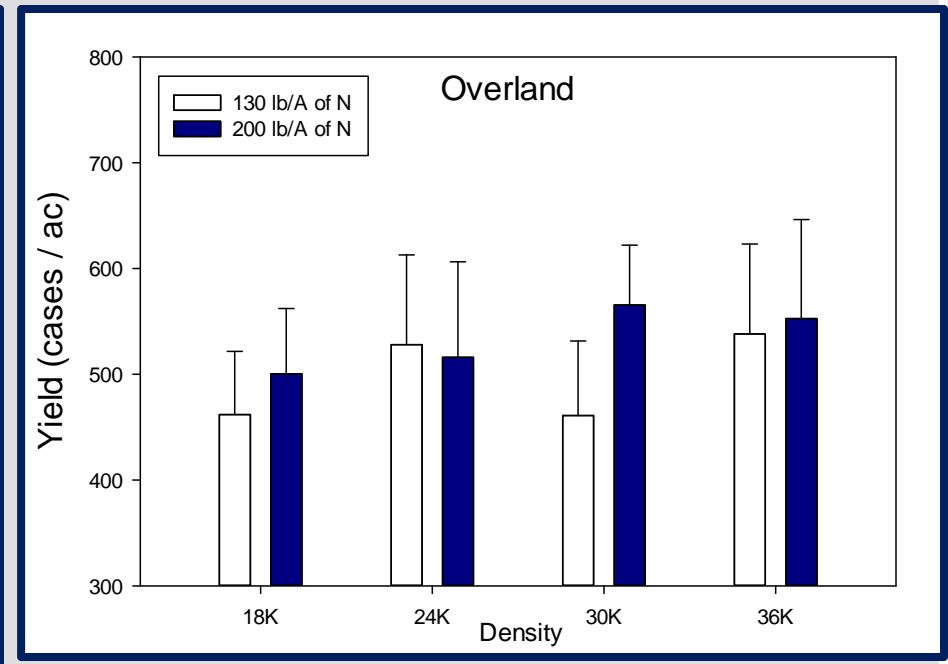
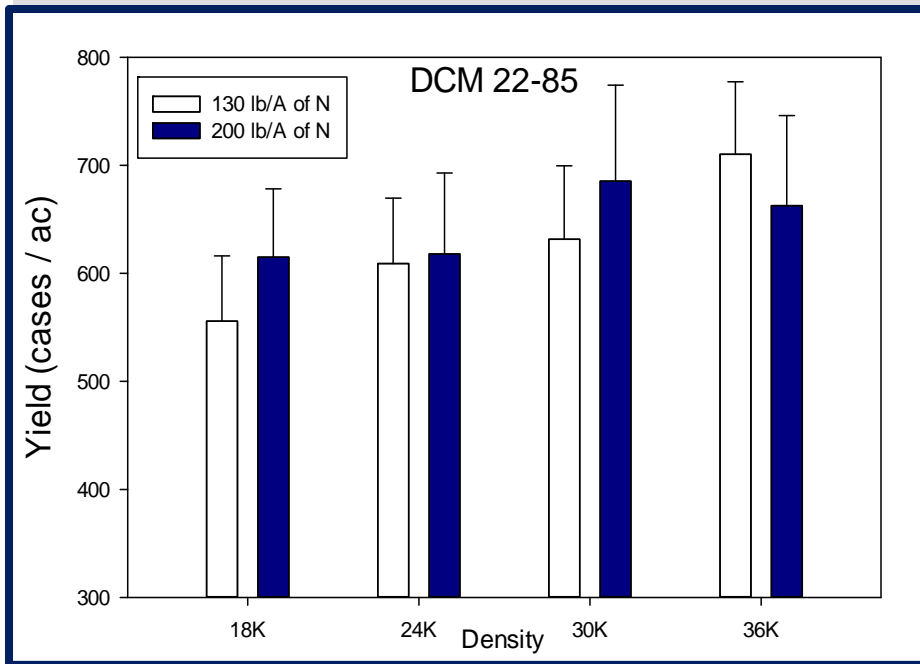


Varieties respond differently to seeding density with respect to “case” yield.

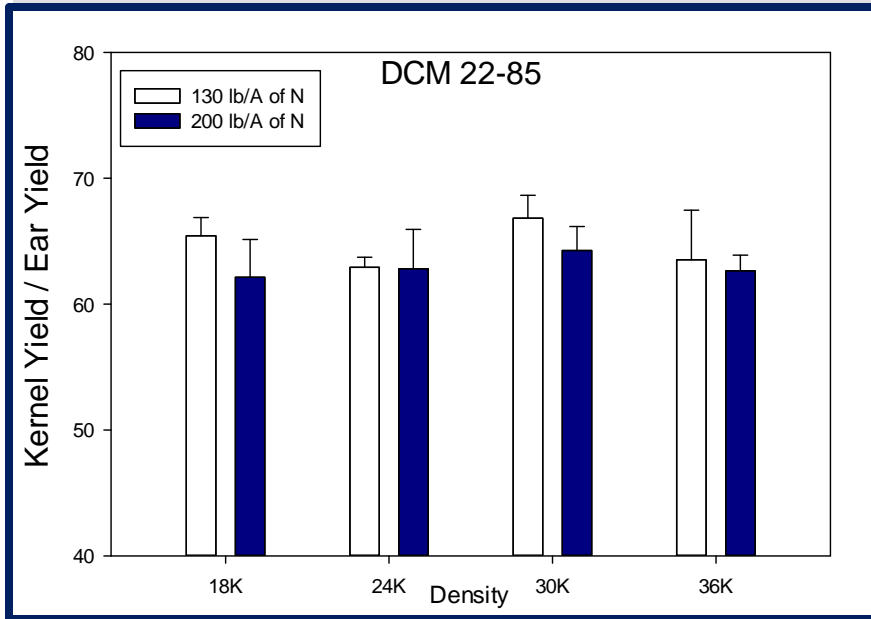
2011 SEEDING DENSITY



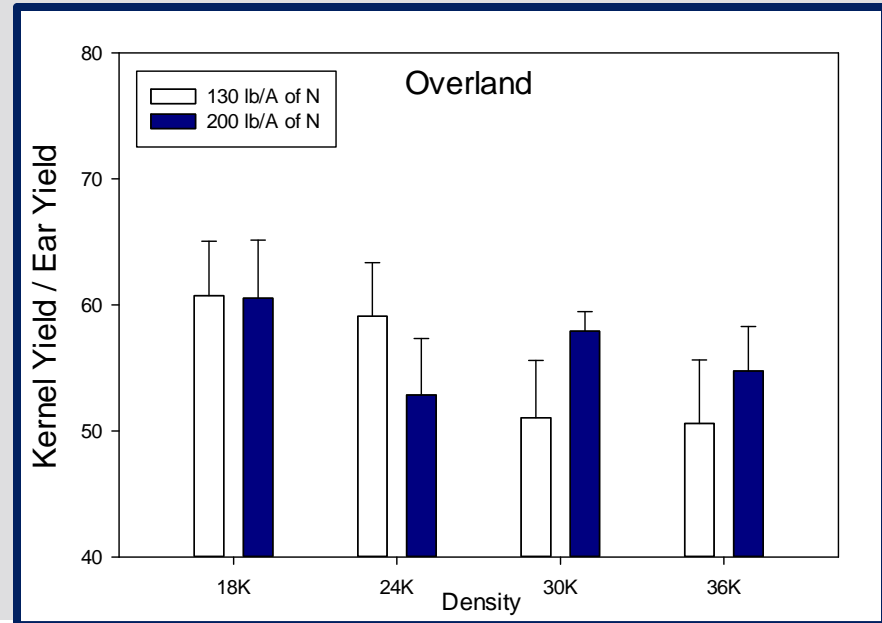
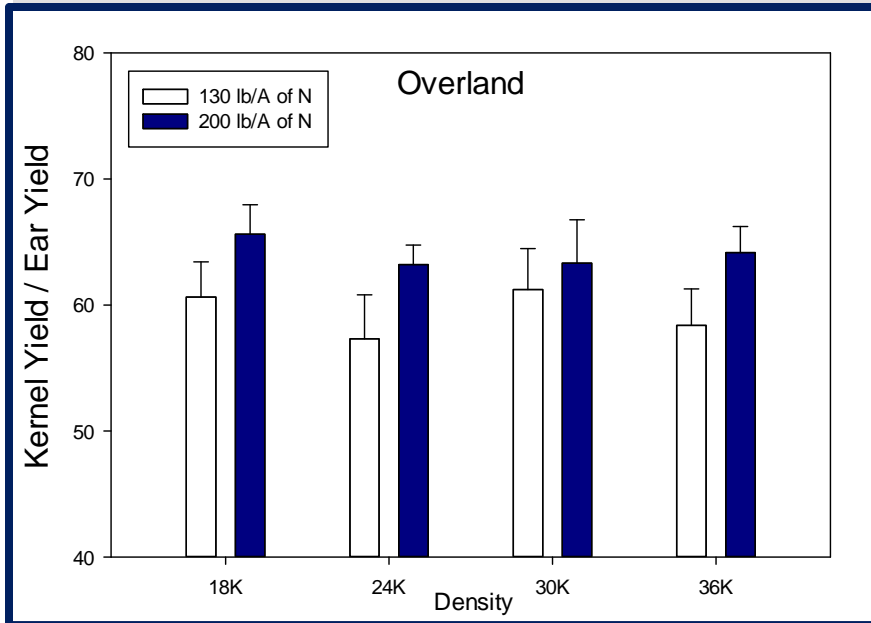
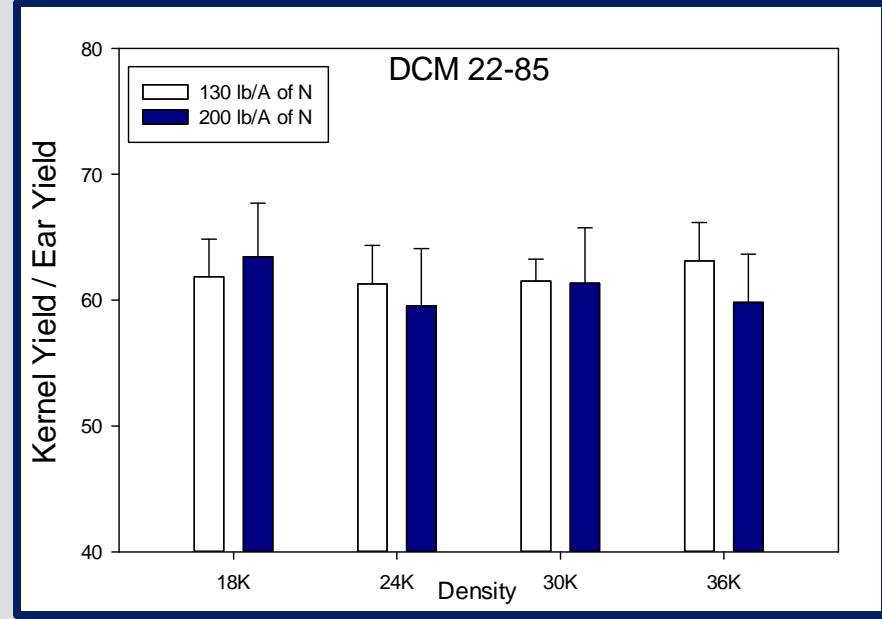
2011 SEEDING DENSITY



2010



2011



CONCLUSIONS

- Optimal rate for irrigated sweet corn is between 150 and 200 lb/A
- Optimal seeding density is variety specific
- Greater than 30K seed/ac reduces yield

FUTURE WORK

- Completion of nitrogen use efficiency data set.
- This data, combined with on-farm data, will be used to adjust UW guidelines for N rate on sweet corn.
- Evaluation of controlled-release products (poly-coated urea) on sweet corn yield and nitrate leaching.