

SUPPLEMENTARY FILES

Effect of crop plants on fitness costs associated with resistance to *Bacillus thuringiensis* toxins Cry1Ac and Cry2Ab in cabbage loopers

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Figure S1. Summary of analysis of deviance tables of all GLM performed on all life parameters. Factors are indicated as they were added sequentially to the model, from first to last. A binomial error family was used for traits expressed as percentages (hatching, emergence, and survival) while a Poisson error family was used for all other traits. Chi-square p values indicate the level of significance of the various factors in the model as compared to the Null model (no effect included). ‘*’, $p < 0.05$; ‘**’, $p < 0.01$; ‘***’, $p < 0.001$.

DEVELOPMENT (FROM EGG TO ADULT) – Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				4189		5788.0	
Devel.Stage	6	4331.6		4183		1456.3	< 2.2e-16 ***
Plant	4	368.1		4179		1088.2	< 2.2e-16 ***
Strain	3	5.5		4176		1082.7	0.139825
Devel.Stage:Plant	24	734.0		4152		348.7	< 2.2e-16 ***
Devel.Stage:Strain	18	37.1		4134		311.6	0.005081 **
Plant:Strain	12	4.4		4122		307.2	0.975177
Devel.Stage:Plant:Strain	72	80.8		4050		226.4	0.224394

EGG HATCHING – Binomial error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				421		1.8098	
Strain	3	0.26378		418		1.5461	< 2.2e-16 ***
Plant	4	0.36486		414		1.1812	< 2.2e-16 ***
Strain:Plant	12	0.08574		402		1.0955	0.001573 **

EGG LAYING KINETICS – Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				6783		589239	
Day	1	130739		6782		458500	< 2.2e-16 ***
Plant	4	13953		6778		444547	< 2.2e-16 ***
Strain	3	1341		6775		443206	< 2.2e-16 ***
Plant:Strain	11	1243		6764		441963	< 2.2e-16 ***
Day:Plant	4	276		6760		441687	< 2.2e-16 ***
Day:Strain	3	9375		6757		432312	< 2.2e-16 ***
Day:Plant:Strain	11	9481		6746		422831	< 2.2e-16 ***

EMERGENCE OF HEALTHY ADULTS – Binomial error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				599		155.85	
Plant	4	16.3321		595		139.52	0.002604 **
Strain	3	0.3170		592		139.20	0.956802
Plant:Strain	12	2.0559		580		137.14	0.999315

FECUNDITY (TOTAL NUMBER OF EGGS PER FEMALE) - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				421		29247	
Plant	4	14091.0		417		15156	< 2.2e-16 ***
Strain	3	978.1		414		14178	< 2.2e-16 ***
Plant:Strain	12	590.4		402		13587	< 2.2e-16 ***

LARVAL STAGE DURATION - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				599		679.07	
Plant	4	622.12		595		56.95	< 2.2e-16 ***
Strain	3	17.68		592		39.27	0.0005113 ***
Plant:Strain	12	14.56		580		24.71	0.2661775

LAYING DAYS (TOTAL NUMBER) - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				421		283.80	
Plant	4	69.985		417		213.82	2.287e-14 ***
Strain	3	1.811		414		212.01	0.6125
Plant:Strain	12	6.116		402		205.89	0.9101

MORTALITY (DEVELOPMENTAL STAGE-SPECIFIC)- Binomial error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				2999		731.24	
Stage	4	28.896		2995		702.34	8.209e-06 ***
Strain	3	15.350		2992		686.99	0.001541 **
Plant	4	107.136		2988		579.85	< 2.2e-16 ***
Strain:Plant	12	5.056		2976		574.80	0.956087
Stage:Plant	16	231.952		2960		342.85	< 2.2e-16 ***
Stage:Strain	12	3.461		2948		339.39	0.991319
Stage:Strain:Plant	48	26.006		2900		313.38	0.996018

PUPAL WEIGHT - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				1799		28.931	
Plant	4	9.3607		1795		19.570	0.05269
Strain	3	0.4812		1792		19.089	0.92301
Gender	1	0.0396		1791		19.050	0.84233
Plant:Strain	12	0.4731		1779		18.576	1.00000
Plant:Gender	4	0.1819		1775		18.395	0.99611
Strain:Gender	3	0.0157		1772		18.379	0.99948
Plant:Strain:Gender	12	0.1106		1760		18.268	1.00000

PUPAL STAGE DURATION - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				594		187.377	
Plant	4	52.646		590		134.730	1.01e-10 ***
Strain	3	4.297		587		130.433	0.2311
Plant:Strain	12	39.345		575		91.088	9.23e-05 ***

SEX RATIO - Poisson error

	Df	Deviance	Resid.	Df	Resid.	Dev	Pr(>Chi)
NULL				593		172.56	
Plant	3	5.3841		590		167.18	0.1457
Strain	3	2.4686		587		164.71	0.4810
Plant:Strain	9	2.6523		578		162.06	0.9765

Table S2. Sex ratio in each strain and each plant. Values are indicated as mean \pm SD. The host plant (GLM, $df = 3$, $p = 0.15$), the strain (GLM, $df = 3$, $p = 0.48$) and their interaction (GLM, $df = 9$, $p = 0.98$) had no significant effect on sex ratio.

	Susceptible	Cry1Ac-R	Cry2Ab-R	Cry1Ac-Cry2Ab-R	Mean
Artificial diet	59.0 \pm 17.6%	51.1 \pm 16.5%	55.4 \pm 19.9 %	47.0 \pm 16.0 %	53.1 \pm 17.5%
Cabbage	44.1 \pm 15.6%	49.4 \pm 22.8%	55.9 \pm 24.7%	41.4 \pm 24.8%	47.7 \pm 22.0%
Cotton	46.0 \pm 20.0%	45.1 \pm 18.0%	39.2 \pm 25.4%	36.9 \pm 30.6%	41.8 \pm 23.5%
Tobacco	40.5 \pm 17.3%	44.1 \pm 24.6%	37.1 \pm 26.5%	37.6 \pm 21.5%	39.8 \pm 22.5%
Tomato	59.5 \pm 23.8%	53.3 \pm 24.9%	40.3 \pm 32.3%	44.8 \pm 25.6%	49.5 \pm 26.7%
Mean	49.8 \pm 18.9%	48.6 \pm 21.4%	45.6 \pm 25.8%	41.5 \pm 23.7%	