

Soybean Nutrition and Planting Date (and Dry-Down) Effects on Yield and Seed Quality

Treatments

Treatment Number	Planting		R3 Growth Stage		Total Nutrients Applied	
	N Source (lb/a)	S Source (lb/a)	N Source (lb/a)	S Source (lb/a)	N Rate (lb/a)	S Rate (lb/a)
1					0	0
2	AMS-N (26.3)	AMS-S (30)			26.3	30
3		Gypsum			0	30
4	Urea-N (26.3)				26.3	0
5	Urea (150)	AMS-S (15)	Urea (150)	AMS-S (15)	300	30
6	Unfertilized corn (without Nitrogen application)					

Field evaluations

In-season sampling

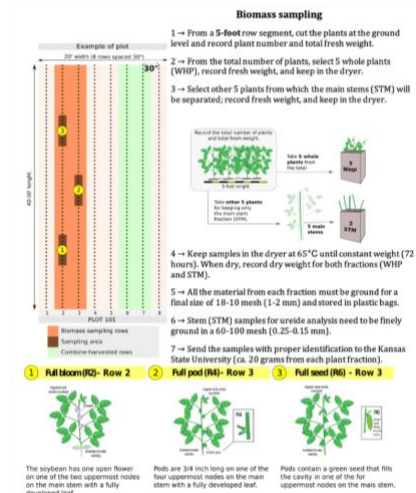
Sampling stages will be R2, R4, and R6 (3 timings) (Appendix);
5-foot sample for recording fresh weight and number of plants;
From the 5-ft sample, 5 whole plants will be kept (fresh and dry weight);

From the same 5-ft sample, 5 main stems from 5 plants (fresh and dry weight).

The unfertilized corn plots will be sampled on the same date and follow similar procedure: Only 2 whole plants will be processed from the 5-foot Crop harvest (R8 stage)

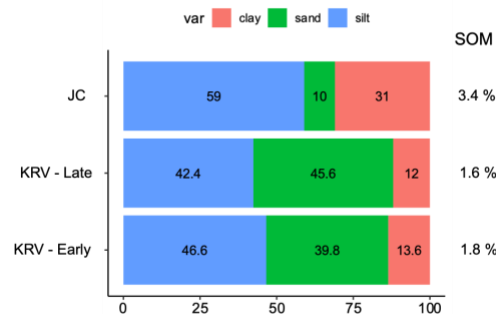
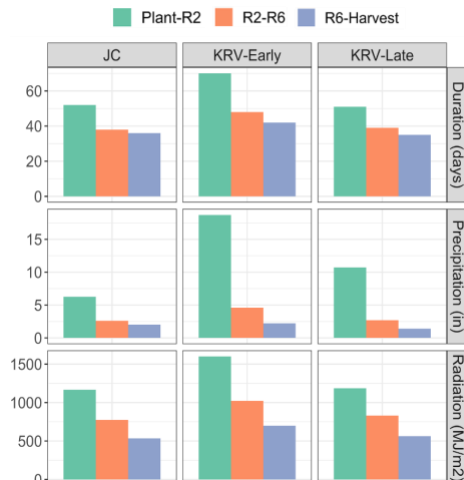
Seed yield and 1000 seed weight will be recorded from plot central rows (combine);

A seed samples per plot (2 lbs.) must be shipped for seed nutritional analysis: protein, oil, and amino acid concentration.

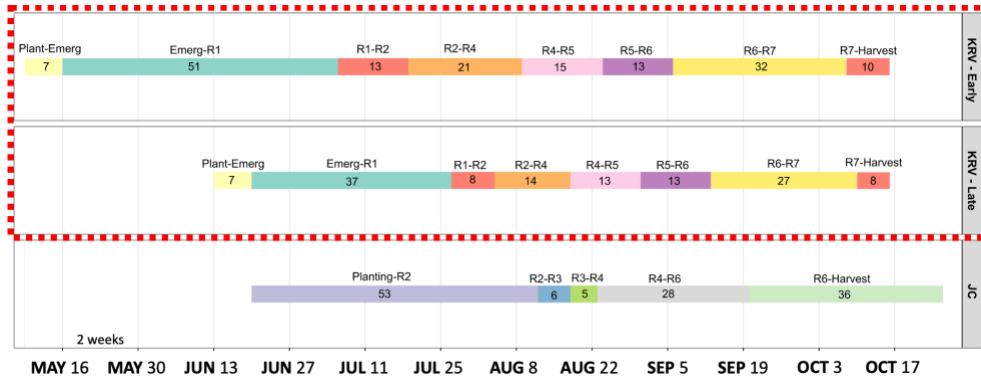


Soil and weather conditions for all sites (JC, Manhattan, KRV, Topeka – Early and Late planted)

Soil & Weather - KS 2022



Crop phenology



Soybean Nutrient Diagnosis (N, P, K & S)

Site 1: Manhattan, KS



R3 (8/15)



R5 (8/23)

Site 2: Junction City, KS

R2 (8/12)



R3 (8/18)



R4 (8/24)

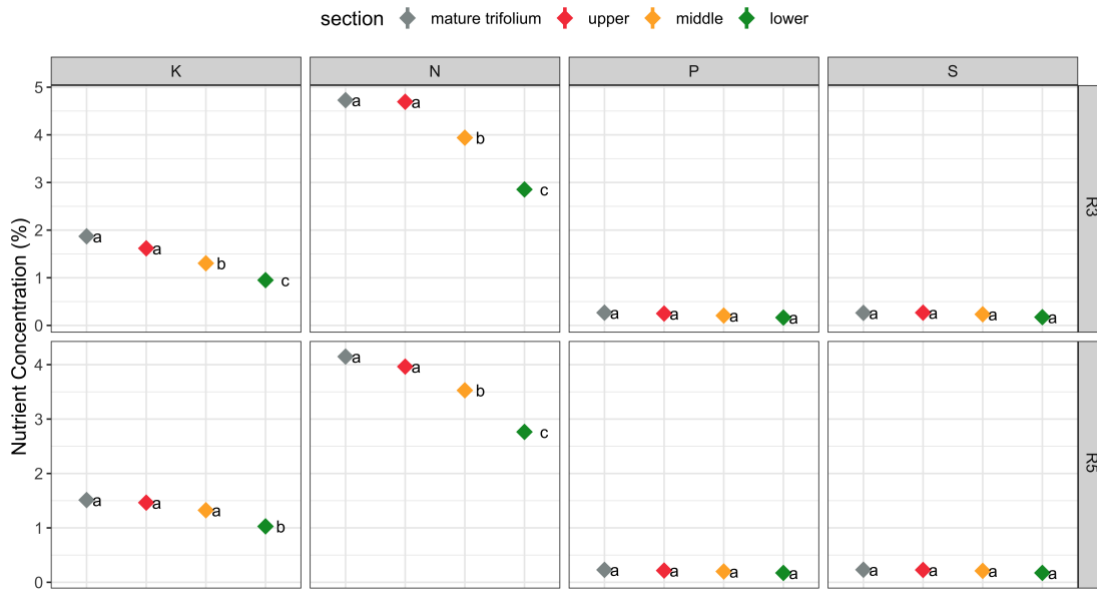


R5 (9/2)

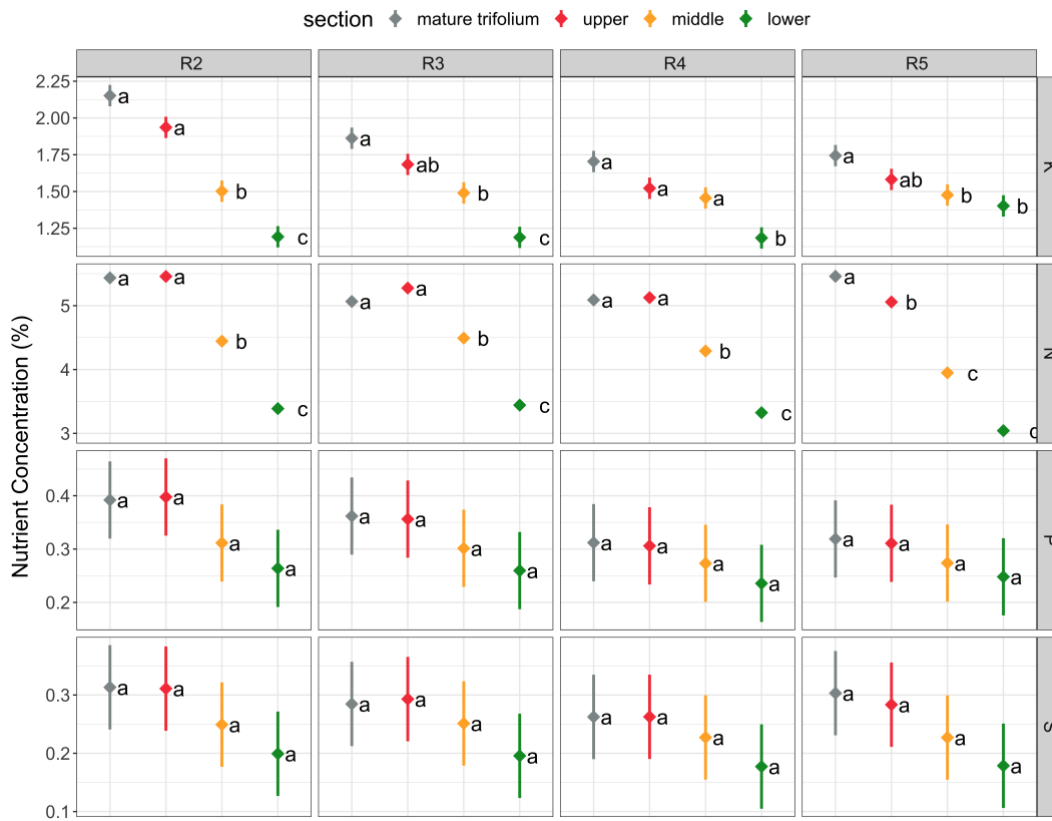


Plant nutrient concentrations

Manhattan, KS

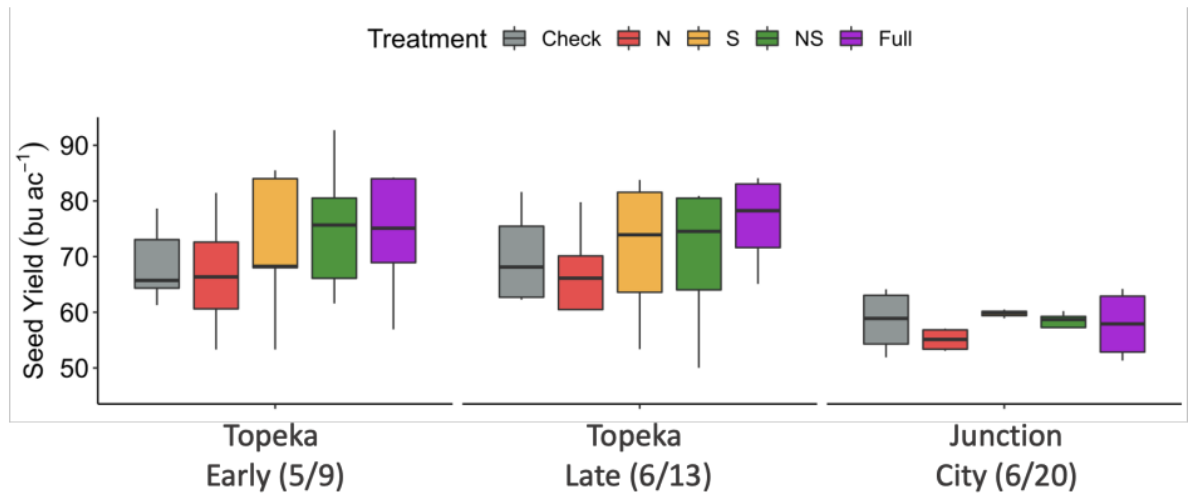


Junction City, KS



Soybean Seed Yields

For the explored locations, the yields ranged from 59 to 71 bushels/acre. Greater potential to sulfur fertilization response has been documented for all locations, but more clearly for Topeka.



Average:

71

70

59

Figure 1. Seed yield (bu/acre) for all treatments (Check, N, S, NS, and Full application)