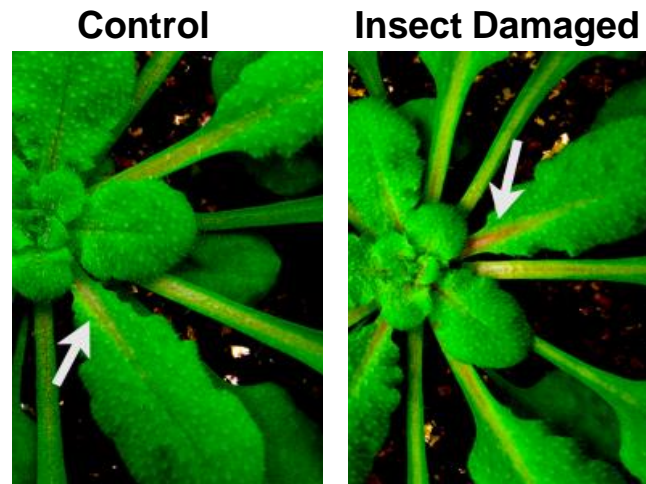


**Figure A. Reddening in the petiole of a young leaf 48h following insect damage to the older leaf below it. White arrows point to petioles of young leaves where color differences were evident.**



**Table A. Source leaf removal increases total phenolics in *A. thaliana* plants.** Summary of 3-way ANOVA comparing total phenolics within two herbivore-damaged leaves and young, systemic leaves of intact *A. thaliana* rosettes or those with source leaves removed.

GLM results		Total Phenolics	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	5.67	0.0042
B, Leaf type	1	2.62	0.1078
C, Source leaf removal	1	4.41	0.0373
A x B	2	0.20	0.8154
A x C	2	14.87	<0.0001
B x C	1	18.71	<0.0001
A x B x C	2	2.47	0.088

**Table B. Source leaf removal reduces anthocyanin accumulation in *A. thaliana* plants.** Summary of 3-way ANOVA comparing anthocyanin accumulation within two herbivore-damaged leaves and young, systemic leaves of intact *A. thaliana* rosettes or those with source leaves removed.

GLM results		Anthocyanins	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	0.22	0.7990
B, Leaf type	1	38.11	<0.0001
C, Source leaf removal	1	14.95	0.0002
A x B	2	0.06	0.9437
A x C	2	1.00	0.3715
B x C	1	11.50	0.0009
A x B x C	2	2.10	0.1261

**Table C. Source leaf removal does not influence flavonoid accumulation in *A. thaliana* plants.** Summary of 3-way ANOVA comparing flavonoid accumulation within two herbivore-damaged leaves and young, systemic leaves of intact *A. thaliana* rosettes or those with source leaves removed.

GLM results		Flavonoids	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	33.79	<0.0001
B, Leaf type	1	45.57	<0.0001
C, Source leaf removal	1	2.16	0.1436
A x B	2	5.76	0.0038
A x C	2	5.87	0.0035
B x C	1	23.54	<0.0001
A x B x C	2	1.91	0.1522

**Table D. Middle-aged leaves of *suc2-1* plants contain lower levels of total phenolic compounds relative to WT plants.**

Summary of 3-way ANOVA comparing total phenolics within two herbivore-damaged leaves and young, systemic leaves of wild-type (Ws-2) and mutant (*suc2-1*) lines.

GLM results		Total Phenolics	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	0.90	0.4086
B, Genotype	1	7.31	0.0083
C, Leaf type	1	0.34	0.5598
A x B	2	1.37	0.2606
A x C	2	0.08	0.9206
B x C	1	1.34	0.2506
A x B x C	2	0.79	0.4569

**Table E. Middle-aged leaves of *suc2-1* plants contain lower levels of anthocyanin relative to WT plants.** Summary of 3-way ANOVA comparing anthocyanin accumulation within two herbivore-damaged leaves and young, systemic leaves of wild-type (Ws-2) and mutant (*suc2-1*) lines.

GLM results		Anthocyanins	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	2.49	0.0891
B, Genotype	1	0.99	0.3221
C, Leaf type	1	1.97	0.1641
A x B	2	1.43	0.2459
A x C	2	0.23	0.7957
B x C	1	0.98	0.3247
A x B x C	2	0.66	0.5203

**Table F. Middle-aged leaves of *suc2-1* plants contain lower levels of flavonoids relative to WT plants.** Summary of 3-way ANOVA comparing flavonoid accumulation within two herbivore-damaged leaves and young, systemic leaves of wild-type (Ws-2) and mutant (*suc2-1*) lines.

GLM results		Flavonoids	
Source of Variation	<i>df</i>	<i>F</i>	<i>P</i>
A, Herbivory	2	3.70	0.0287
B, Genotype	1	12.59	0.0006
C, Leaf type	1	0.02	0.8770
A x B	2	17.42	<0.0001
A x C	2	1.86	0.1620
B x C	1	1.09	0.2999
A x B x C	2	0.24	0.7846