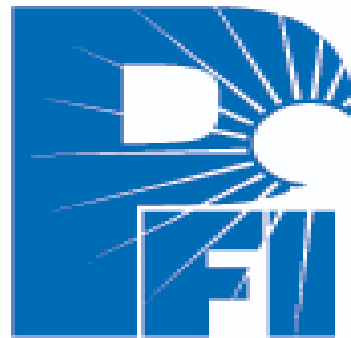


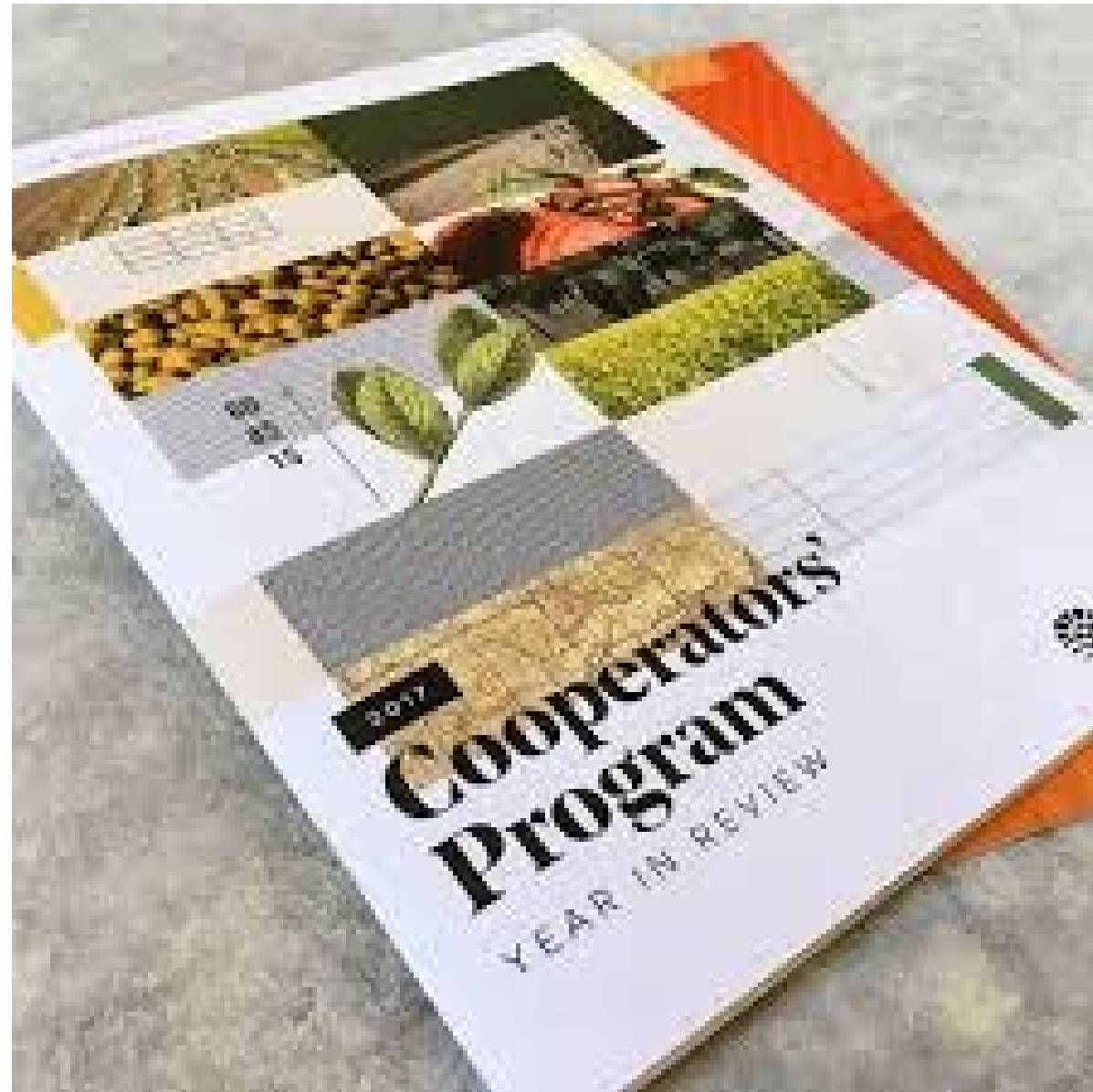


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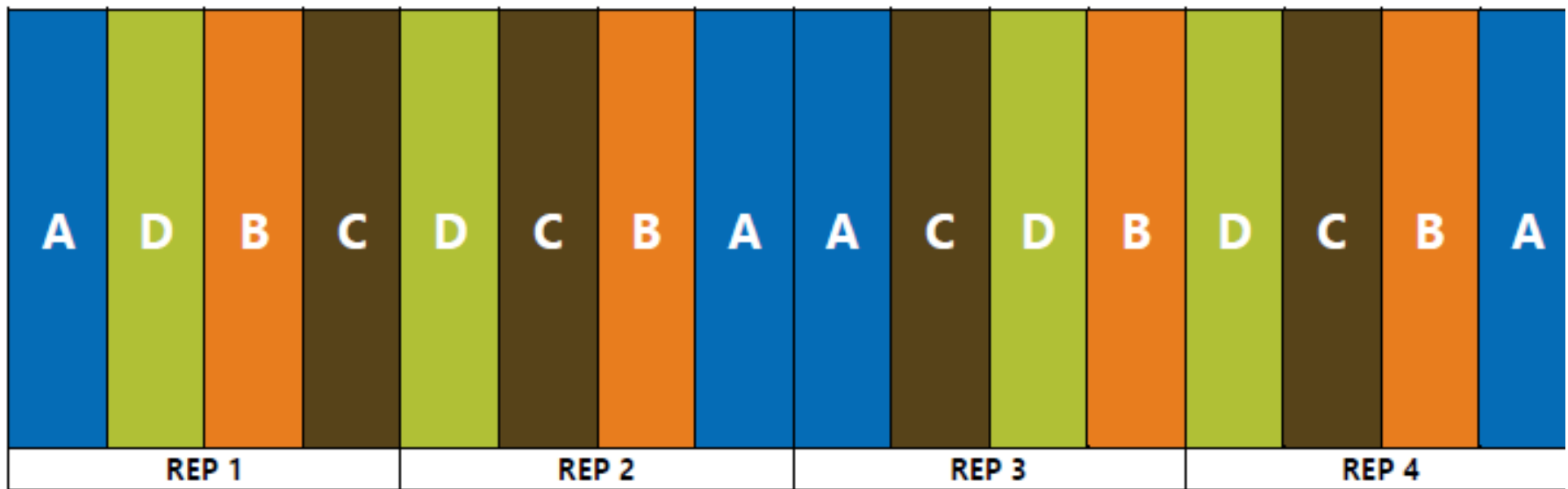
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Principles of Experimental Design

- Objective
 - What question are you trying to answer?
- Hypothesis
 - What do you think will happen?
- Treatments
 - How will these be applied?
- Data to Collect
 - What response variables need to be measured?
- Challenges?

Trial design

Treatment	Cover crop?	Herbicide Program
A	No	Full program
B	Yes	Full program
C	Yes	Reduced-cost program
D	Yes	No-residual program



75 lbs Elbon Rye Broadcast in Corn 9/12/17

TABLE 1. Weed management systems in soybean at Sam Bennett's in 2018.

WEED MANAGEMENT SYSTEM		HERBICIDES		
Cover crop	Herbicide program	Pre-plant (5/6/2018)	Pre-emerge / Burndown (5/18/2018)	Post-emerge (6/7/2018)
No cover	Full	Salvo Prowl H ₂ O	Roundup Powermax Authority MTZ	Roundup Powermax Clethodim
Cover	Full	Salvo Prowl H ₂ O	Roundup Powermax Authority MTZ	Roundup Powermax Clethodim
Cover	Reduced	Salvo Dual	Roundup Powermax Metribuzin	Roundup Powermax Clethodim
Cover	No residual	Salvo	Roundup Powermax	Roundup Powermax Clethodim

Herbicide rates: Salvo (12 oz/ac), Prowl H₂O (48 oz/ac), Dual (32 oz/ac), Roundup Powermax (32 oz/ac), Authority MTZ (10 oz/ac), Metribuzin (0.33 lb/ac), Clethodim (6 oz/ac).



Soybean yields

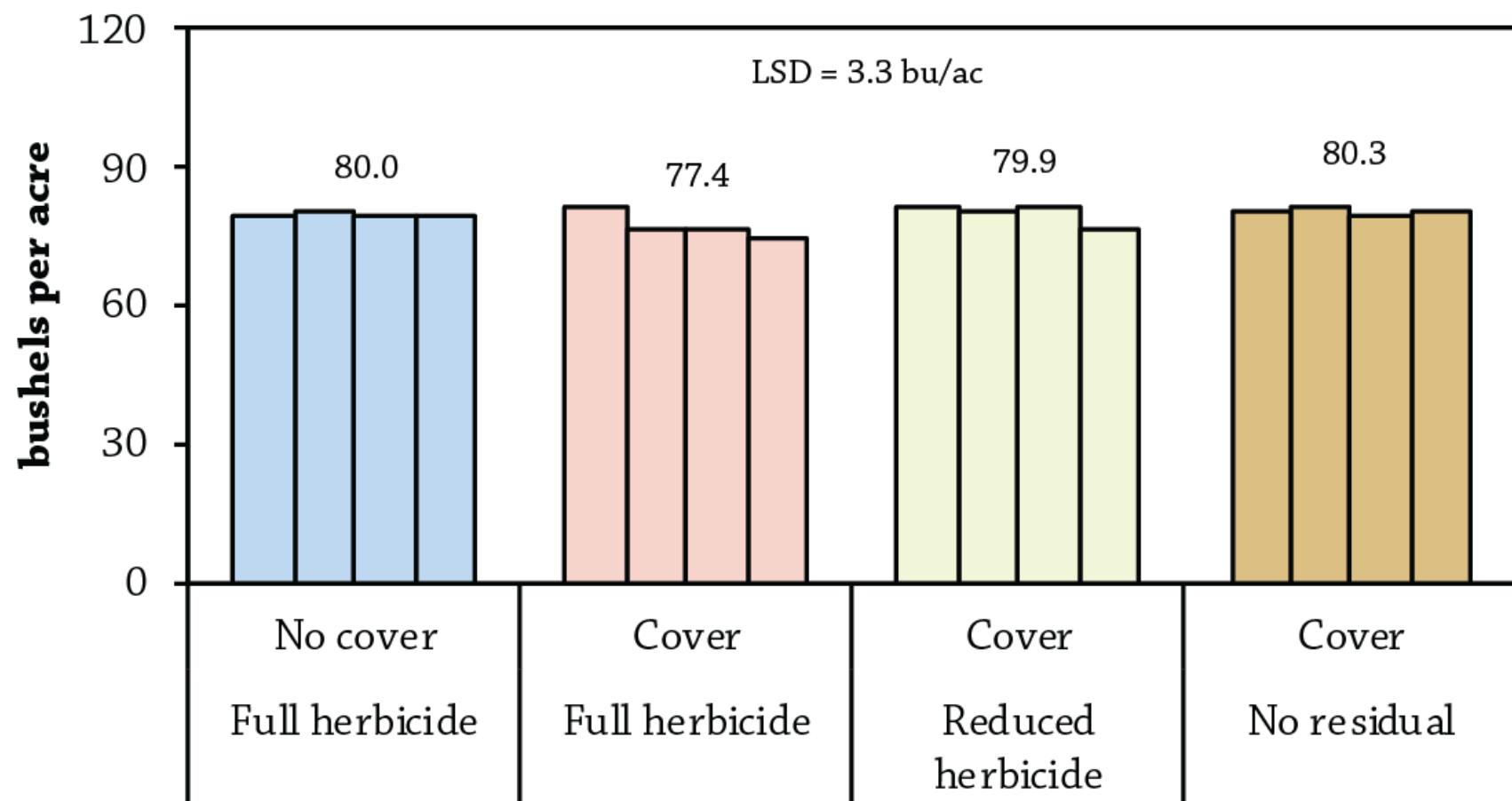


FIGURE 1. Average soybean yield in each treatment at Sam Bennett's in 2018. Columns represent individual strip yields. Above each set of columns is the treatment mean. Because none of the differences between any two treatment averages is greater than or equal to the least significant difference (LSD), the treatments are considered statistically equal with 95% certainty.

Terminating Cover Crops After Seeding Soybeans

Hypothesis/ Questions

Determine if terminating a cover crop near or after soybean planting can reduce the need for herbicides.

How much weed suppression can I count on the CC to provide?

Can I offset the cost of establishing CC by reducing herbicide use?

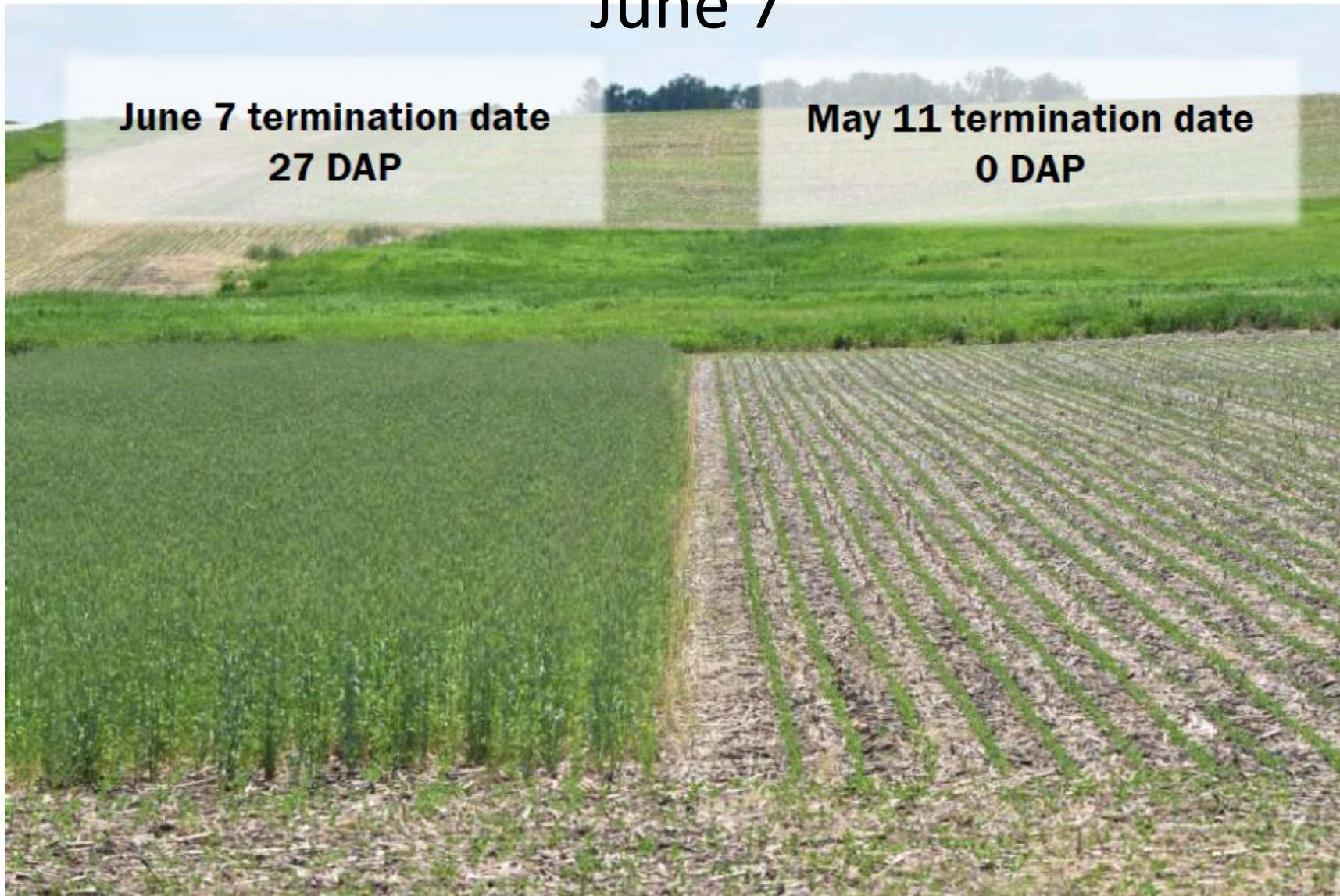
Can I do this without sacrificing yield or planting date?

MAY 11, 2019 Planting Date							
Near planting (0 DAP)	2-3 weeks after planting (27 DAP)	Near planting (0 DAP)	2-3 weeks after planting (27 DAP)	Near planting (0 DAP)	2-3 weeks after planting (27 DAP)	Near planting (0 DAP)	2-3 weeks after planting (27 DAP)
REP 1		REP 2		REP 3		REP 4	

June 7

**June 7 termination date
27 DAP**

**May 11 termination date
0 DAP**

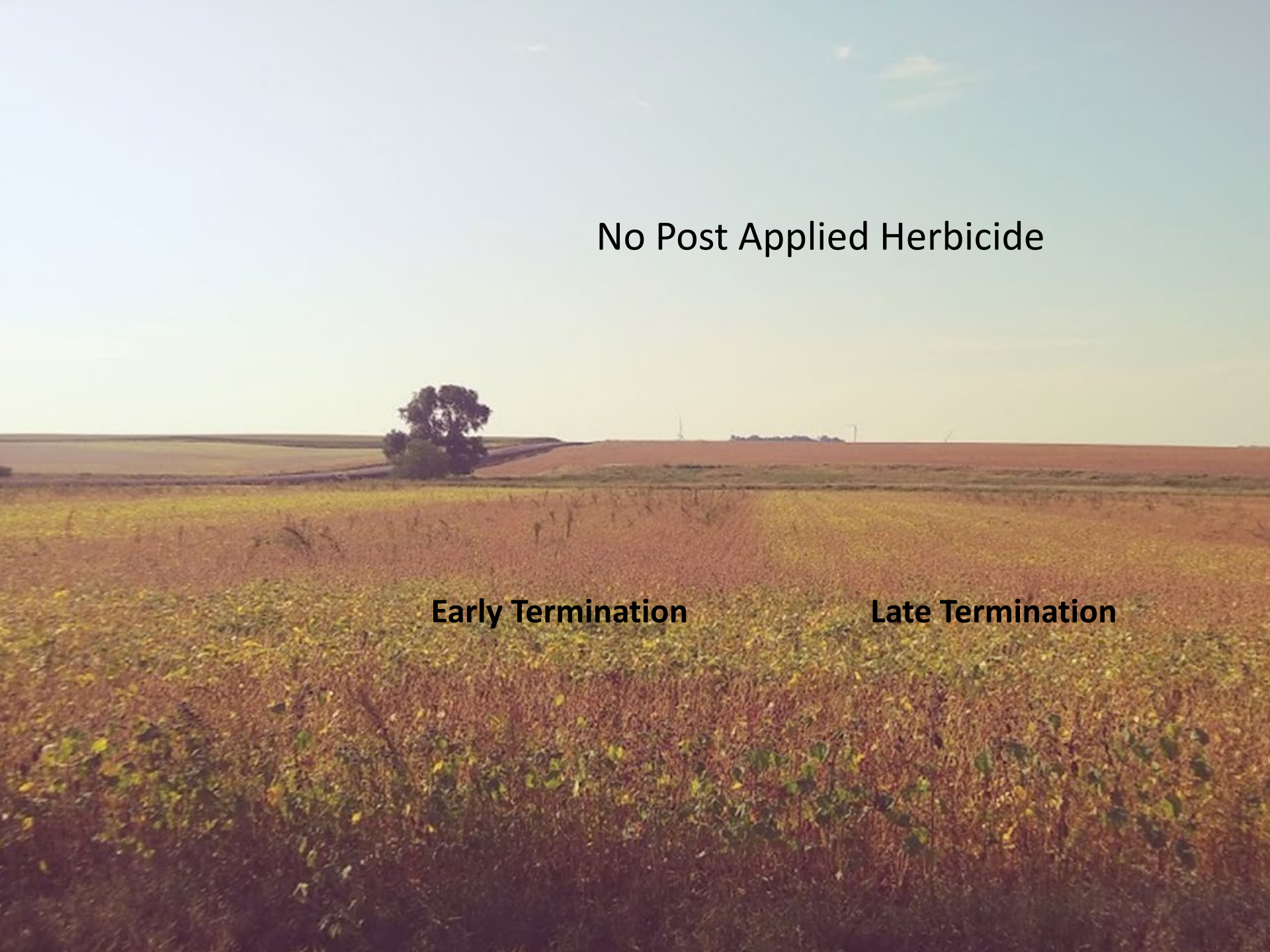




No Post Applied Herbicide

Early Termination

Late Termination



Soybean Yield and Rye Termination Date

