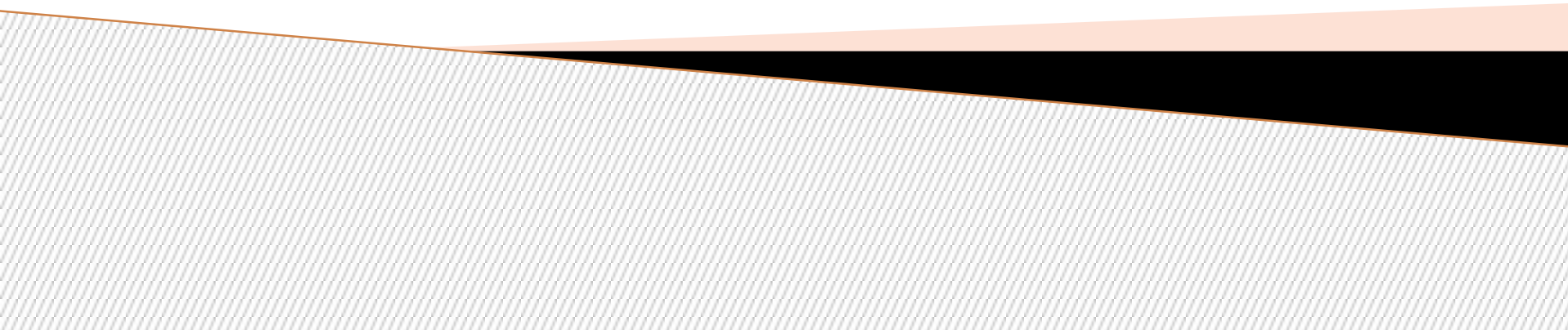


Tissue Testing in Canola

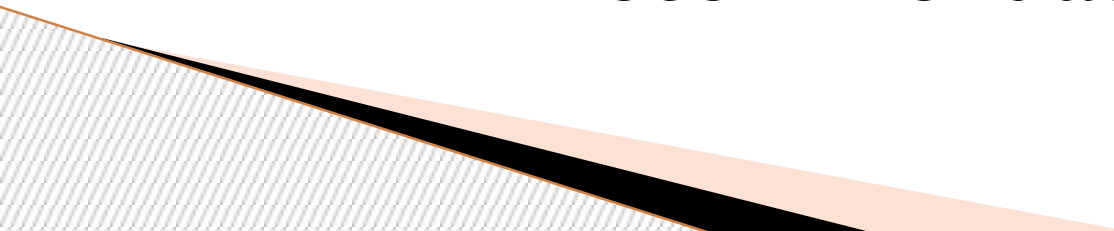
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Tissue Testing

- ▶ Has really become popular with introduction of winter Canola.
- ▶ Before this Work

OSU's stance on using tissue testing was as follows "Plant analysis alone cannot be used to make fertilizer recommendations".



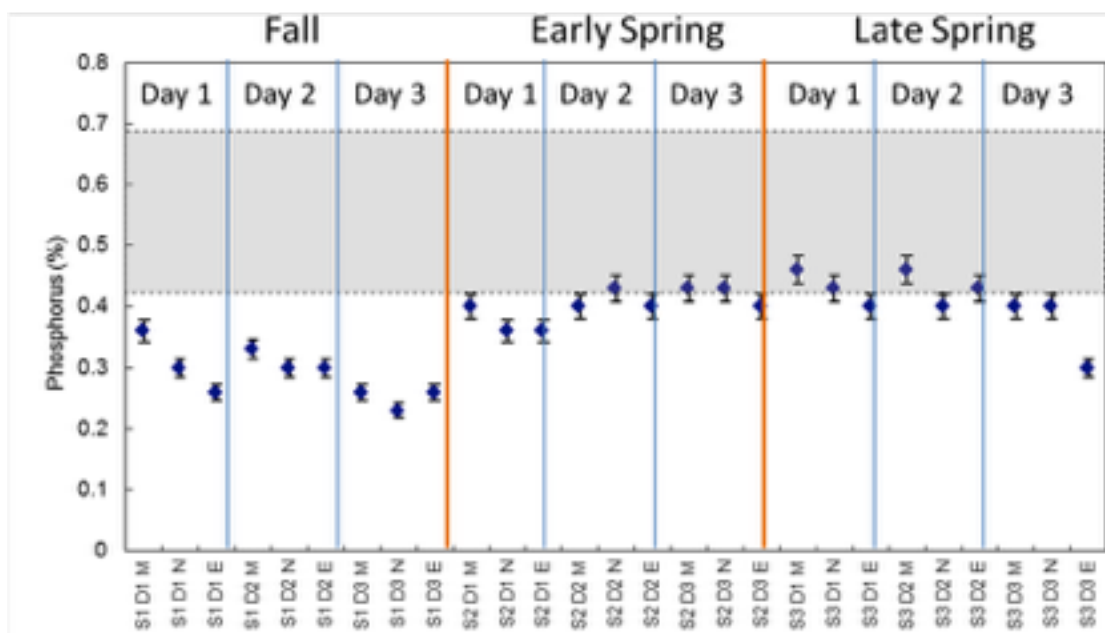
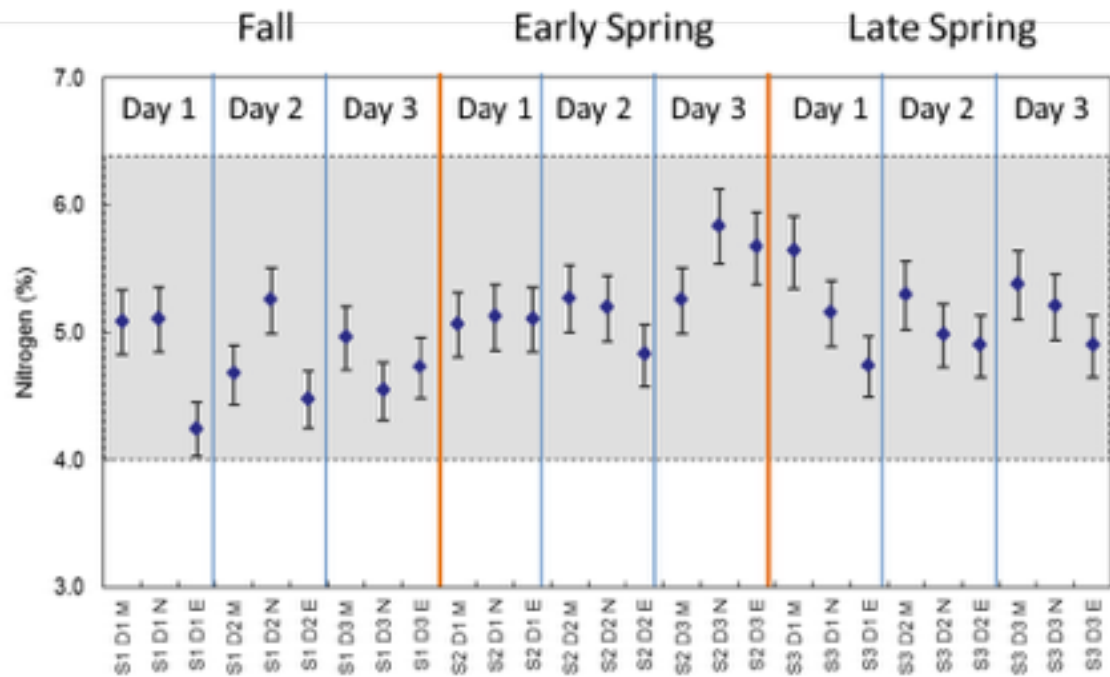
Tissue Testing

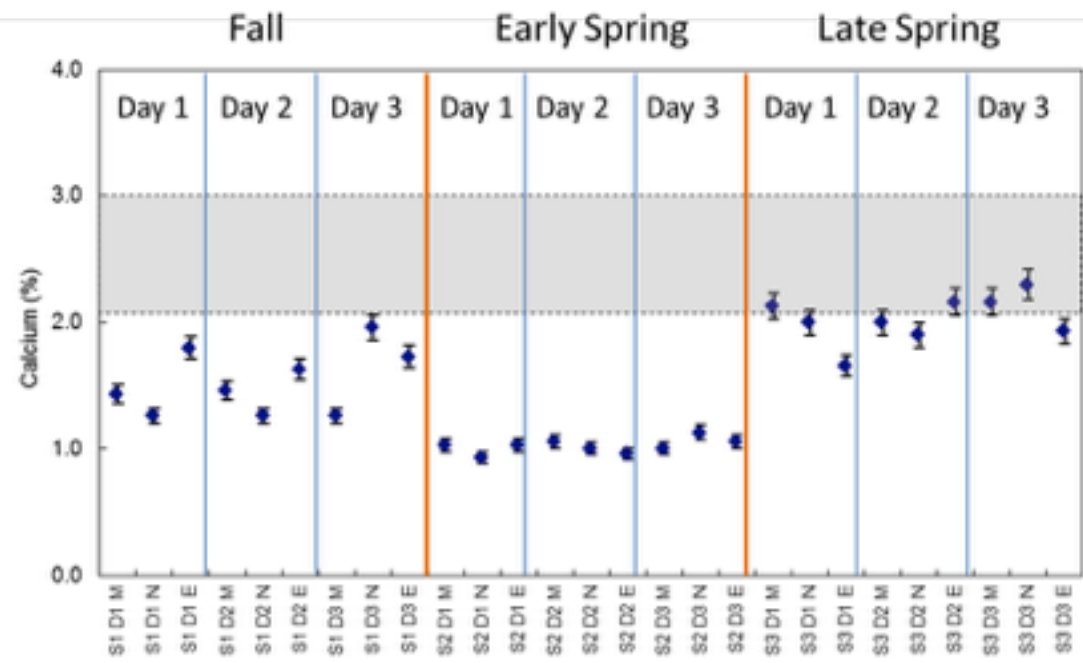
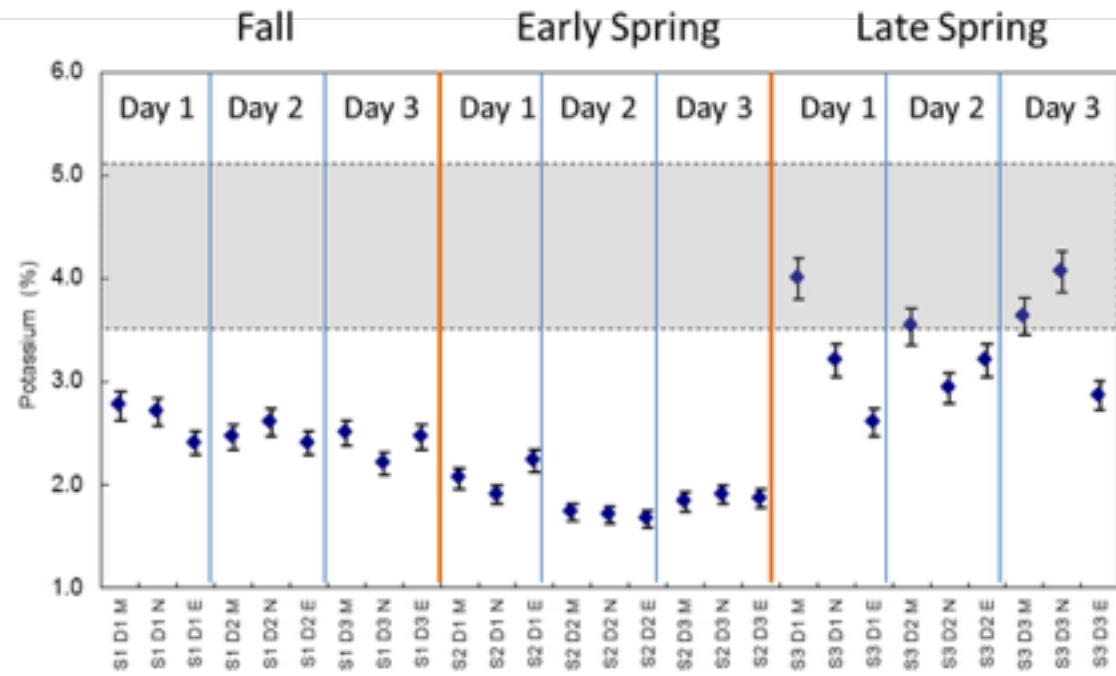
- ▶ Known commodity for
Cotton Production ; Petiole Analysis
Corn : Early, Ear Leaf, and Stalk.

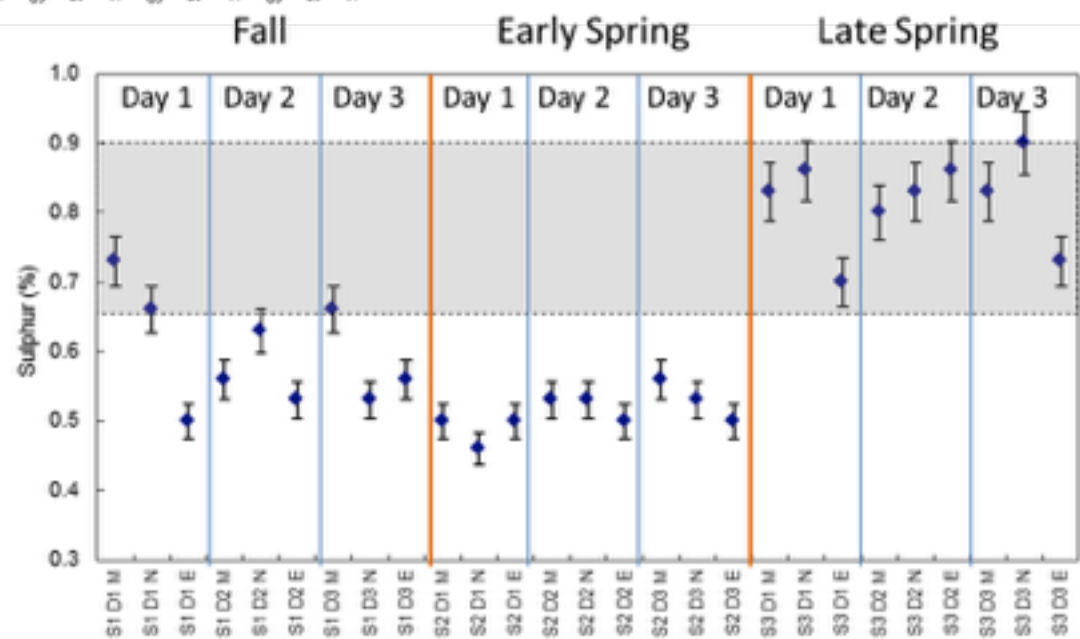
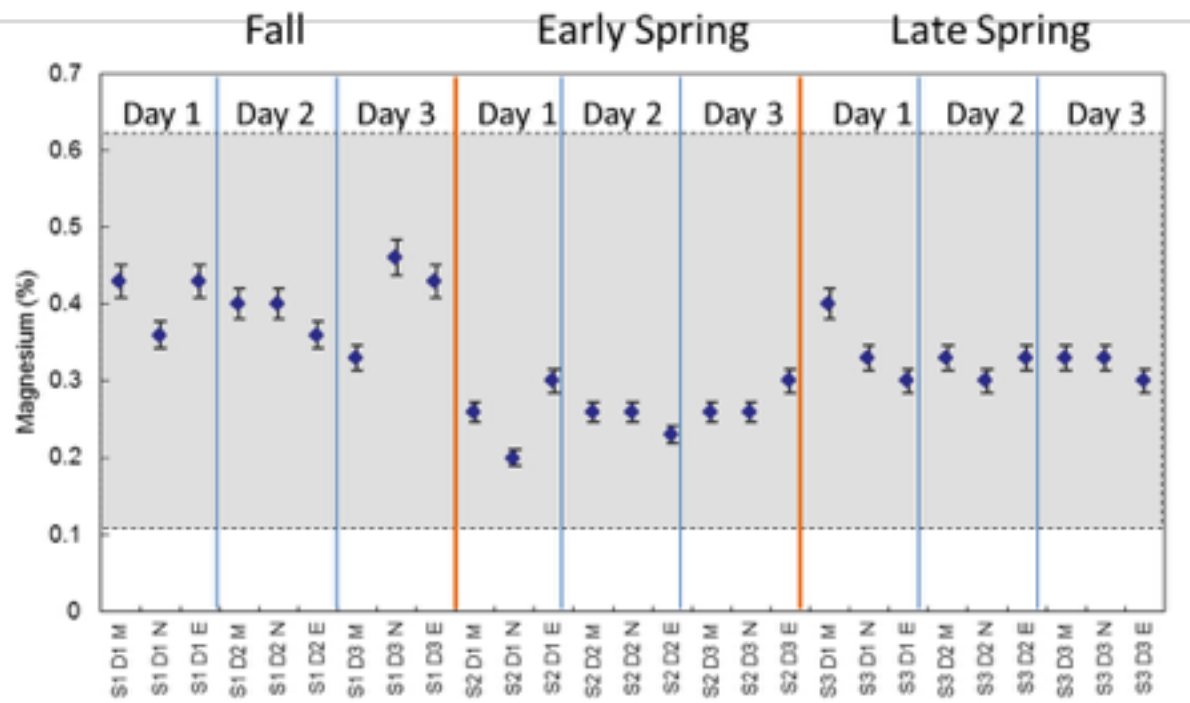
Environment??



- ▶ Study was conducted on the Stillwater Research Farm.
- ▶ All samples were collected from an area 2.3m x 7.62m.
- ▶ Samples were collected by hand by clipping the whole plant, 5cm above soil surface. Fifteen plants were randomly collected from the plot for each sub-sample.
- ▶ Samples were collected in fall (rosette), early spring (after dormancy break), and late spring (pre-bolt).
- ▶ During each stage samples were collected over a period of three days.
- ▶ For each day samples were collected in the morning (approx. 8 am), at noon (approx. 12 pm), and in the evening (approx. 5 pm).
- ▶ For each sampling 3 sub samples were collected.
- ▶ A total of 27 samples were collected



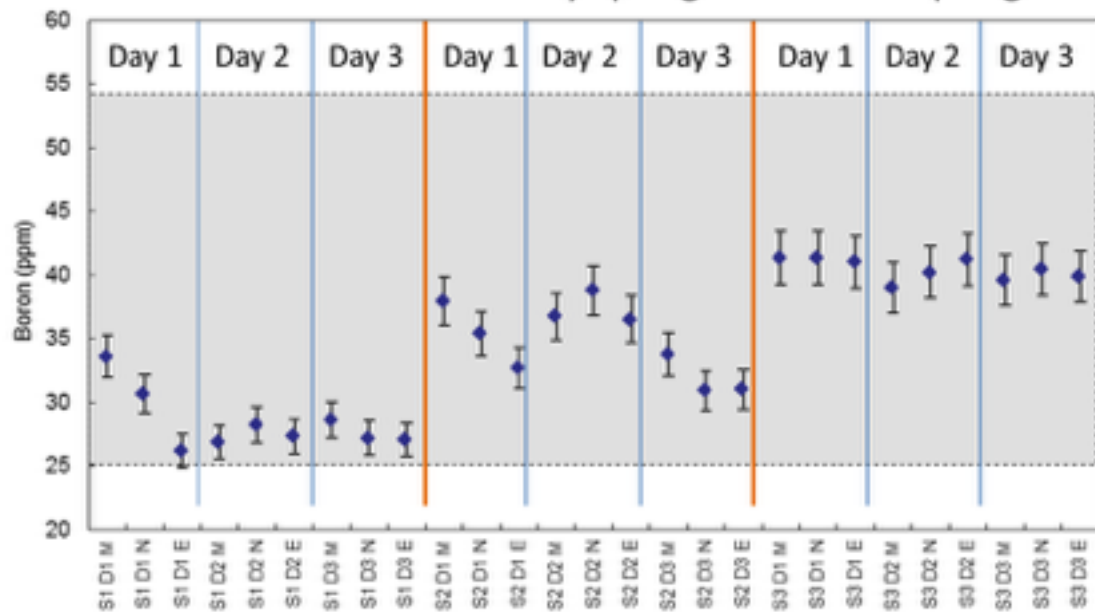




Fall

Early Spring

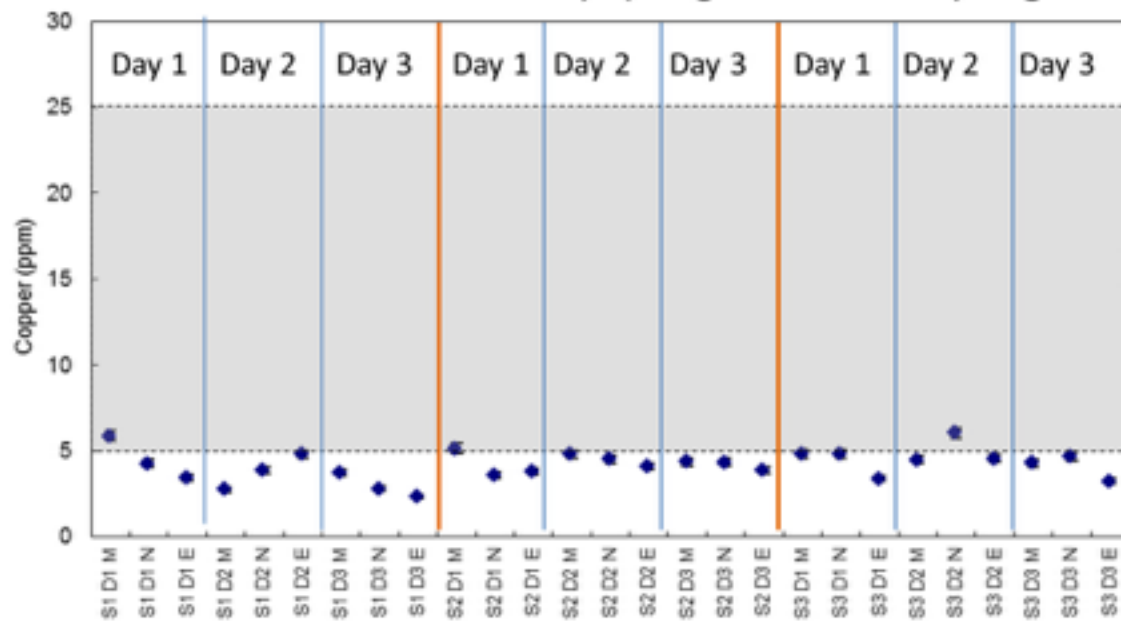
Late Spring

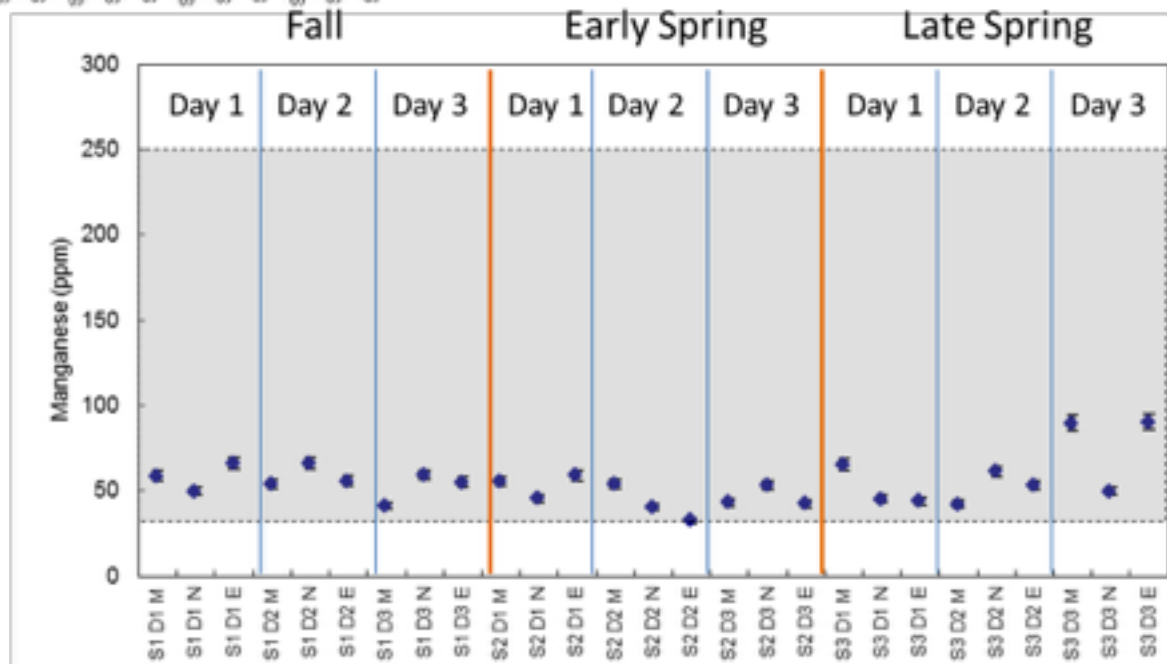
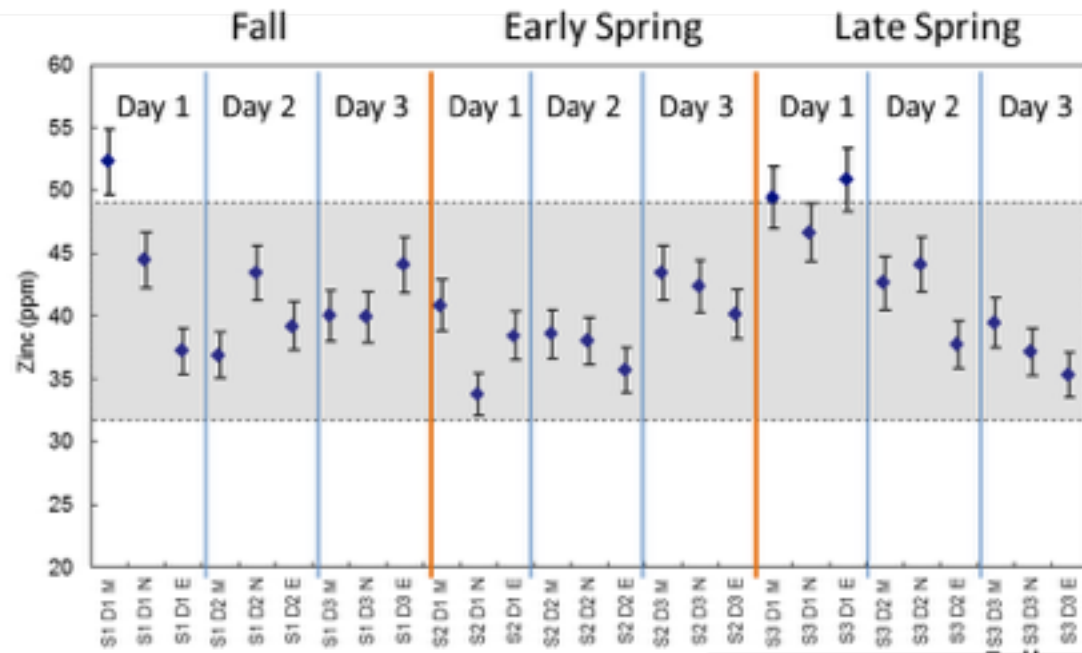


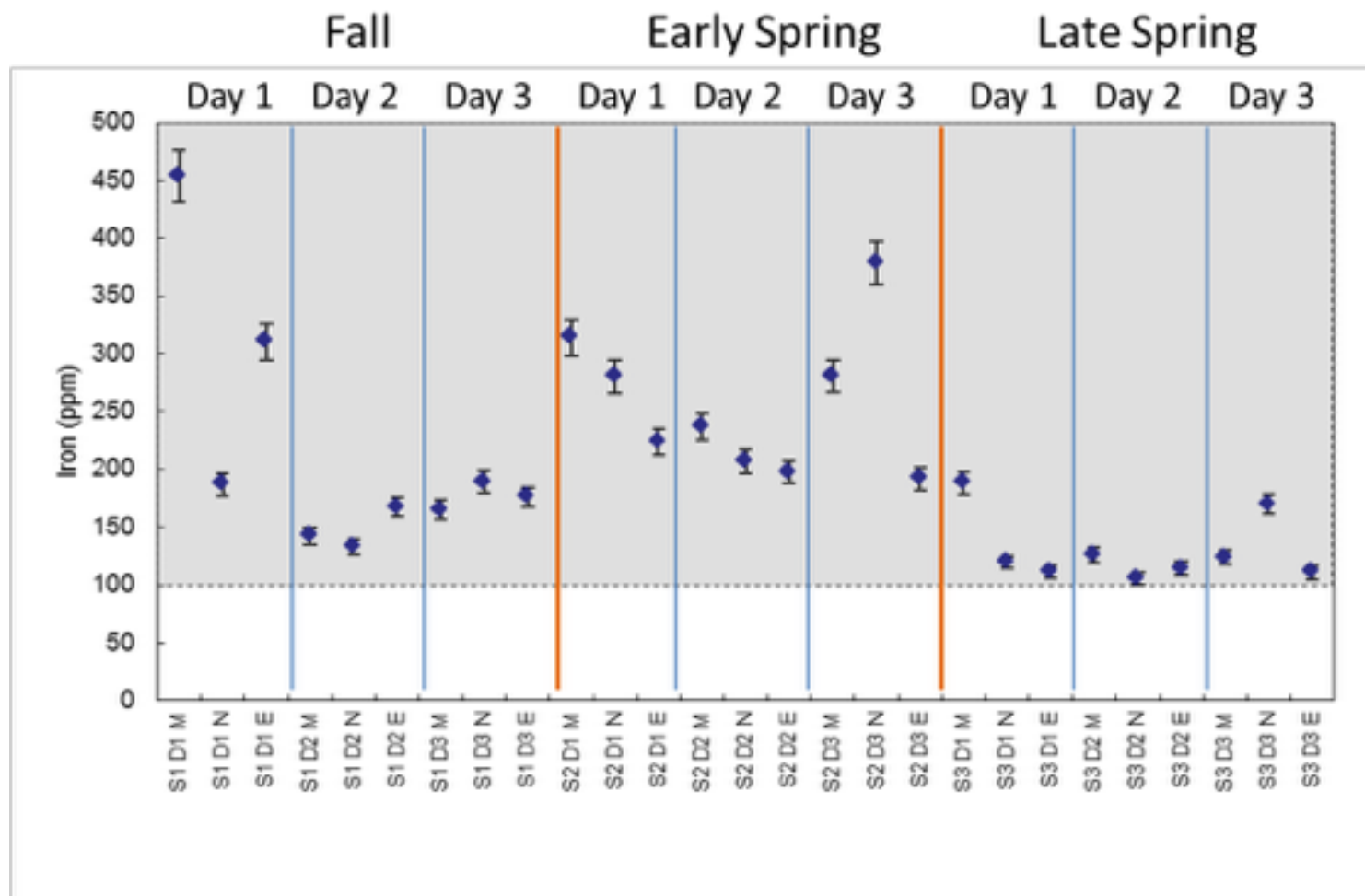
Fall

Early Spring


Late Spring



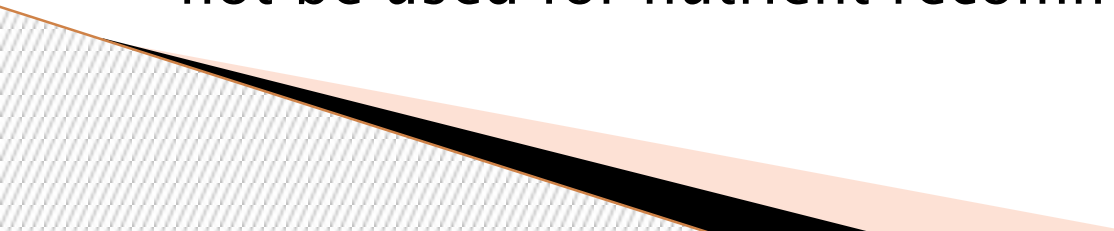




Discussion

- ▶ Within days' all nutrients, except P, K, Fe had significant variability (morning to evening).
 - ▶ Within stages all nutrients, except P and Cu, had significant variability (Day 1 to Day 3 within stage).
 - ▶ All nutrients levels demonstrated significant differences across stages.
 - ▶ The nutrient recommendations for P, K, Ca, S, CU, Zn if based on tissue testing, would have been impacted by sampling time.
 - ▶ Environment significantly impacted nutrient concentration. Daily low and high temperatures along impacted nutrient concentration. Cloud cover, i.e. light interception, impacted nutrient concentration levels.
- 

Conclusion

- ▶ Prior to this work OSU's stance on using tissue testing was as follows "Plant analysis alone cannot be used to make fertilizer recommendations".
 - ▶ Sampling time significantly impacted plant nutrient concentration for all measured nutrients.
 - ▶ This work did not evaluate accuracy of the critical values only the stability of canola tissue concentration over time.
 - ▶ At this time OSU's stance on the use of tissue testing remains unchanged. While the use of plant analysis remains a useful tool in observing crop status, it should not be used for nutrient recommendations.
- 

Thank you!!!



Brian Arnall

373 Ag Hall

405-744-1722

b.arnall@okstate.edu

Presentation available @

www.npk.okstate.edu

Twitter: [@OSU_NPK](https://twitter.com/OSU_NPK)

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