ELECTRONIC SUPPLEMENTARY INFORMATION (ESI)

Developing microwave-assisted ionic liquid microextraction for the detection and tracking of hydrophobic pesticides in complex environmental matrices

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Table S1 Pyrethroid retention times observed under our HPLC experimental conditions[a]

Pyrethroid	Retention time (min)		
	Peak 1	Peak 2	Peak 3
ALLE	11		
CYPE	24	9.2[b]	6.4[b]
PERM	27	31	

[a] The mobile phase consisted of a 70:30 (v/v) mixture of acetonitrile:water. [b] These peaks are thought to arise from CYPE degradation products.

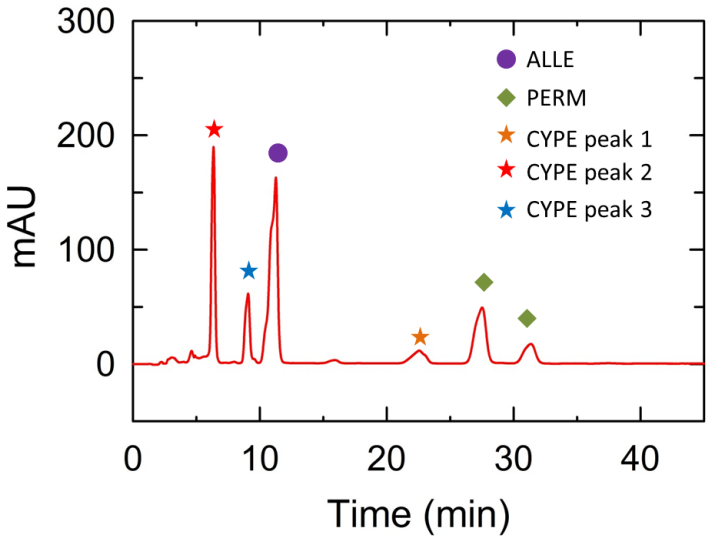

Fig. S1 HPLC chromatogram of pyrethroids (each present at a concentration of 25 mg/L) using acetonitrile-water (70:30, v/v) as the mobile phase at a flow rate of 1 mL/min and a column temperature of 25 °C. CYPE peaks 2 and 3 are believed to originate from degradation of the parent CYPE which in turn elutes as CYPE peak 1.

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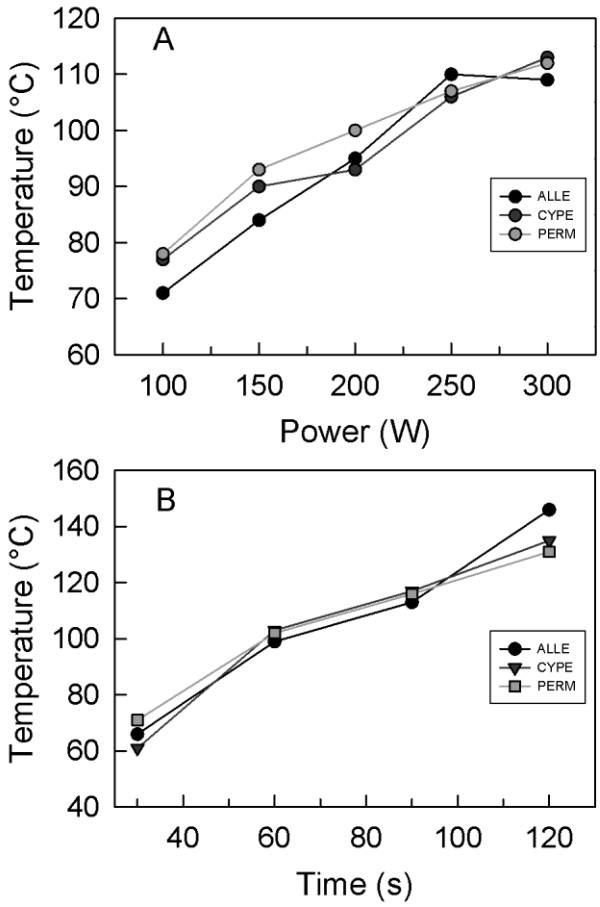

Fig. S2 (A) Solution temperature following 60 s of microwave irradiation at various powers. (B) Solution temperatures resulting from microwave heating @200 W for different durations. For both panels, the pyrethroid concentrations were 25 mg/L and the IL used was $[N_{8881}][Tf_2N]$.

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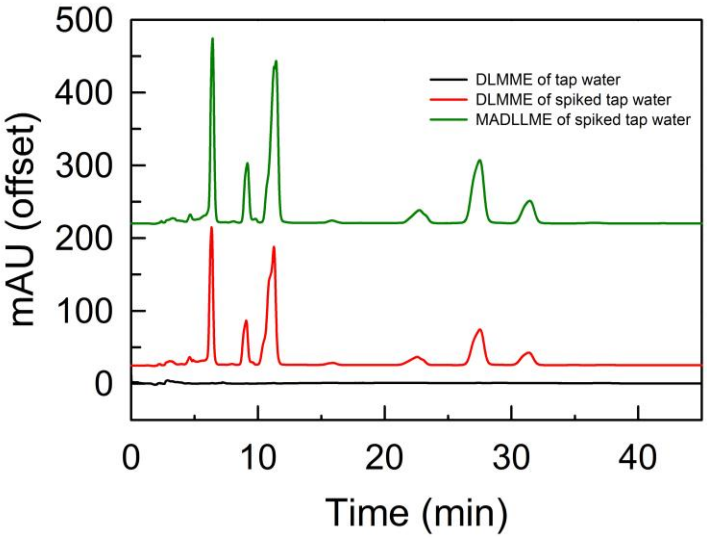

Fig. S3 Typical chromatograms after DLLME of prepared **tap water** (black profile), DLLME of tap water spiked with pyrethroids (red), and MADLLME of tap water spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L and the IL tested here was $[N_{8881}][Tf_2N]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

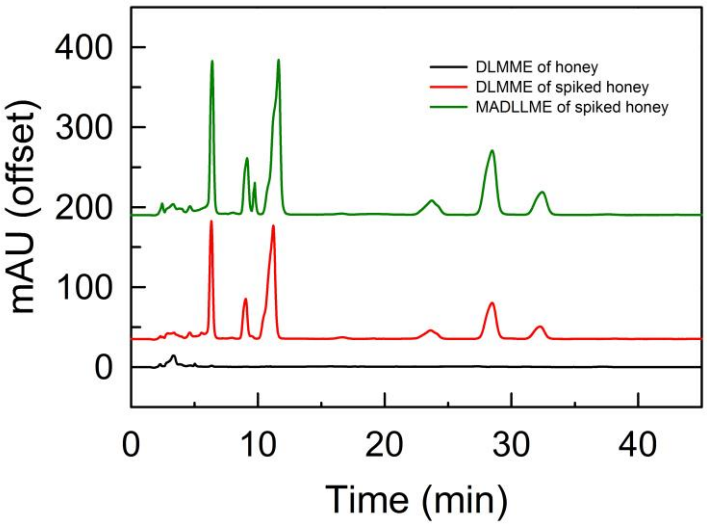

Fig. S4 Typical chromatograms after DLLME of prepared **honey** (black curve), DLLME of honey spiked with pyrethroids (red), and MADLLME of honey spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was $[N_{8881}][Tf_2N]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

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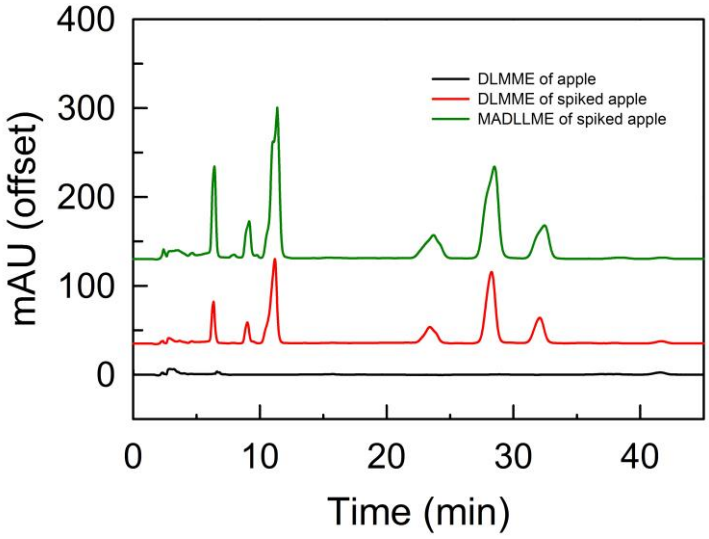

Fig. S5 Typical chromatograms after DLLME of prepared **apple** (black curve), DLLME of apple spiked with pyrethroids (red line), and MADLLME of apple spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was $[N_{8881}][Tf_2N]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

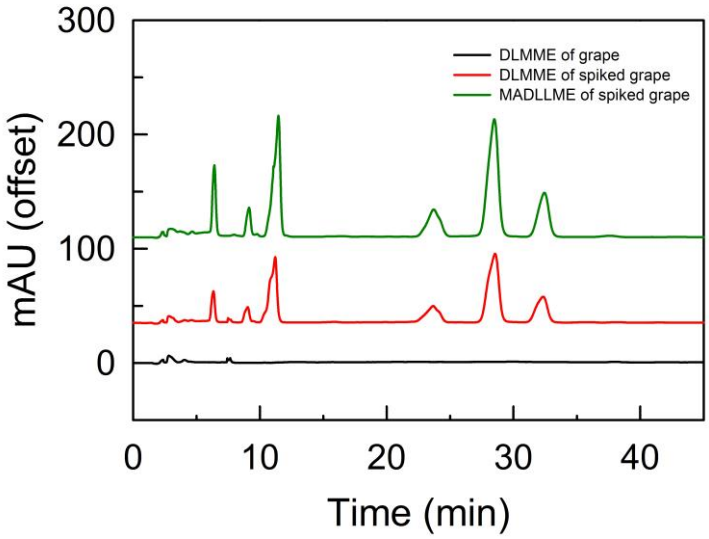

Fig. S6 Typical chromatograms after DLLME of prepared **grape** (black profile), DLLME of grape spiked with pyrethroids (red line), and MADLLME of grape spiked with pyrethroids (green). The pyrethroid concentrations used were 25 mg/L each and the IL tested here was $[N_{8881}][Tf_2N]$. For MADLLME, the microwave conditions followed were 200 W of power for a duration of 60 s.

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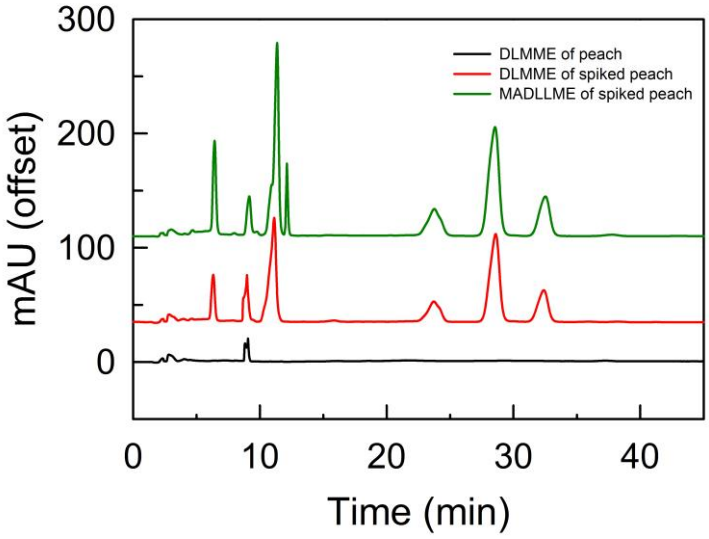

Fig. S7 Typical chromatograms following DLLME of prepared **peach** (black line), DLLME of peach spiked with pyrethroids (red line), and MADLLME of peach spiked with pyrethroids (green profile). The pyrethroid concentrations were 25 mg/L and the IL employed was $[N_{8881}][Tf_2N]$. For MADLLME, the microwave power was 200 W for a microwave time 60 s.