

Online Material

Appendix 1. Arthropod densities on soybean stems and leaves of the glyphosate-tolerant GM variety and the conventional variety treated with glyphosate or conventional weed control.

Arthropod order	Year	GMHT soybean ¹		Conventional soybean ¹	
		Glyphosate ²	Conventional ²	Glyphosate	Conventional
Araneae	2004	0.4 ± 0.7 ³	0.3 ± 0.7	0.4 ± 0.5	0.3 ± 0.4
	2005	1.1 ± 2.4	0.7 ± 1.1	0.8 ± 1.3	1.1 ± 1.5
Acari	2004	1.5 ± 2.3	2.1 ± 3.2	1.1 ± 2.2	1.4 ± 2.1
	2005	0.6 ± 0.8	1.4 ± 2.4	0.4 ± 0.7	0.4 ± 0.8
Thysanoptera	2004	3.2 ± 2.6	3.5 ± 3.1	1.2 ± 0.7	1.9 ± 1.8
	2005	8.4 ± 4.3	7.4 ± 4.1	4.3 ± 2.6	4.0 ± 2.6
Homoptera	2004	5.6 ± 5.4	3.2 ± 3.4	5.1 ± 4.3	4.9 ± 4.3
	2005	5.4 ± 7.1	8.6 ± 11.8	2.8 ± 3.1	3.1 ± 3.9
Heteroptera	2004	1.4 ± 2.3	1.0 ± 1.7	0.7 ± 1.0	0.9 ± 1.3
	2005	2.0 ± 2.3	2.5 ± 2.4	1.4 ± 1.8	3.0 ± 5.0
Coleoptera	2004	0.3 ± 0.5	0.3 ± 0.4	0.4 ± 0.4	0.6 ± 0.9
	2005	0.5 ± 0.7	0.7 ± 1.0	0.5 ± 0.7	1.0 ± 1.2
Diptera	2004	1.1 ± 1.5	1.1 ± 1.6	2.4 ± 3.8	1.1 ± 1.0
	2005	1.6 ± 1.3	1.6 ± 2.1	0.7 ± 0.7	1.4 ± 2.7
Lepidoptera	2004	0.2 ± 0.2	0.5 ± 0.9	0.5 ± 0.6	0.3 ± 0.3
	2005	2.3 ± 5.8	0.6 ± 0.7	0.4 ± 0.4	0.5 ± 0.6
Hymenoptera	2004	0.6 ± 0.8	1.6 ± 2.3	0.9 ± 2.0	0.4 ± 0.4
	2005	0.8 ± 0.8	0.8 ± 0.9	0.6 ± 0.6	0.9 ± 1.5
Total ⁴	2004	14.2 ± 12.1	13.5 ± 12.8	12.8 ± 12.1	11.7 ± 8.8
	2005	23.1 ± 15.8	24.9 ± 19.8	12.2 ± 5.1	15.8 ± 11.5

¹Soybean varieties: GMHT represents a glyphosate-tolerant GM variety (AG3701RR in 2004 and AG3802RR in 2005), and Conventional represents the conventional variety (Tachinagaha).

²Weed control regimes: glyphosate and conventional weed control.

³Mean numbers of arthropods per plant ± s.d. averaged over three sampling periods (July, August, and September).

⁴Total number of arthropods.

Appendix 2. Arthropod densities on soybean flowers and pods of the glyphosate-tolerant GM variety and the conventional variety treated with glyphosate or conventional weed control.

Arthropod	Year	GMHT soybean ¹		Conventional soybean ¹	
		Glyphosate ²	Conventional ²	Glyphosate	Conventional
Flowers					
Thysanoptera	2004	6.6 ± 4.4 ³	7.7 ± 6.5	2.3 ± 1.1	3.3 ± 1.3
	2005	1.7 ± 1.5	0.5 ± 0.3	0.5 ± 0.3	0.7 ± 0.4
Pods					
<i>Asphondylia yushimai</i>	2004	6.8 ± 1.5	0.8 ± 1.0	0.3 ± 0.3	0.4 ± 0.1
	2005	8.8 ± 0.9	6.7 ± 4.4	0.8 ± 0.6	1.6 ± 1.1
Total number of arthropods	2004	18.2 ± 7.7	5.7 ± 4.4	4.1 ± 1.2	4.2 ± 1.7
	2005	14.3 ± 1.1	12.1 ± 4.5	3.2 ± 1.2	9.3 ± 11.0

¹Soybean varieties: GMHT represents a glyphosate-tolerant GM variety (AG3701RR in 2004 and AG3802RR in 2005) and Conventional represents the conventional variety (Tachinagaha).

²Weed control regimes: glyphosate and conventional weed control.

³Mean numbers of arthropods per plant ± s.d.

Appendix 3. Densities of soil macro-organisms in the plots of the glyphosate-tolerant GM variety and the conventional variety treated with glyphosate or conventional weed control.

Organism order	Year	GMHT soybean ¹		Conventional soybean ¹	
		Glyphosate ²	Conventional ²	Glyphosate	Conventional
Tubificida	2004	1.1 ± 1.2 ³	0.6 ± 0.3	0.4 ± 0.4	1.0 ± 1.1
	2005	0.1 ± 0.1	0.1 ± 0.2	0.1 ± 0.2	0.1 ± 0.3
Acari	2004	6.8 ± 4.8	9.1 ± 5.9	7.4 ± 3.7	9.5 ± 6.6
	2005	11.8 ± 5.8	12.3 ± 6.2	9.7 ± 3.7	8.7 ± 4.2
Collembola	2004	5.6 ± 4.2	3.5 ± 1.9	4.7 ± 3.8	7.3 ± 5.1
	2005	7.7 ± 5.6	5.6 ± 3.9	7.7 ± 10.4	2.8 ± 2.8
Psocoptera	2004	0.7 ± 1.0	0.3 ± 0.8	0.2 ± 0.4	0.9 ± 1.8
	2005	1.2 ± 0.9	1.3 ± 0.8	1.6 ± 2.2	1.2 ± 1.2
Coleoptera	2004	0.4 ± 0.4	0.1 ± 0.2	0.2 ± 0.3	0.1 ± 0.2
	2005	0.2 ± 0.2	0.2 ± 0.3	0.4 ± 0.3	0.3 ± 0.4
Lepidoptera	2004	0.1 ± 0.1	0.1 ± 0.2	0.1 ± 0.1	0.3 ± 0.8
	2005	0.2 ± 0.4	0.3 ± 0.5	0.2 ± 0.3	0.4 ± 0.6
Total number of individuals	2004	14.8 ± 7.2	13.9 ± 7.1	13.0 ± 6.4	19.1 ± 10.4
	2005	22.4 ± 7.4	20.9 ± 9.6	20.7 ± 13.5	14.9 ± 5.4

¹Soybean varieties: GMHT represents a glyphosate-tolerant GM variety (AG3701RR in 2004 and AG3802RR in 2005), Conventional represents the conventional variety (Tachinagaha).

²Weed control regimes: glyphosate and conventional weed control.

³Mean numbers of organisms per 100-mL soil sample ± s.d. averaged over three sampling periods (July, August, and September).