

Yield Component Traits in Intermediate Wheatgrass Spaced Plants

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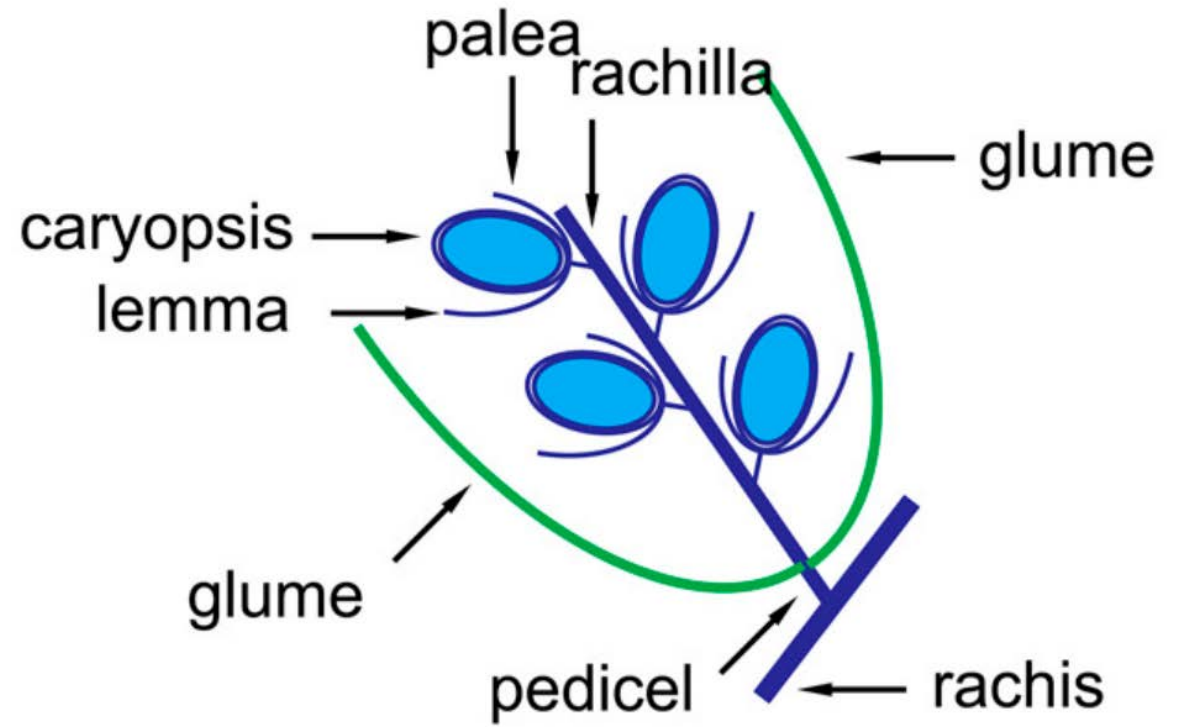




12-28

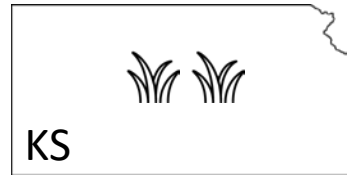


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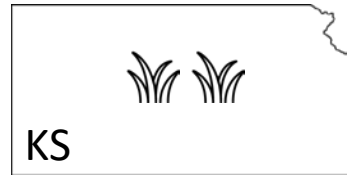






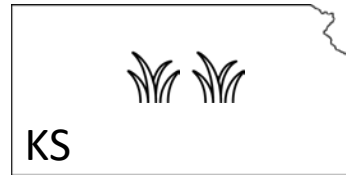


n = 1,200
10 families
1 common parent



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10 families
1 common parent

Flag Leaf Area
Spike Emergence
Flowering Time
Height
Fertile Tillers



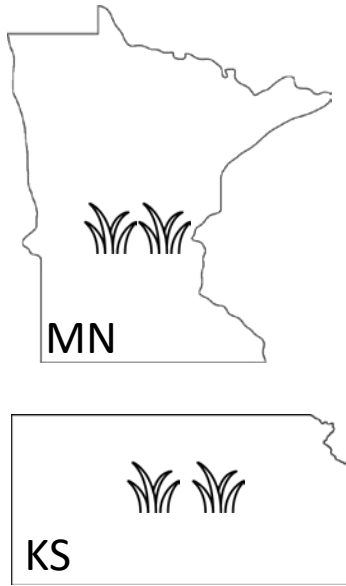
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Flag Leaf Area
Spike Emergence
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Height
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Spikelets Spike⁻¹
Florets Spike⁻¹
Spike Compactness
Stem Diameter



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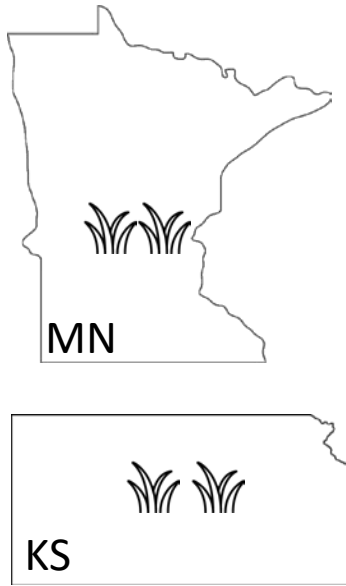
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Spikelets Spike⁻¹
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Thousand Grain Weight
Floret Site Utilization



n = 1,200
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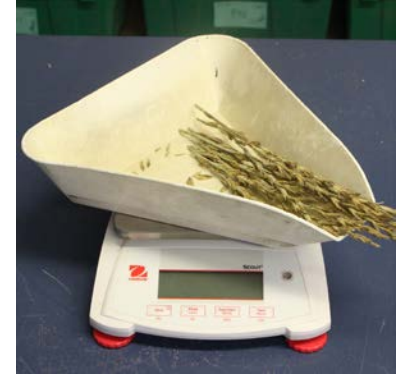
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Thousand Grain Weight
Floret Site Utilization



Yield Spike⁻¹
Yield Plant⁻¹

	Fertile Tillers	Emergence Percent	Feekes Coded	Flag Leaf Area	Stem Diameter	Florets Spikelet-1	Spikelets Spike-1	Spikelet Density	Height	Floret Site Utilization	Thousand Grain Weight	Yield Spike-1
Fertile Tillers												
Emergence Percent	0.17											
Feekes Coded	0.20	0.65										
Flag Leaf Area	0.32	0.15	0.10									
Stem Diameter	0.19	0.14	0.14	0.48								
Florets Spikelet-1	-0.05	0.10	-0.05	0.33	0.44							
Spikelets Spike-1	0.37	0.17	0.30	0.40	0.50	0.27						
Spikelet Density	-0.04	0.07	0.11	-0.04	-0.10	0.07	0.42					
Height	0.45	-0.05	0.16	0.24	0.10	-0.18	0.13	-0.46				
Floret Site Utilization	0.20	0.10	0.15	0.11	0.05	-0.22	0.05	-0.13	0.26			
Thousand Grain Weight	0.24	-0.04	-0.01	0.24	0.29	0.01	-0.03	-0.44	0.42	0.04		
Yield Spike-1	0.36	0.13	0.21	0.45	0.51	0.33	0.53	-0.05	0.35	0.63	0.39	
Yield Plant-1	0.71	0.13	0.22	0.35	0.32	0.08	0.47	0.00	0.36	0.41	0.23	0.65

A Correlation and Path-Coefficient Analysis of Components of Crested Wheatgrass Seed Production¹

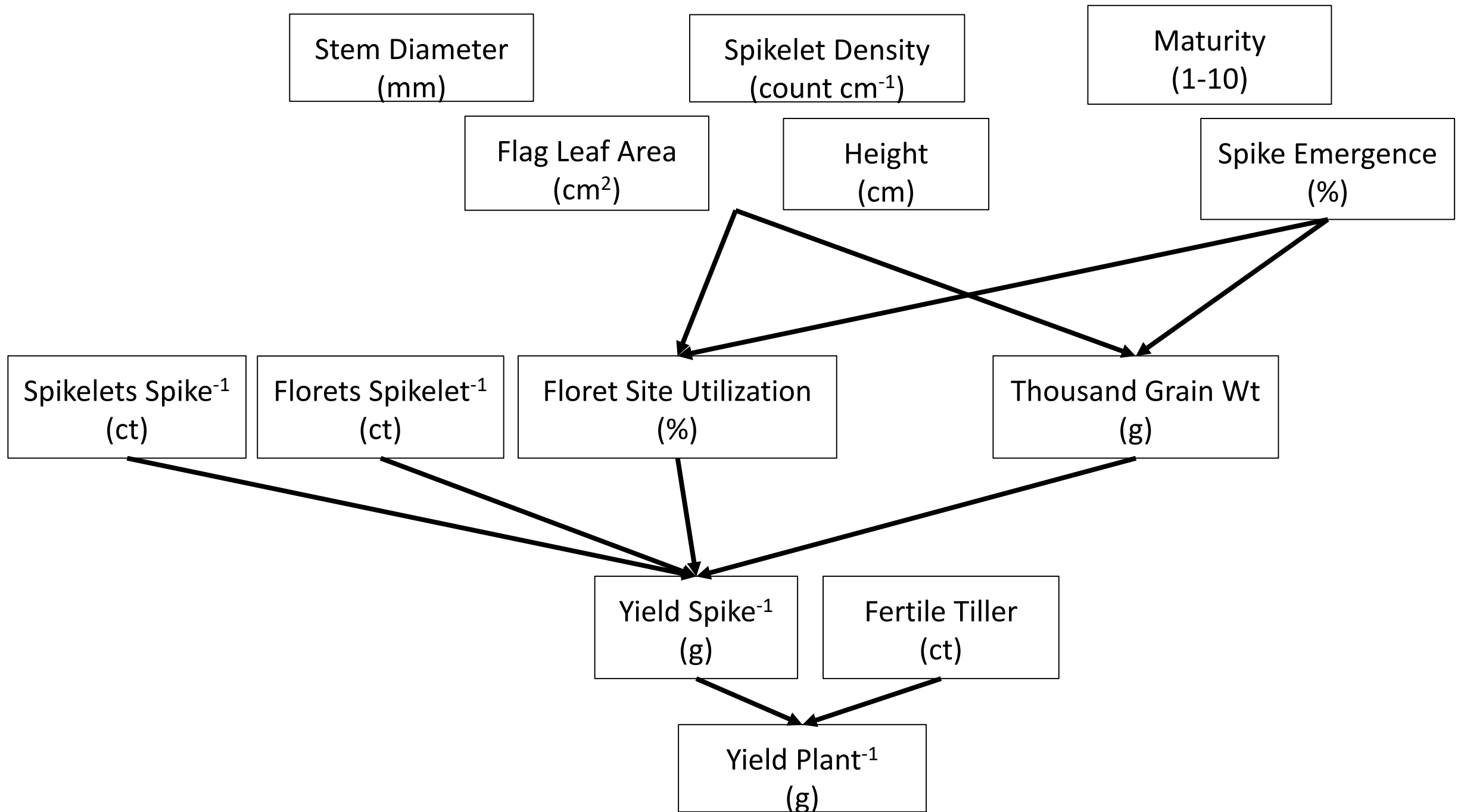
Douglas R. Dewey and K. H. Lu²

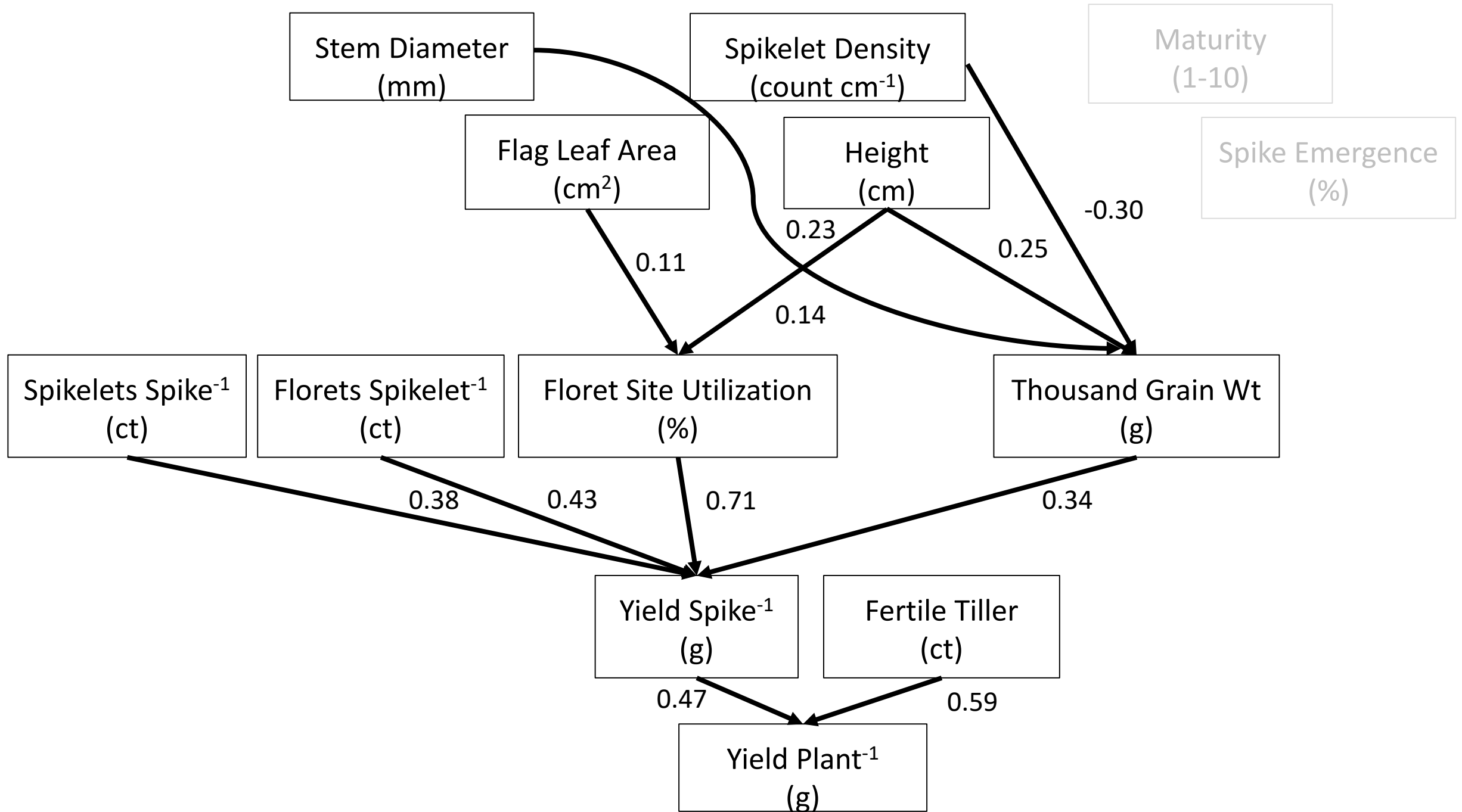
Agronomy Journal, 1959

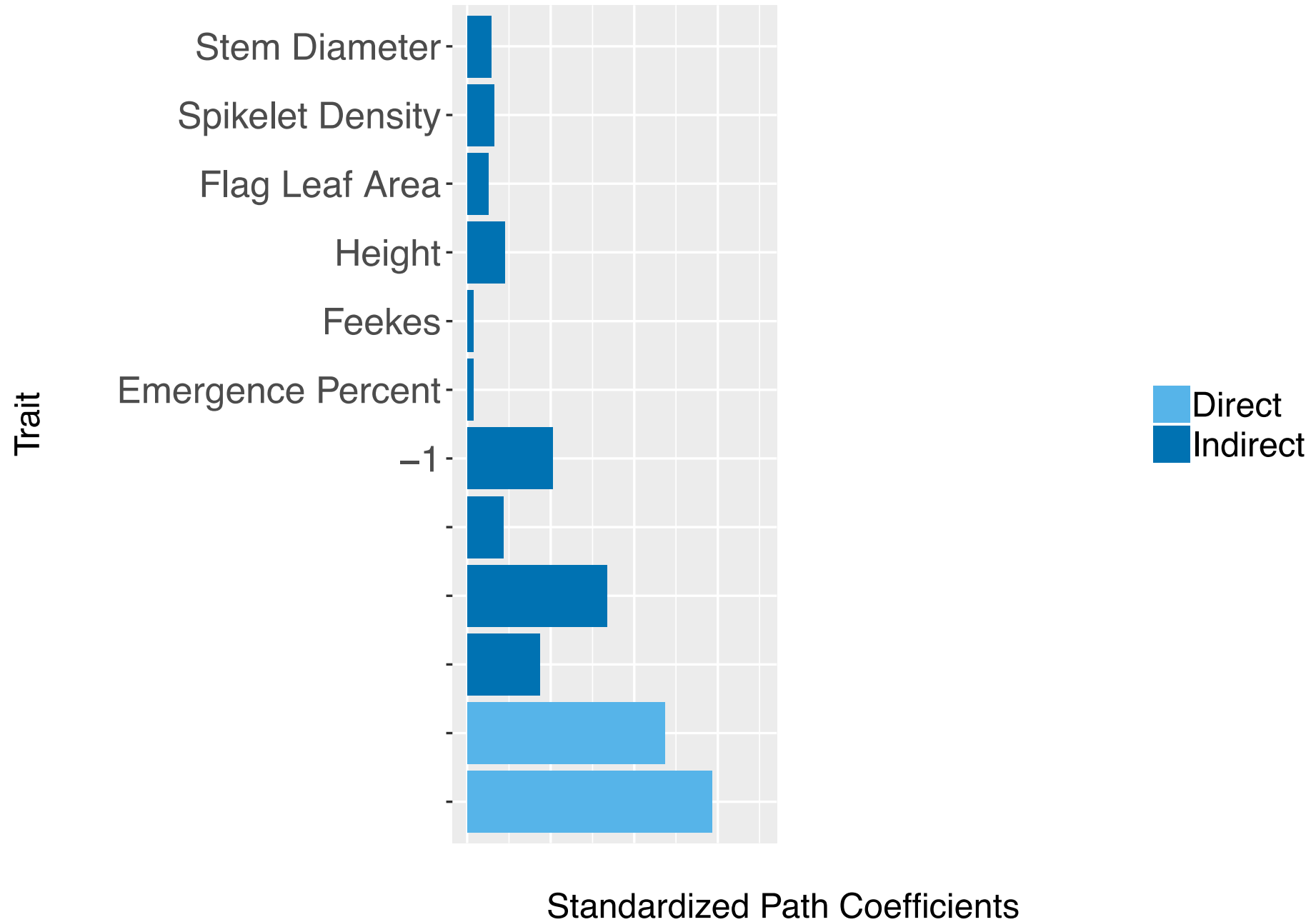
Structural equation modeling in the plant sciences: An example using yield components in oat

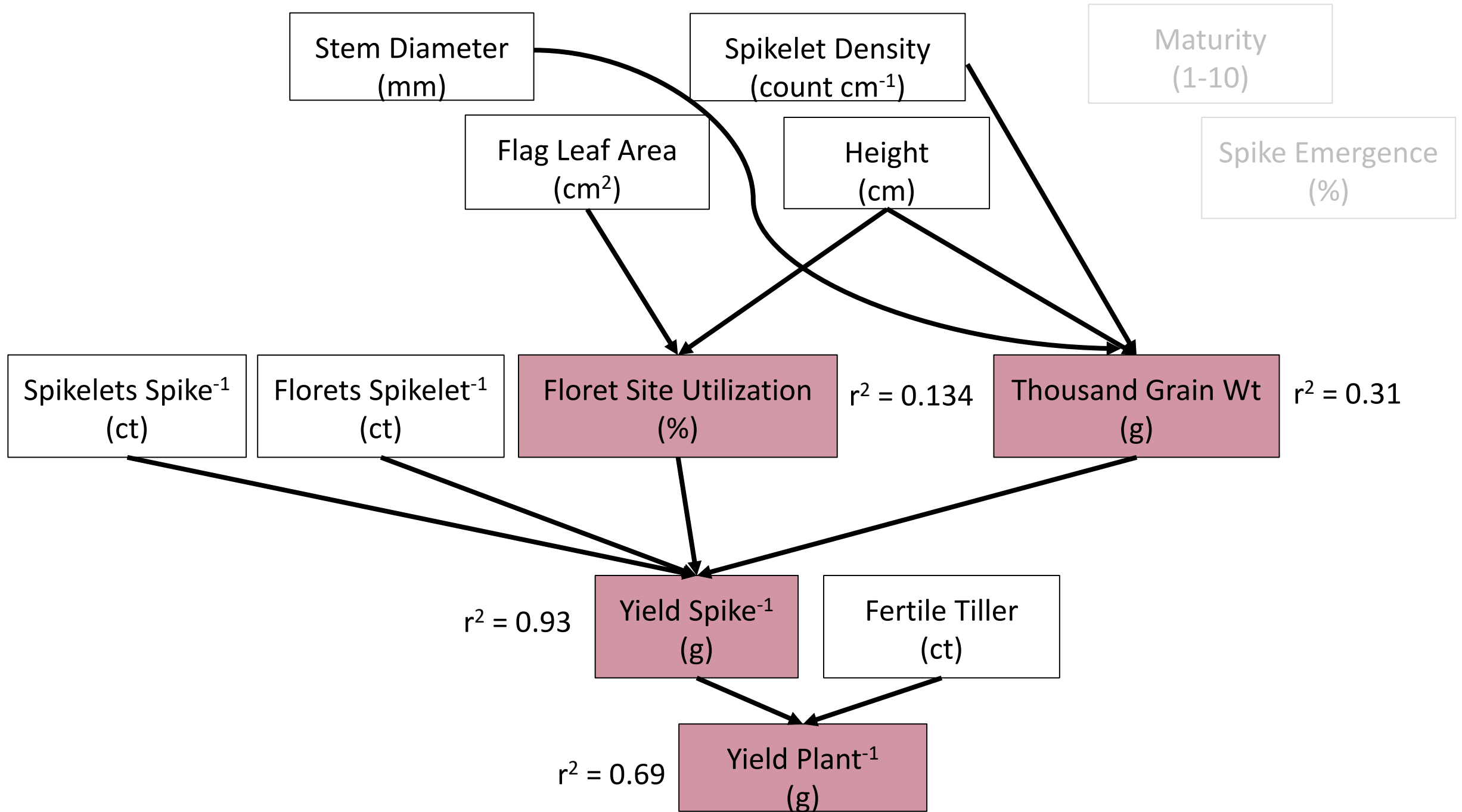
Eric G. Lamb¹, Steven J. Shirtliffe¹, and William E. May²

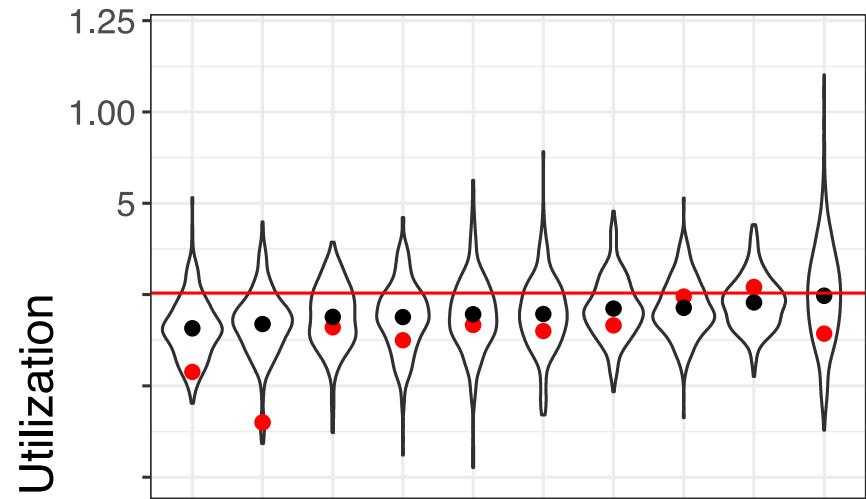
Canadian Journal of Plant Science, 2011







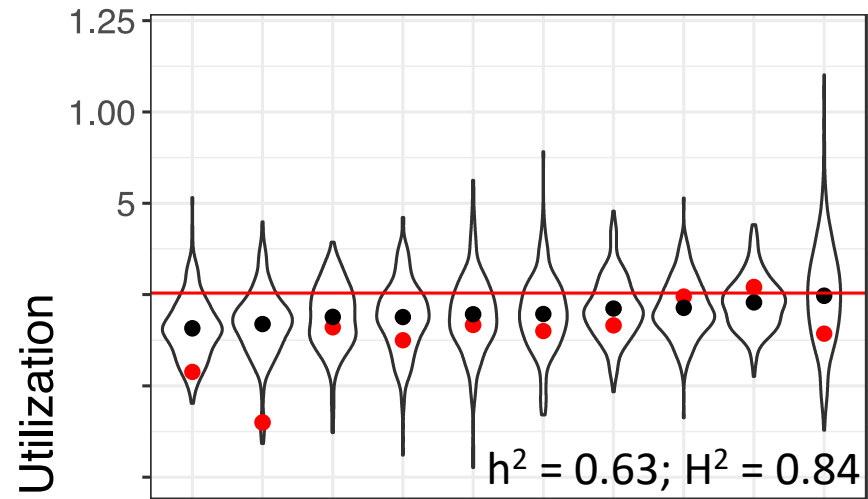




Floret Site Utilization

Family

- Common Parent Mean
- Donor Parent Mean
- Progeny Mean



$h^2 = 0.63; H^2 = 0.84$

$h^2 = 0.91; H^2 = 0.87$

$h^2 = 0.61; H^2 = 0.80$

$h^2 = 0.62; H^2 = 0.76$

Family

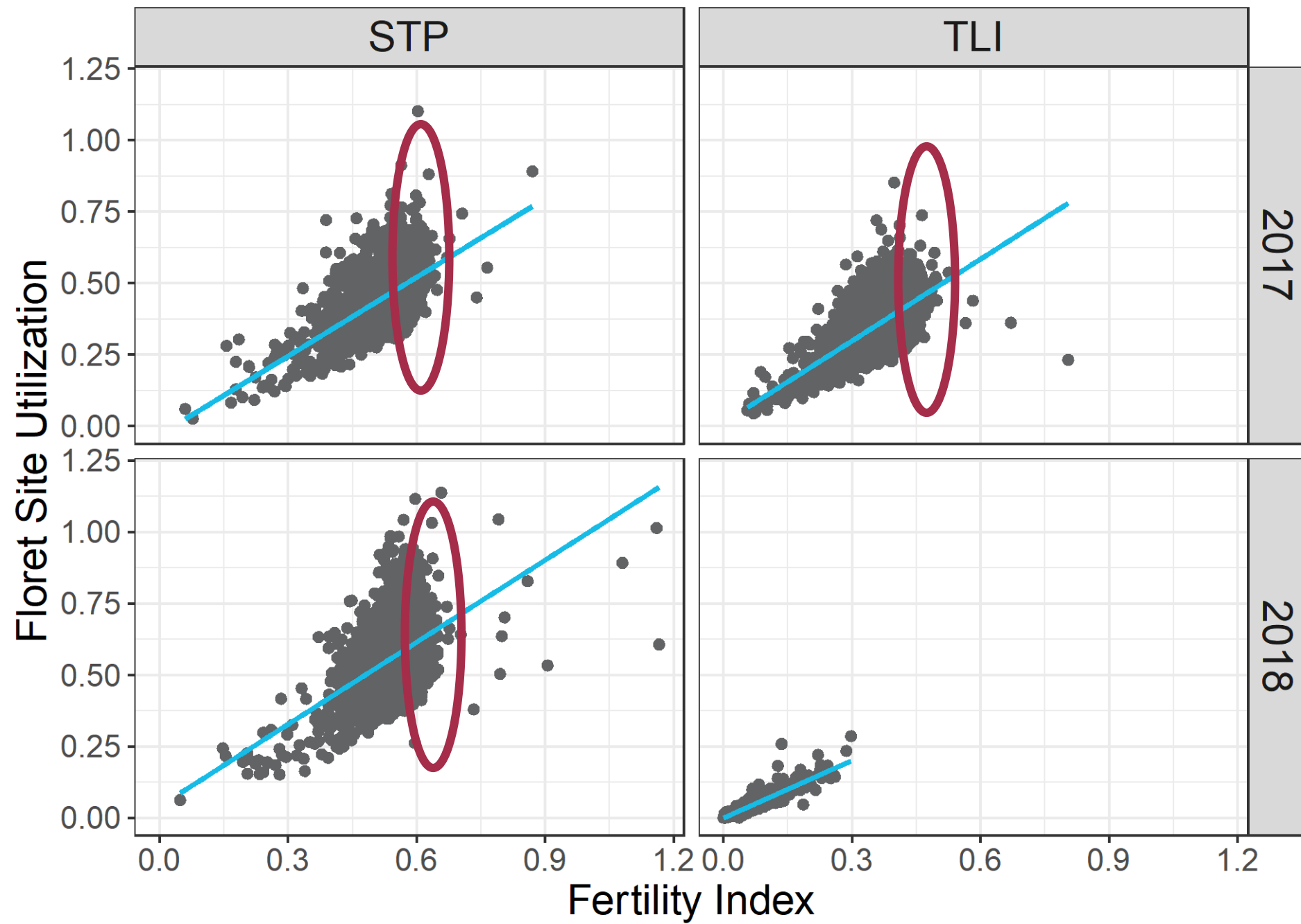
Common Parent Mean
Donor Parent Mean
Progeny Mean



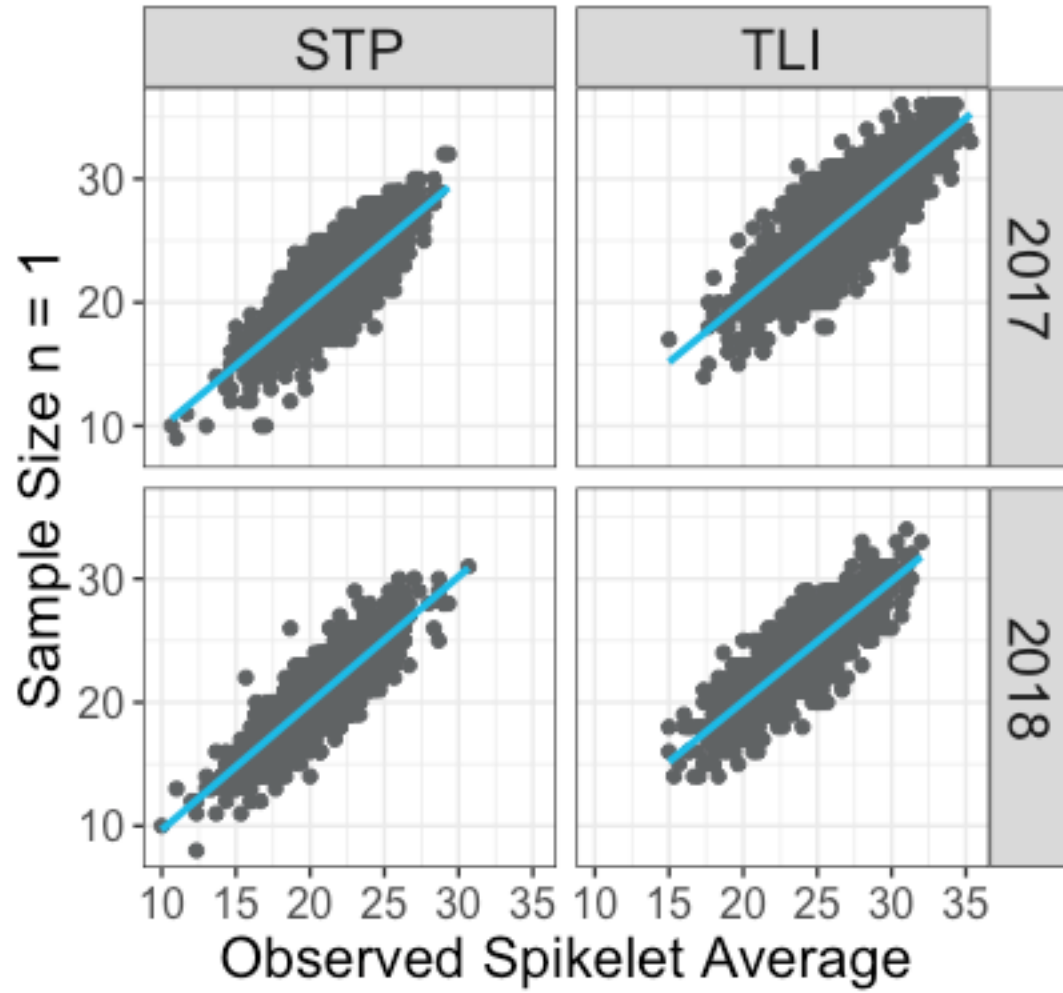


Fertility Index

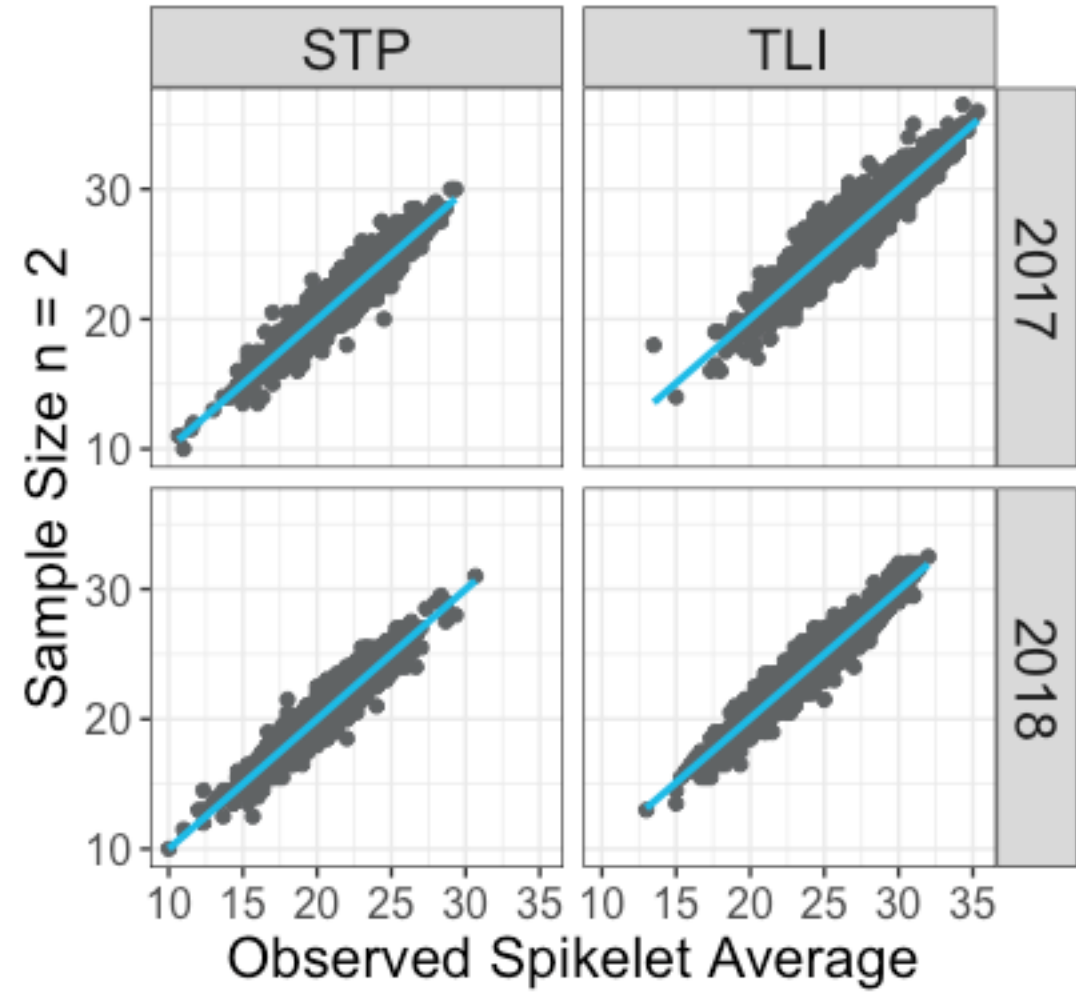




Reducing Sample Size

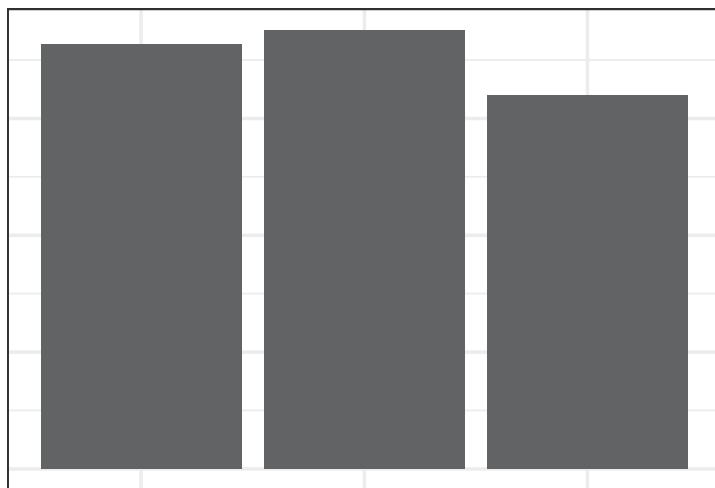


$r = 0.91$



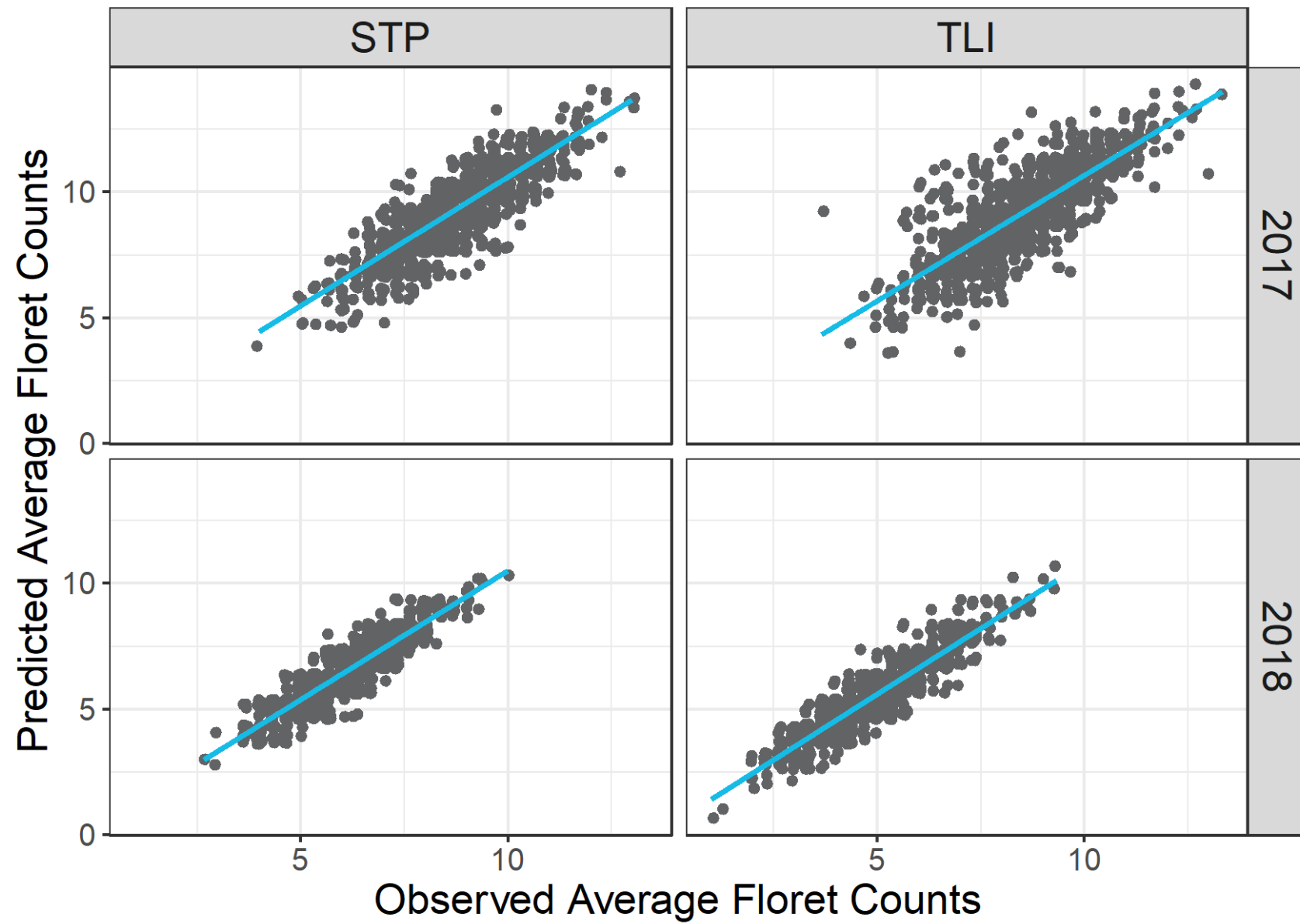
$r = 0.97$





8.5% fewer in the bottom 1/3, 12.5% fewer in the top 1/3



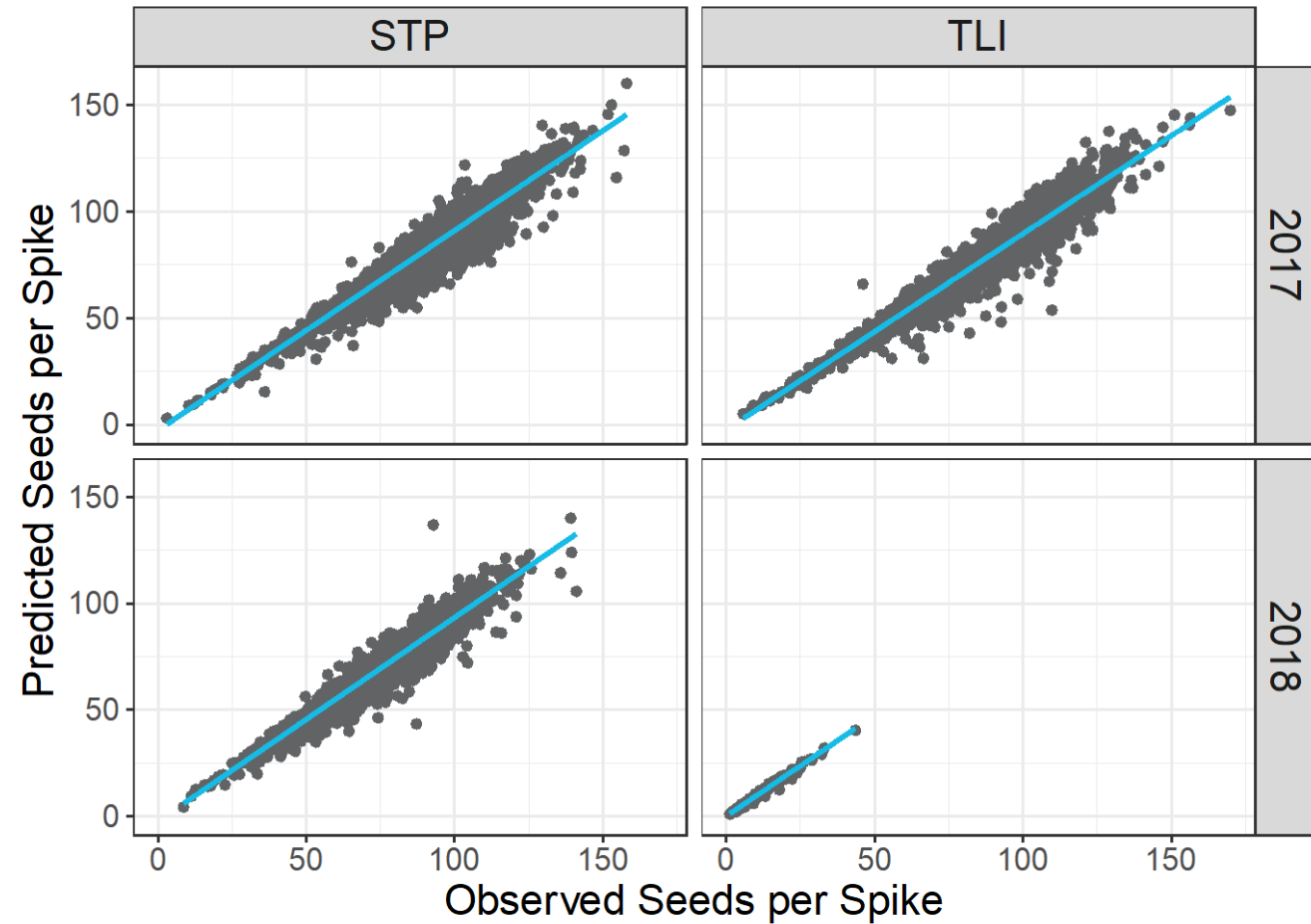


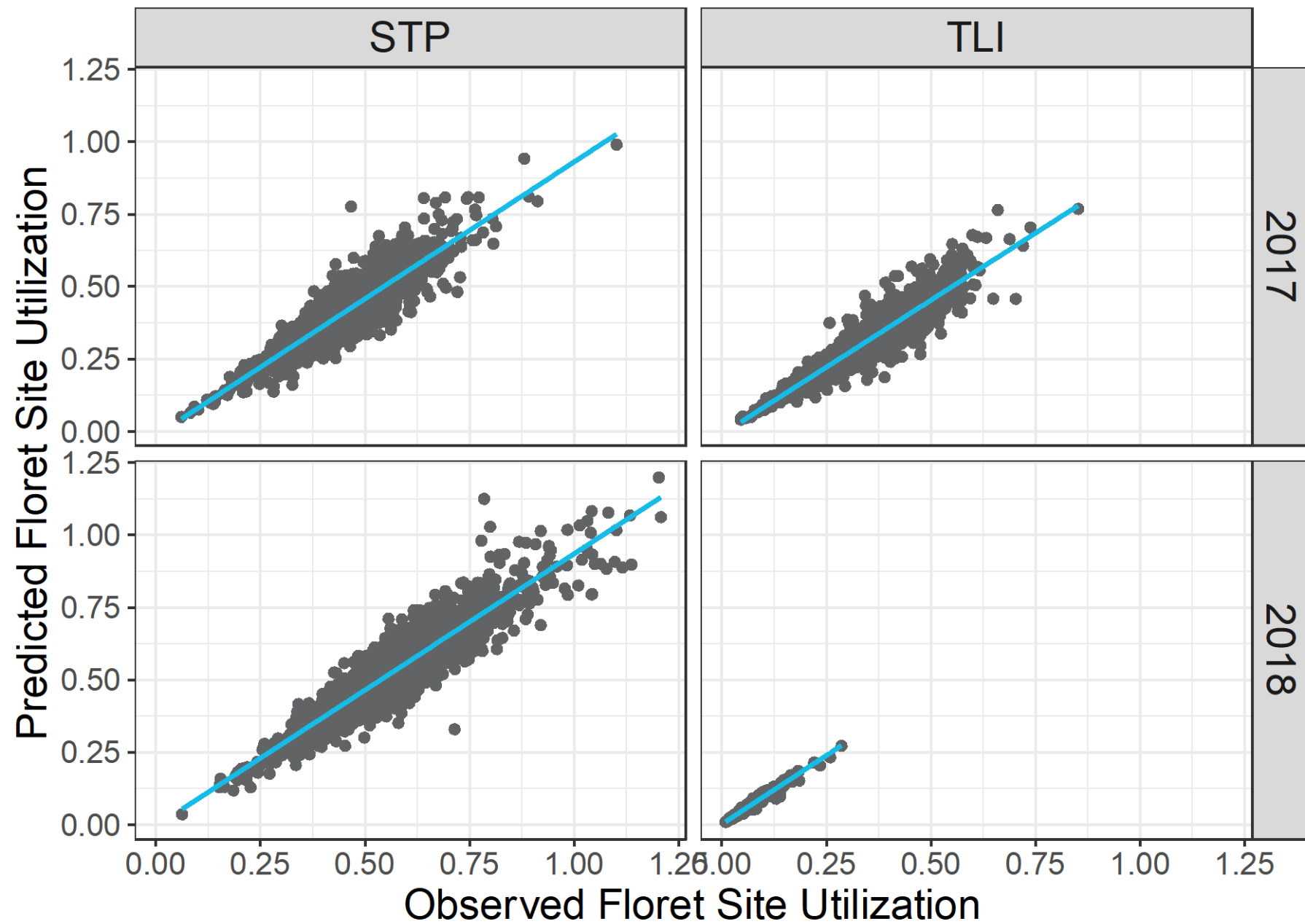
$r = 0.83 - 0.92$ depending on environment, increasing in the second year



Seed Count

- Measured: Seed Counter
- Approximated: Yield / Avg Seed Weight
 - $r = 0.94 = 0.99$ depending on environment





$r = 0.87, 0.89, 0.93, 0.99$

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