

Molecular identification of spiders preying on *Empoasca vitis* in a tea plantation

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Supporting information

Additional supporting information may be found in the online version of this article:

Table S1. Statistic of the spider species in the canopies of tea.

Table S2. Population dynamics of *E. vitis* and four dominant spider species in the canopies of tea. Values presented as mean \pm SD (N = 3).

Table S3. Effect of background DNA of predators on detection of *E. vitis*. Values presented as mean \pm SD. CV stands for coefficients of variation. Exp1, the genomic DNA dissolved in ultra-pure water; Exp2, the genomic DNA dissolved in the genomic DNA mixture of four dominant spider species.

Figure S1. A RQ-PCR standard curve for using stock plasmids of *E. vitis*. *Ct* stands for RQ-PCR cycle number where fluorescence curve crosses threshold line. Each concentration was used in triplicates. The curve was linear over the range of concentrations used (1.92×10^2 – 1.92×10^6 copies/ μ L). The amplification efficiency was 97.6%.

Figure S2. Agarose gel electrophoresis of PCR amplified DNA of field-collected individual spiders with various dilution. Cropped gels are merged and displayed (the full-length of each uncropped gel is 11.5 cm). a: Non-diluted DNA sample; b: Diluted by 3-fold with elution buffer; c: Diluted by 6-fold with elution buffer; d: Diluted by 9-fold with elution buffer. Lanes 1: DNA marker; Lanes 2–16: adult *E. albaria* from field collection.

Table S1. Statistic of the spider species in the canopies of tea.

	Family	Species	Field-collected number (adult)	Dominance (%)	
	Salticidae	<i>Evarcha albaria</i>	382	43.2	
		<i>Phintella bifurcilinea</i>	23	2.6	
		<i>Phintella melloteei</i>	17	1.9	
		<i>Plexippus setipes</i>	16	1.8	
		<i>Phintella yinae</i>	3	0.3	
		<i>Bianor hotingchiehi</i>	1	0.1	
		<i>Carrhotus xanthogramma</i>	1	0.1	
		<i>Phintella debilis</i>	1	0.1	
		Theridiidae	<i>Meotipa pulcherrima</i>	75	8.5
	<i>Coleosoma octomaculatum</i>		74	8.4	
	<i>Theridion mirabilis</i>		20	2.3	
	<i>Phycosoma stictum</i>		3	0.3	
	<i>Phycosoma amamiense</i>		2	0.2	
	<i>Euryopis galeiforma</i>		2	0.2	
	<i>Theridula gonygaster</i>		2	0.2	
	<i>Takayus lushanensis</i>		2	0.2	
	<i>Meotipa vesiculosa</i>		1	0.1	
	Araneidae		<i>Araneus ejusmodi</i>	25	2.8
			<i>Neoscona melloteei</i>	22	2.5
		<i>Neoscona adianta</i>	6	0.7	
		<i>Cyclosa atrata</i>	1	0.1	
		<i>Hypsosinga pygmaea</i>	1	0.1	
		<i>Hypsosinga sanguinea</i>	1	0.1	
		<i>Neoscona theisi</i>	1	0.1	
		<i>Neoscona kunmingensis</i>	1	0.1	
	Thomisidae	<i>Xysticus ephippiatus</i>	95	10.7	
		<i>Ebrechtella tricuspidata</i>	3	0.3	
		<i>Monaeses aciculus</i>	3	0.3	
		<i>Xysticus croceus</i>	2	0.2	
		<i>Xysticus hedinii</i>	2	0.2	
		<i>Thomisus labefactus</i>	1	0.1	
		<i>Xysticus cristatus</i>	1	0.1	
		<i>Boliscus tuberculatus</i>	1	0.1	
		<i>Oxytate hoshizuna</i>	1	0.1	
		Clubionidae	<i>Clubiona deletrix</i>	33	3.7
	<i>Clubiona corrugata</i>		1	0.1	
	Tetragnathidae	<i>Tetragnatha squamata</i>	7	0.8	
		<i>Pachygnatha tenera</i>	2	0.2	
	Gnaphosidae	<i>Zelotes asiaticus</i>	5	0.6	
		<i>Zelotes tongdao</i>	2	0.2	

	Oxyopidae	<i>Oxyopes sertatus</i>	26	2.9
		<i>Oxyopes javanus</i>	2	0.2
	Lycosidae	<i>Pardosa sumatrana</i>	1	0.1
		<i>Pardosa laura</i>	1	0.1
	Linyphiidae	<i>Allomengea adornata</i>	1	0.1
	Miturgidae	<i>Prochora praticola</i>	1	0.1
	Titanoecidae	<i>Nurscia albofasciata</i>	1	0.1
	Agelenidae	<i>Agelena labyrinthica</i>	1	0.1
	Trachelidae	<i>Trachelas japonicus</i>	7	0.8
	Eutichuridae	<i>Cheiracanthium japonicum</i>	2	0.2
Total	15	50	885	

Table S2. Population dynamics of *E. vitis* and four dominant spider species in the canopies of tea. Values presented as mean \pm SD (N = 3).

Month	Field-collected number (juvenile and adult)				
	<i>E. vitis</i>	<i>E. albaria</i>	<i>X. ephippiatus</i>	<i>M. pulcherrima</i>	<i>C. octomaculatum</i>
Jan. 2013	204.7 \pm 23.7	3.0 \pm 1.0	0	0	3.3 \pm 3.1
Feb. 2013	184.3 \pm 30.7	5.0 \pm 1.0	0	2.7 \pm 0.6	1.3 \pm 2.3
Mar. 2013	243.0 \pm 53.5	9.3 \pm 2.5	3.3 \pm 1.2	2.3 \pm 0.6	16.0 \pm 4.8
Apr. 2013	370.0 \pm 113.5	11.7 \pm 6.4	4.0 \pm 1.0	1.3 \pm 1.5	9.3 \pm 5.5
May 2013	684.0 \pm 35.6	18.0 \pm 2.0	5.7 \pm 0.6	4.7 \pm 5.0	8.0 \pm 7.1
Jun. 2013	605.0 \pm 118.2	32.0 \pm 12.0	9.0 \pm 5.3	4.7 \pm 1.2	3.3 \pm 0.6
Jul. 2013	488.3 \pm 34.6	61.7 \pm 6.0	9.7 \pm 4.7	10.0 \pm 3.0	2.3 \pm 0.6
Aug. 2013	513.3 \pm 168.0	86.3 \pm 11.9	8.7 \pm 3.1	4.0 \pm 3.6	1.0 \pm 1.7
Sep. 2012	664.7 \pm 72.0	45.3 \pm 10.7	6.0 \pm 2.0	4.0 \pm 2.6	3.7 \pm 2.1
Oct. 2012	344.7 \pm 191.1	24.7 \pm 6.7	9.7 \pm 4.6	1.0 \pm 1.7	3.7 \pm 3.5
Nov. 2012	193.7 \pm 31.2	10.3 \pm 2.9	3.7 \pm 1.2	2.0 \pm 2.6	1.3 \pm 2.3
Dec. 2012	149.7 \pm 29.3	7.0 \pm 1.7	0	1.3 \pm 1.5	3.3 \pm 5.8

Table S3. Effect of background DNA of predators on detection of *E. vitis*. Values presented as mean \pm SD. CV stands for coefficients of variation. Exp1, the genomic DNA dissolved in ultra-pure water; Exp2, the genomic DNA dissolved in the genomic DNA mixture of four dominant spider species.

Dilution of genomic DNA of <i>E. vitis</i>	Exp 1		Exp 2		Inter-assay (between Exp1 and Exp2)	
	Ct	CV (%)	Ct	CV (%)	Ct	CV (%)
1/10	24.34 \pm 0.42	1.74	24.08 \pm 0.18	0.74	24.21 \pm 0.19	0.78
1/100	27.17 \pm 0.34	1.25	26.81 \pm 0.41	1.51	26.99 \pm 0.26	0.95
1/1000	29.75 \pm 0.46	1.55	29.68 \pm 0.14	0.46	29.71 \pm 0.05	0.17
1/10000	32.93 \pm 0.34	1.04	33.39 \pm 1.33	3.98	33.16 \pm 0.32	0.98

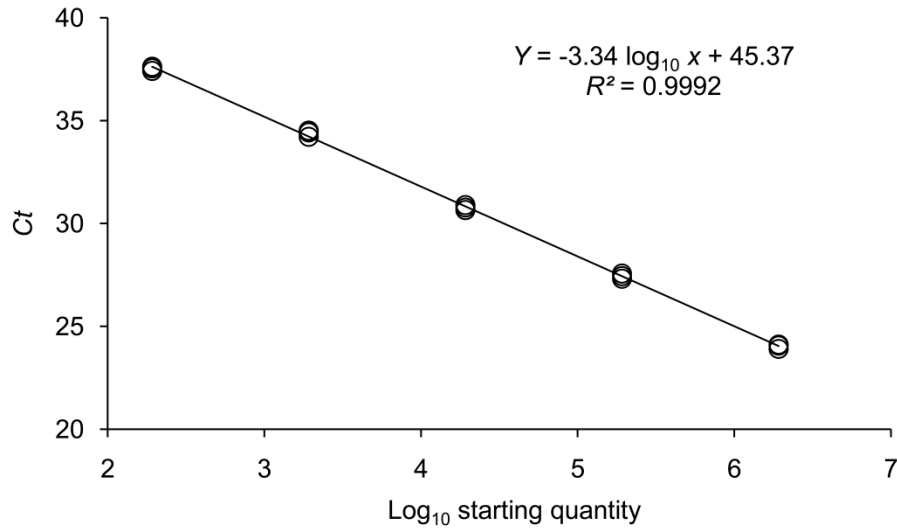


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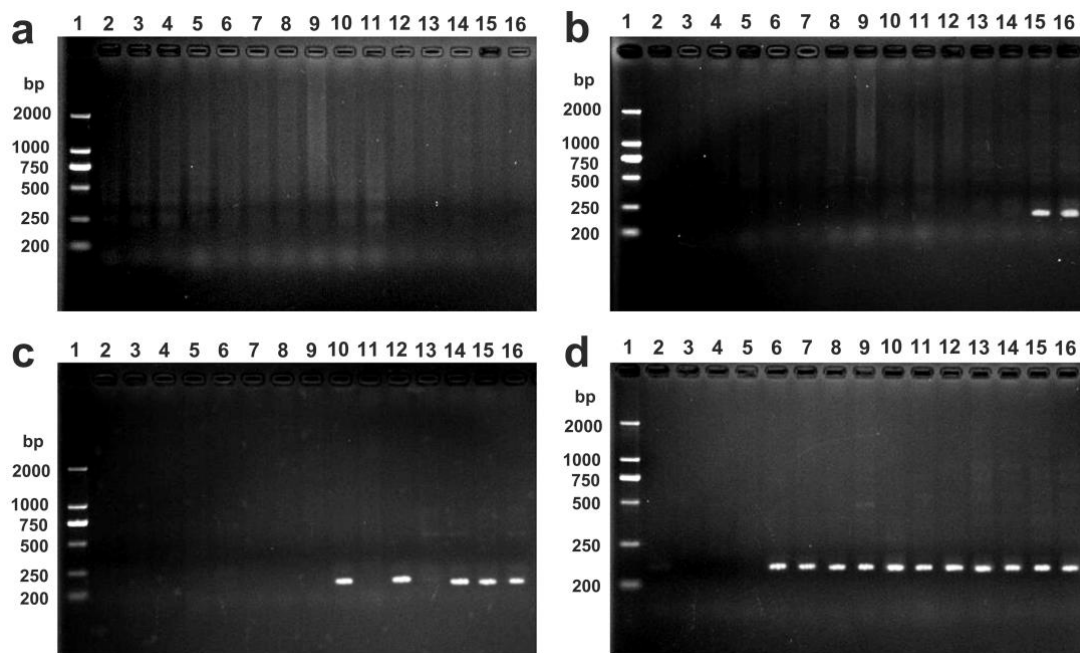


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