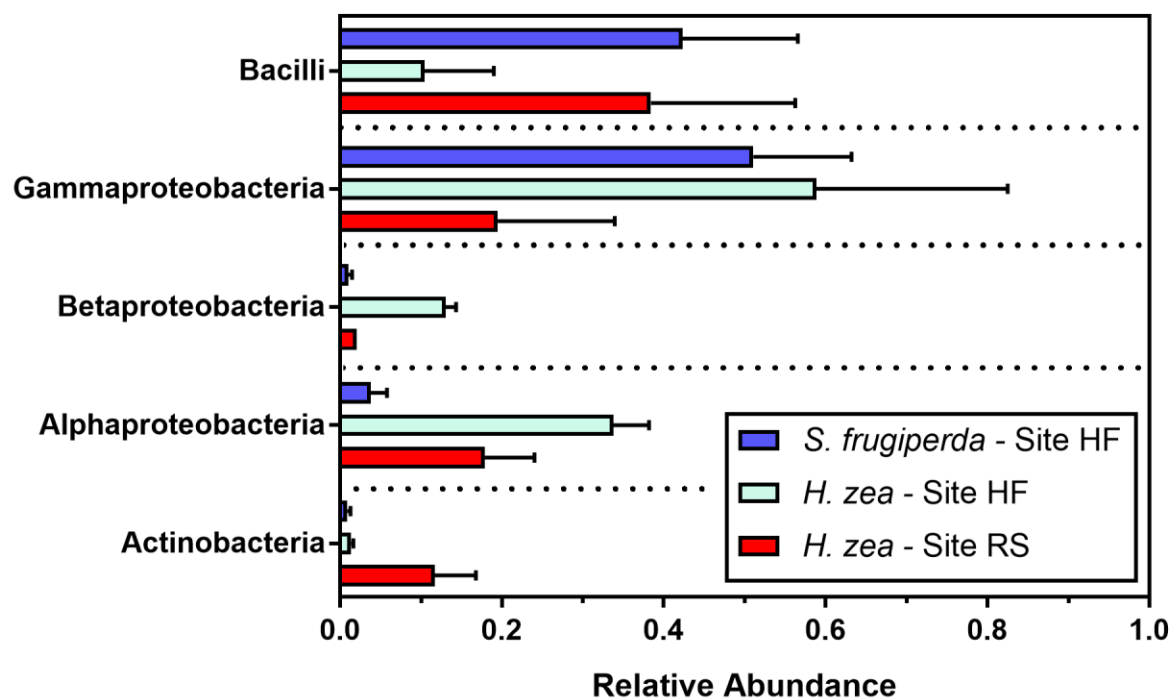


Host plant and population source drive diversity of microbial gut communities in two polyphagous insects

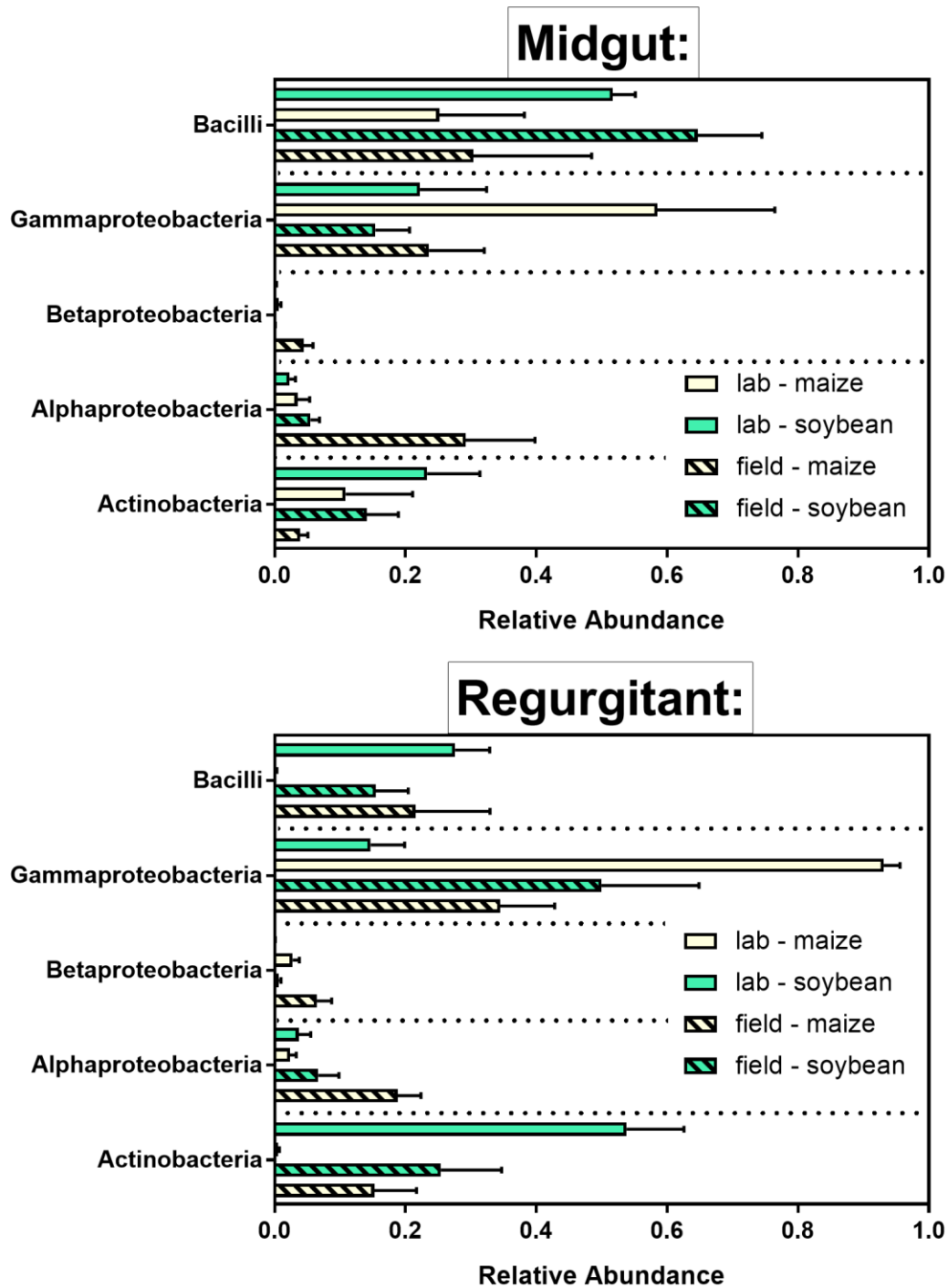
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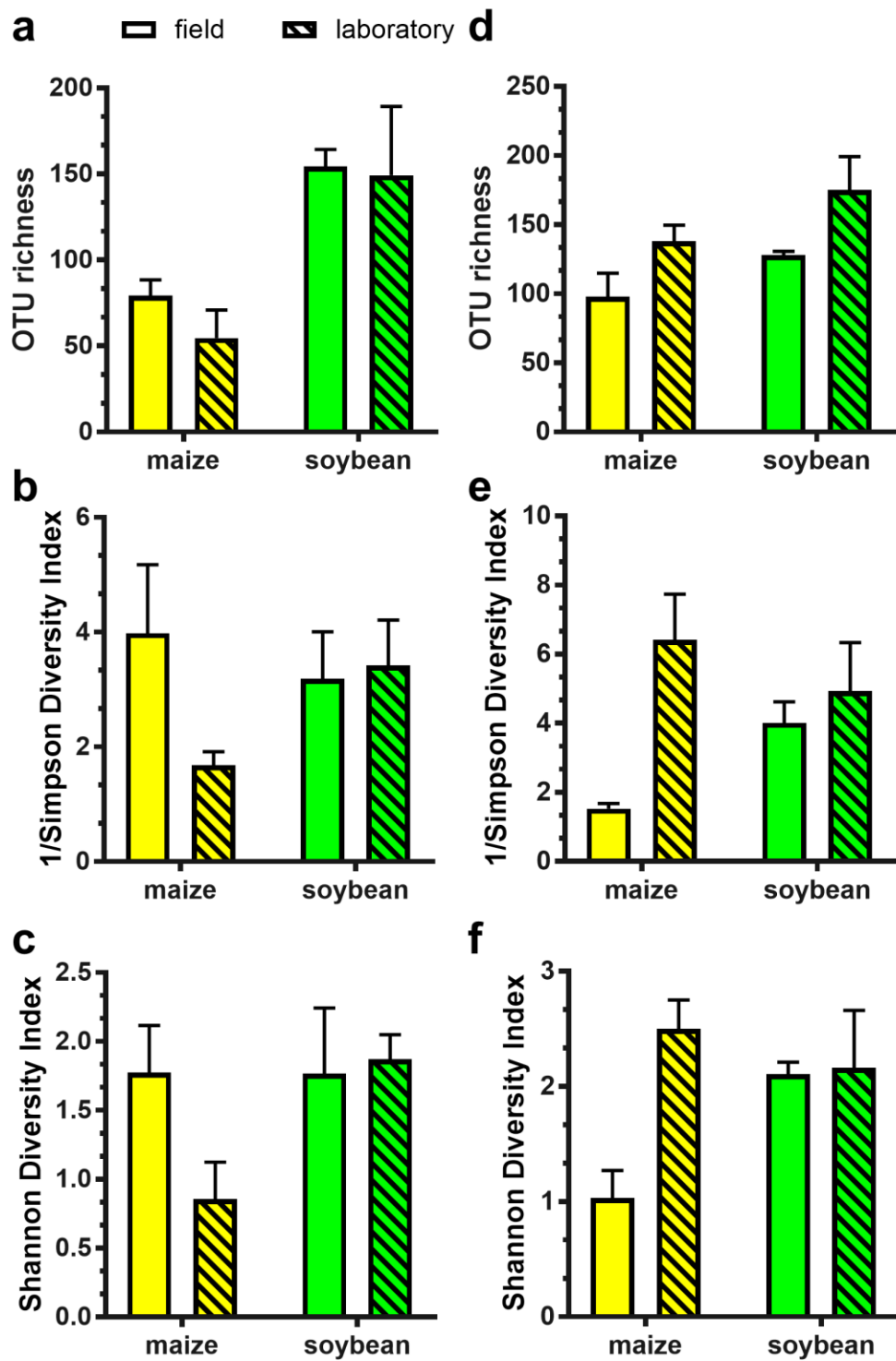
Supplementary Material



Supplemental Figure 1: Relative abundance of the most common bacterial orders present in fall armyworm (*Spodoptera frugiperda*) and corn earworm (*Helicoverpa zea*) midguts (> 95% of the abundances). Bars represent means with standard errors.



Supplemental Figure 2: Relative abundance of the most common bacterial orders present in fall armyworm midguts (top) and regurgitant (bottom) (> 95% of the abundances). Different colours represent different host plants (soybean or maize). Open bars indicate lab populations; hatched bars indicate field populations. Bars represent means with standard errors.



Supplemental Figure 3: Alpha diversity indices of midgut (a-c) and regurgitant (d-f) bacterial communities in fall armyworm (*Spodoptera frugiperda*).

Supplemental Table 1: Comparisons between alpha diversity of field-collected fall armyworm (*Spodoptera frugiperda*) and corn earworm (*Helicoverpa zea*) Numbers represent means (std. errors).

	<i>S. frugiperda</i>	<i>H. zea</i>	t-value	p-value
OTUs	85.4 (10.6)	190.2 (77.5)	1.15	0.281
1 / Simpson	2.23 (0.2)	10.7 (6.2)	2.26	0.053
Shannon	1.4 (0.2)	2.7 (0.8)	2.45	0.033

Supplemental Table 2: ANOVA of midgut and regurgitant alpha diversity in fall armyworm (*Spodoptera frugiperda*)

		<u>Plant</u>		<u>Egg source</u>		<u>Interaction</u>	
		F-value	P-value	F-value	P-value	F-value	P-value
Midgut :	OTUs	8.83	0.009	1.59	0.226	0.107	0.748
	1 / Simpson	1.25	0.282	3.97	0.065	2.3	0.15
	Shannon	2.45	0.155	2.98	0.105	1.87	0.192
Regurgitant:	OTUs	4.73	0.053	6.23	0.025	0.032	0.86
	1 / Simpson	0.26	0.642	11.2	0.004	3.46	0.083
	Shannon	1.09	0.313	11.5	0.004	5.93	0.028

Supplemental Table 3: Site descriptions and locations of field-collected plant and insect material

Site	Location	Coordinates	Crops grown	Material collected	Date collected
HF	Centre County, PA	40.7601319	Sweet corn	<i>H. zea</i> larvae	3-7 Sep 2016
		-77.8787313		<i>S. frugiperda</i> larvae	
				<i>H. zea</i> larvae	
RS	Centre County, PA	40.7106224	Soybean	Soybean foliage	7 Sep 2016
		-77.9644764	Sweet corn	Corn silk	
PRL	Lajas, PR	18.03161111	Field corn	<i>S. frugiperda</i> larvae	14-15 Feb 2017
		-67.07361111			
PRS	Salinas, PR	17.96122222	Sorghum	<i>S. frugiperda</i> larvae	14-15 Feb 2017
		-66.26805556			
PRJ	Juan Diez, PR	18.02763889	Field corn	<i>S. frugiperda</i> larvae	14-15 Feb 2017
		-66.52722222			