

Table 1: Economic values (\$USD) associated with inputs and yield for each treatment.

		Value (\$USD ha <sup>-1</sup> )	Value (\$USD MT <sup>-1</sup> )	
Input Costs	Seed	Corn	247.11	
		Sorghum	24.71	
		Sunflower	39.54	
		Soybean		
	Herbicide	Dual	67.06	
		Acuron	88.96	
	Machinery	Single pass	26.19	
		Fuel		
	Gross Return	Cost per MT		3.93
		Forage		
	Dry matter		90.00	

Table 2: Variable costs (\$USD ha<sup>-1</sup>) are shown for each crop treatment as means. Different letters indicated significant difference between crop treatment input costs (Tukey's HSD,  $P < 0.05$ ).

Crop Treatment	Variable costs (\$USD ha <sup>-1</sup> )	Return over variable costs (\$USD ha <sup>-1</sup> )	Yield (kg ha <sup>-1</sup> )
Corn	\$486.82 a	\$576.33 ab	11,812.78 a
Sorghum	\$256.48 d	\$725.09 a	10,906.34 ab
Corn/Sorghum	\$385.01 b	\$393.40 bcd	8,648.93 bcd
Soybean	\$393.11 b	\$38.91 e	4,800.18 e
Sunflower	\$246.55 d	\$167.94 de	4,605.50 e
Soybean/Sunflower	\$326.78 c	\$255.63 cde	6,471.31 de
Corn/Soybean	\$471.56 a	\$449.88 bc	10,238.24 abc
Corn/Sorghum/Soybean/Sunflower	\$368.51 bc	\$301.07 cd	7,439.85 cde

Table 3: Means  $\pm$  SE of ground beetles caught in 48hr pitfall traps.

No. Crop Species	<i>Pterostichus melanarius</i>	<i>Poecilus chalcites</i>	<i>Pterostichus spp.</i>	<i>Amara arena</i>	<i>Chlaenius tricolor</i>	<i>Notrophilus aquaticus</i>	<i>Amara spp</i>	<i>Pterostichus mutus</i>	<i>Poecilus lucublodus</i>	<i>Harpalus affinis</i>	<i>Harpalus spp</i>	Other/ Unknown	Total
1	0.925 $\pm$ 0.26	0.025 $\pm$ 0.025	0.450 $\pm$ 0.19	0.025 $\pm$ 0.03	0.075 $\pm$ 0.06	0.175 $\pm$ 0.08	0	0.025 $\pm$ 0.03	0.025 $\pm$ 0.03	0	0	0.100 $\pm$ 0.05	1.825 $\pm$ 0.33
2	0.633 $\pm$ 0.16	0.033 $\pm$ 0.033	0.133 $\pm$ 0.13	0	0.033 $\pm$ 0.03	0.100 $\pm$ 0.06	0.033 $\pm$ 0.03	0.033 $\pm$ 0.03	0	0.033 $\pm$ 0.03	0	0.033 $\pm$ 0.03	1.067 $\pm$ 0.21
4	0.700 $\pm$ 0.50	0 $\pm$ 0	0.200 $\pm$ 0.13	0	0	0.200 $\pm$ 0.13	0	0	0	0	0.100 $\pm$ 0.10	0	1.200 $\pm$ 0.49
Both	0.75 $\pm$ 0.23	0	0.083 $\pm$ 0.06	0	0.042 $\pm$ 0.04	0.167 $\pm$ 0.08	0.042 $\pm$ 0.04	0	0	0	0.042 $\pm$ 0.04	0	1.125 $\pm$ 0.25
Broad	0.5 $\pm$ 0.16	0	0.600 $\pm$ 0.27	0	0	0.200 $\pm$ 0.09	0	0.033 $\pm$ 0.03	0	0.033 $\pm$ 0.04	0	0.133 $\pm$ 0.06	1.500 $\pm$ 0.32
Grass	1.154 $\pm$ 0.39	0.077 $\pm$ 0.05	0.154 $\pm$ 0.11	0.038 $\pm$ 0.04	0.115 $\pm$ 0.08	0.077 $\pm$ 0.08	0	0.038 $\pm$ 0.04	0.038 $\pm$ 0.04	0	0	0.038 $\pm$ 0.04	1.731 $\pm$ 0.41

Table 4: Means  $\pm$  SE are shown for total number of arthropods and number of predators collected from pitfall traps after 48hrs.

	<i>Total Number of Arthropods</i>	<i>Total Number of Predators</i>
Year		
2019	34.0	16.2
2020	19.3	16.3
Number Crop Species		
1	28.7	18.4
2	22.4	14.6
4	31.2	12.7
Functional Group		
Both	30.1	15.8
Broad	24.1	16.3
Grass	26.4	16.7
Herbicide		
Control	29.9	17.5
Applied	23.4	15.1

Figure 1: Forage yields are shown for all functional groups as a response to number of crop species grown together. One- species monocultures and two and four species polycultures are shown as a scatter plot to illustrate means and variation.

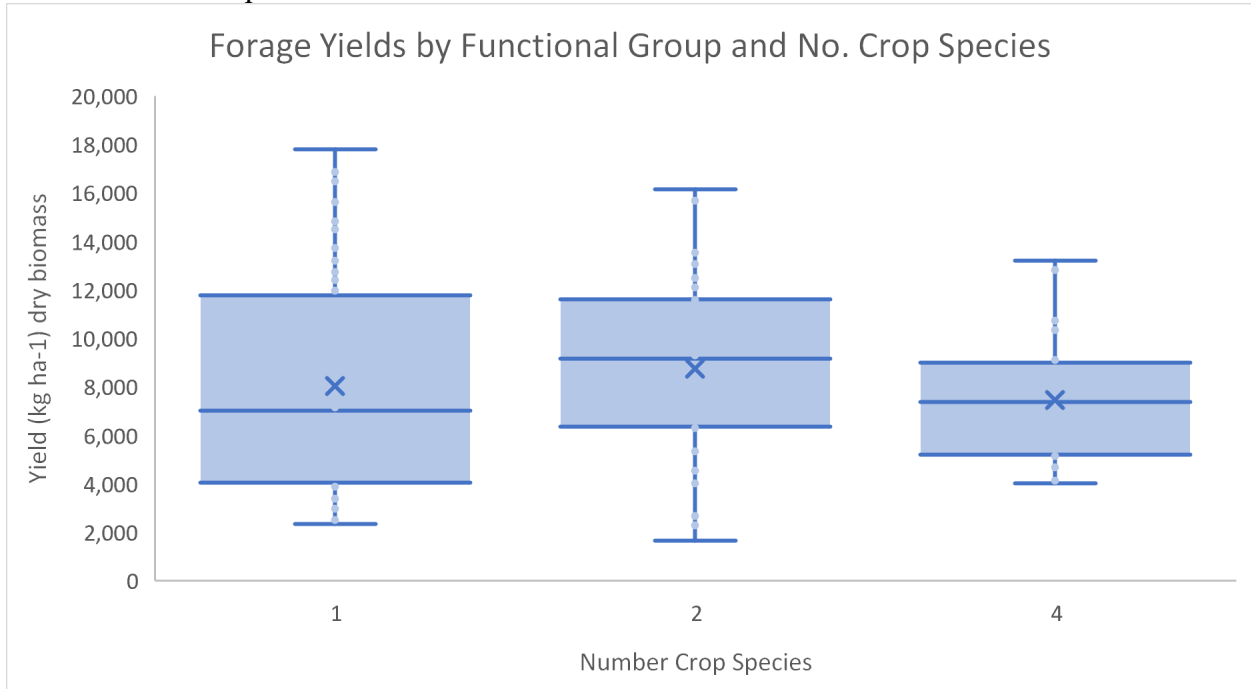


Figure 2: Forage yields are shown as means separated by functional groups (different colored circles) for each variation of the number of crop species grown together.

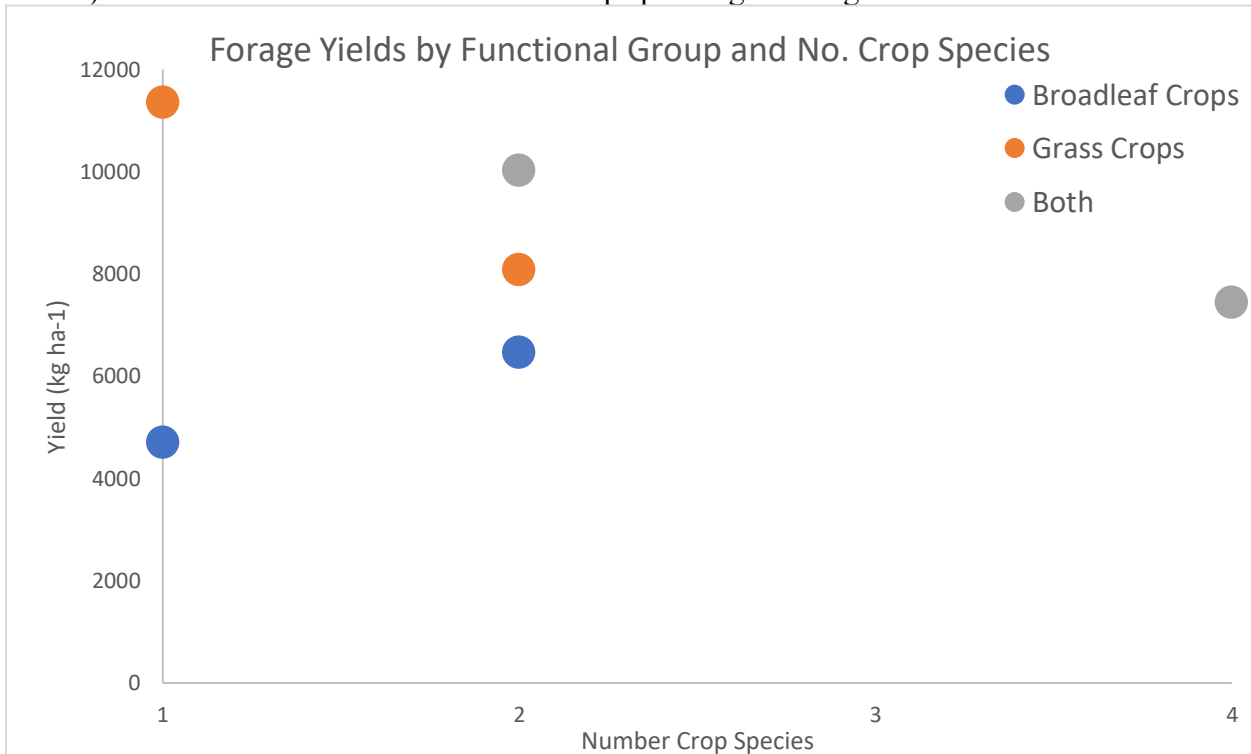


Figure 3: Abundances of both grass and broadleaf weeds are shown as means  $\pm$  standard error at both 4 and 8 weeks after planting for the different number of crop species.

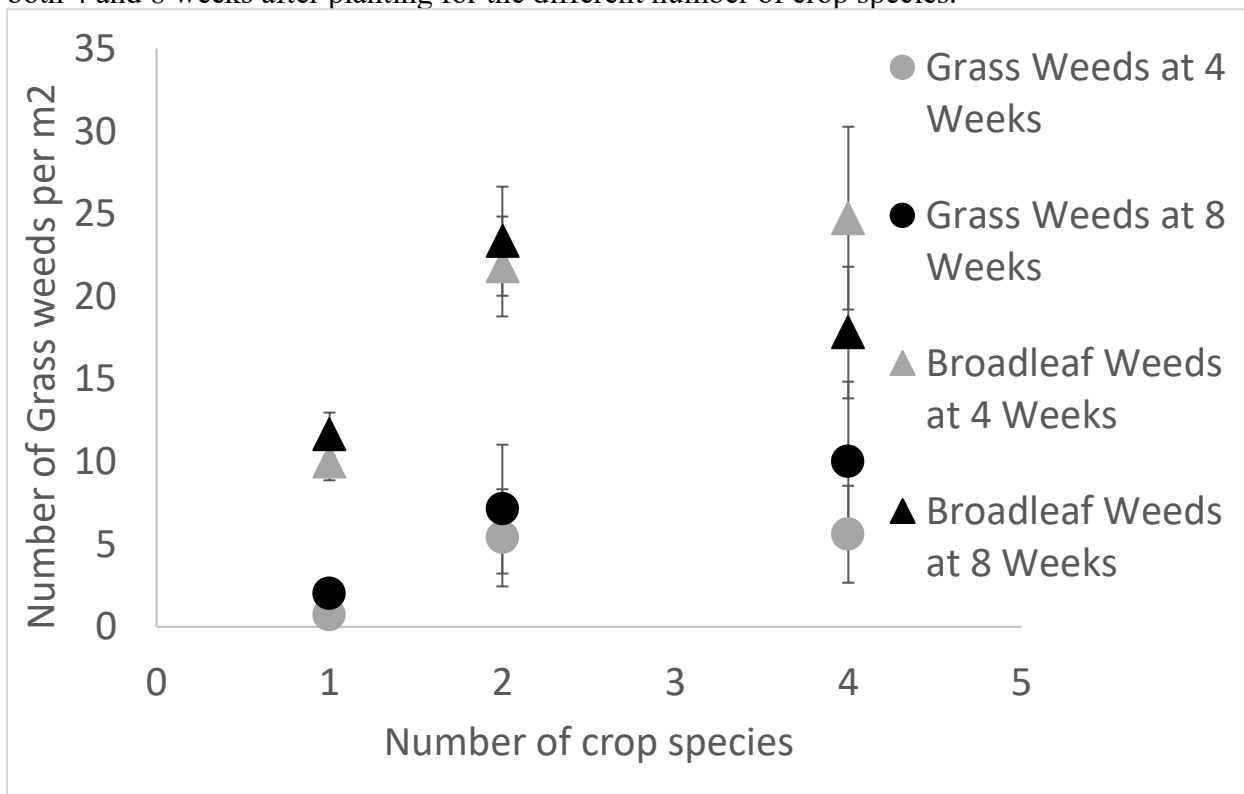


Figure 4: Average biomass is shown by week for grass and broadleaf weeds and herbicide split plots.

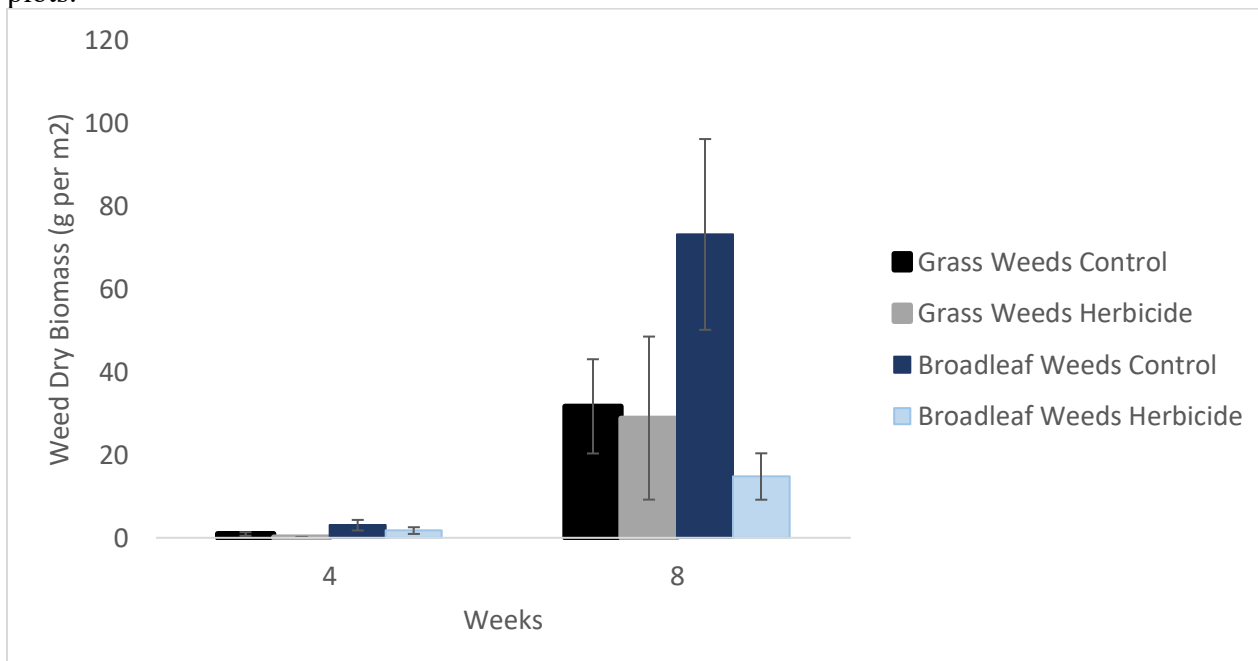


Figure 5: Weed biomasses (g per m<sup>2</sup>) are shown for both grass and broadleaf weeds at 4 and 8 weeks.

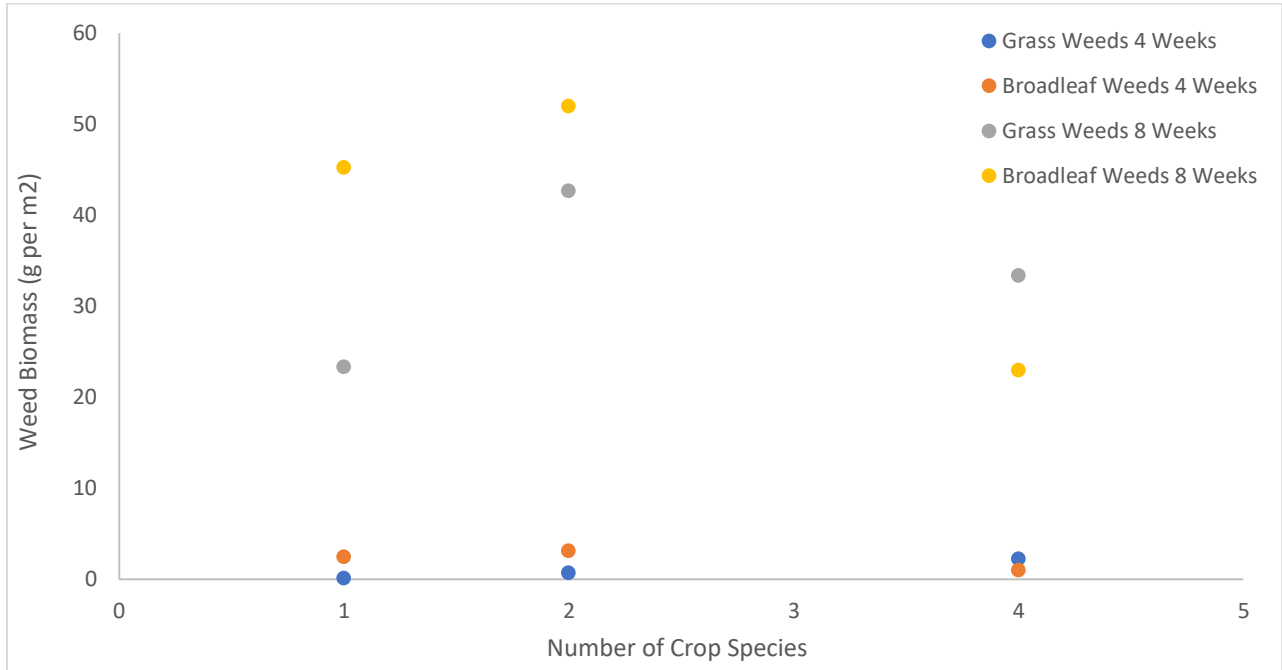


Figure 6: Means  $\pm$  SE are shown for the number of pigweed and foxtail seeds consumed from weed seed sentinel prey traps.

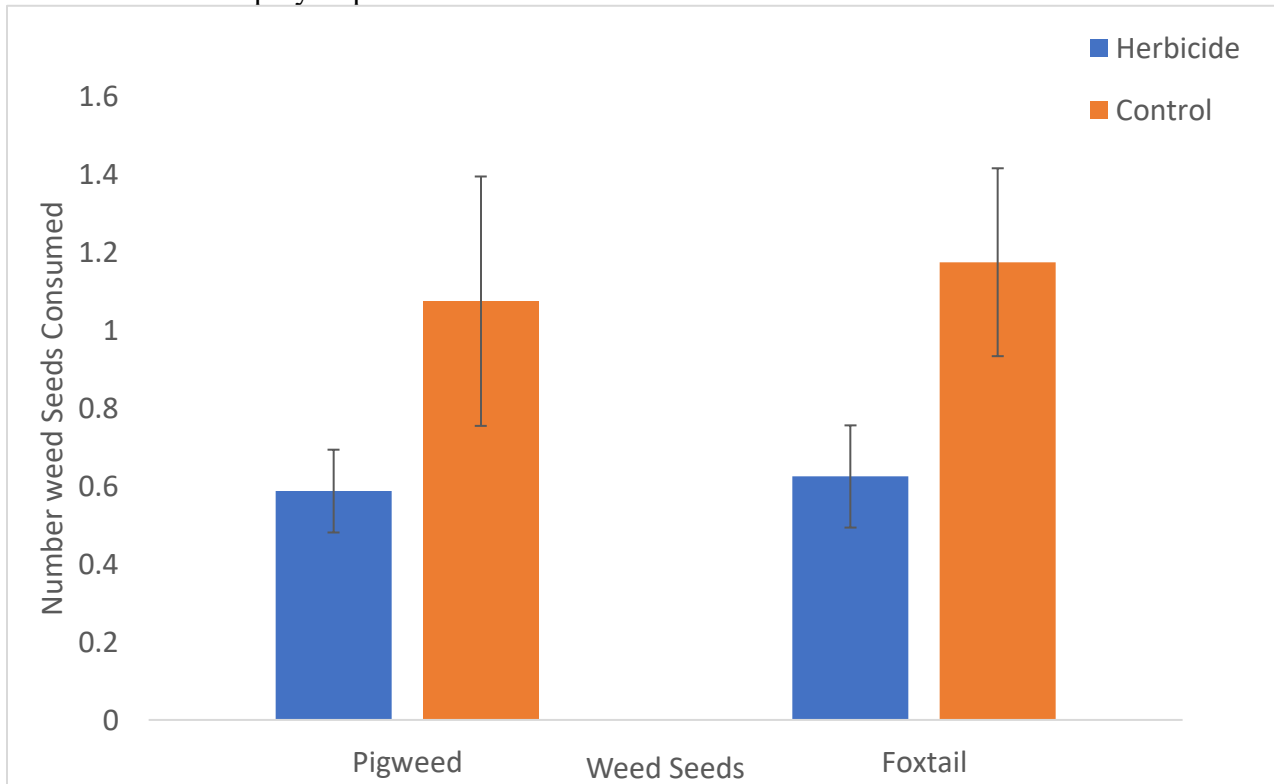


Figure 7: Means  $\pm$  SE are shown for the number of pigweed and foxtail seeds consumed from weed seed sentinel prey traps for number of crop species. Only pigweed consumption was significantly different.

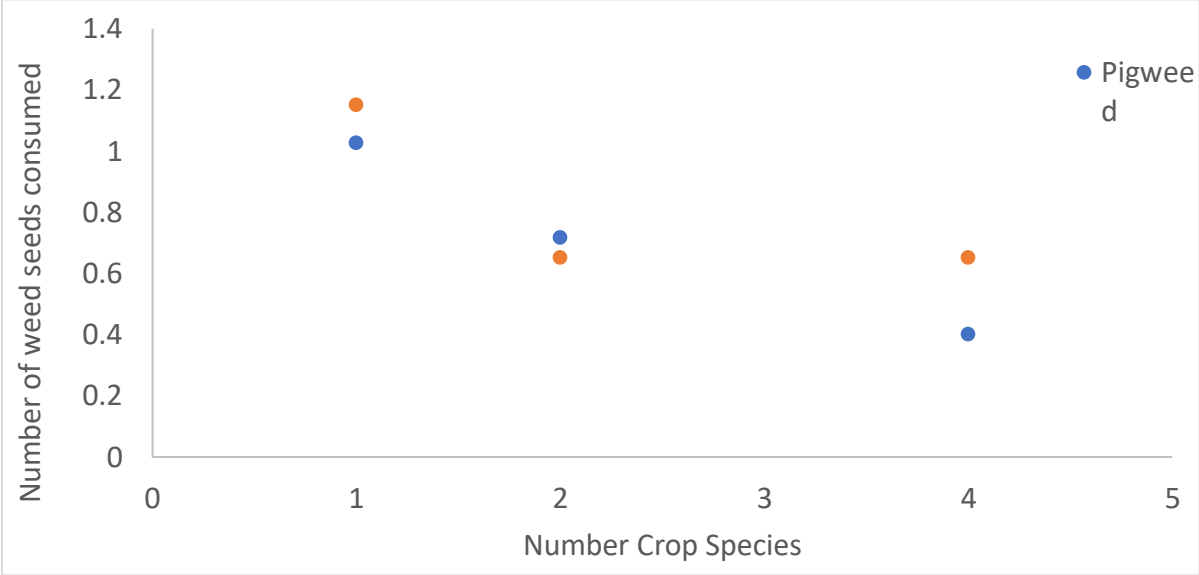


Figure 8: Weed biomass (top) and weed abundances (bottom) for both grass and broadleaf weeds are shown for proportion corn (i.e., 0.4 corresponds to 4 corn plants, 6 soybean plants).

