Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

Microwave-assisted nucleophilic degradation of organophosphate pesticides in Propylene Carbonate

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Table S1: Pseudo-first-order rate constants *(k_{obsd})* and second-order rate constant (K_2) for the degradation of pesticides **1**-**5** in PC at room temperature.

	$10^3 K_{OBS}/min^{-1}$		$10^3 K_2/M^{-1}min^{-1}$	
	Bmim[Ala]	Piperidine	Bmim[Ala]	Piperidine
Malathion (1)	65.1±4.00	70±4	162.7±10	175±10
Fenitrothion (2)	1.60±0.04	30±1	4.0±0.20	75±2.5
Paraoxon (3)	0.58±0.05	--	1.5±0.08	
Diazinon (4)	--	--		
Parathion (5)	--	--		

--- not reaction observed. Values are mean and standard deviation (±S.D.) of three independent experiments

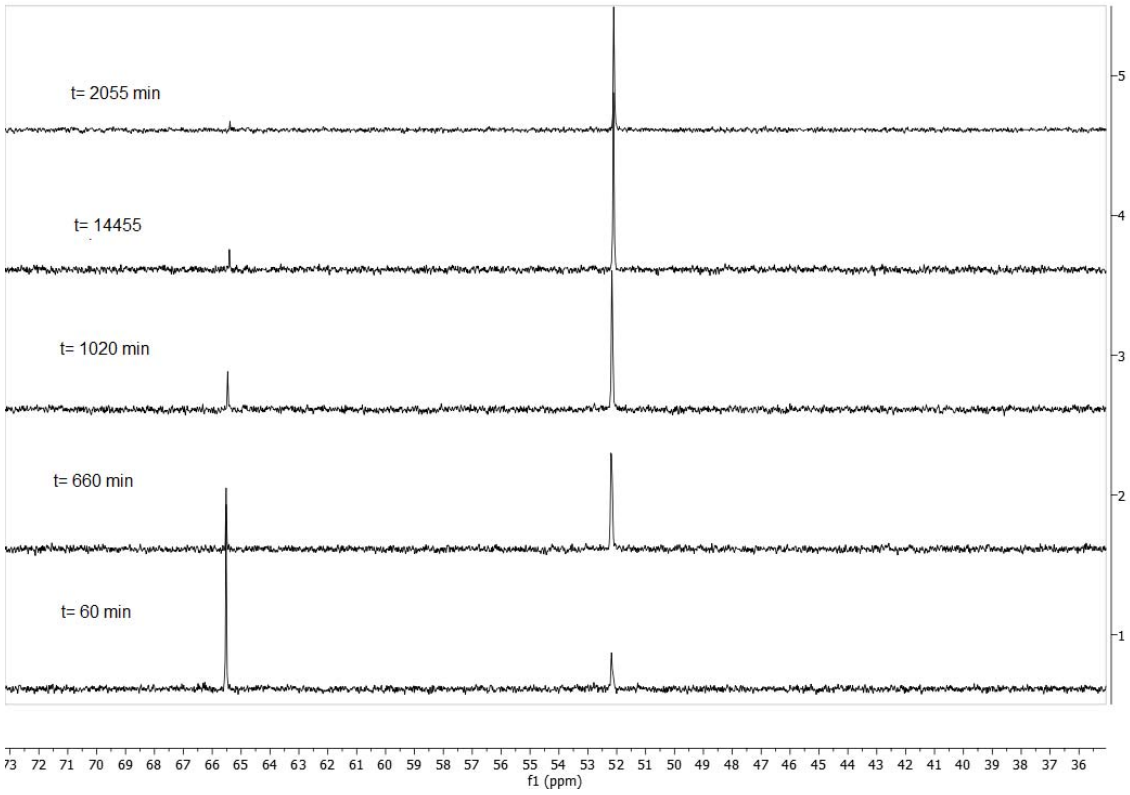


Figure S1: Stacked ^{31}P-NMR plot for the reaction of fenitrotion with Bmim[Ala] in propylene carbonate at 25°C.

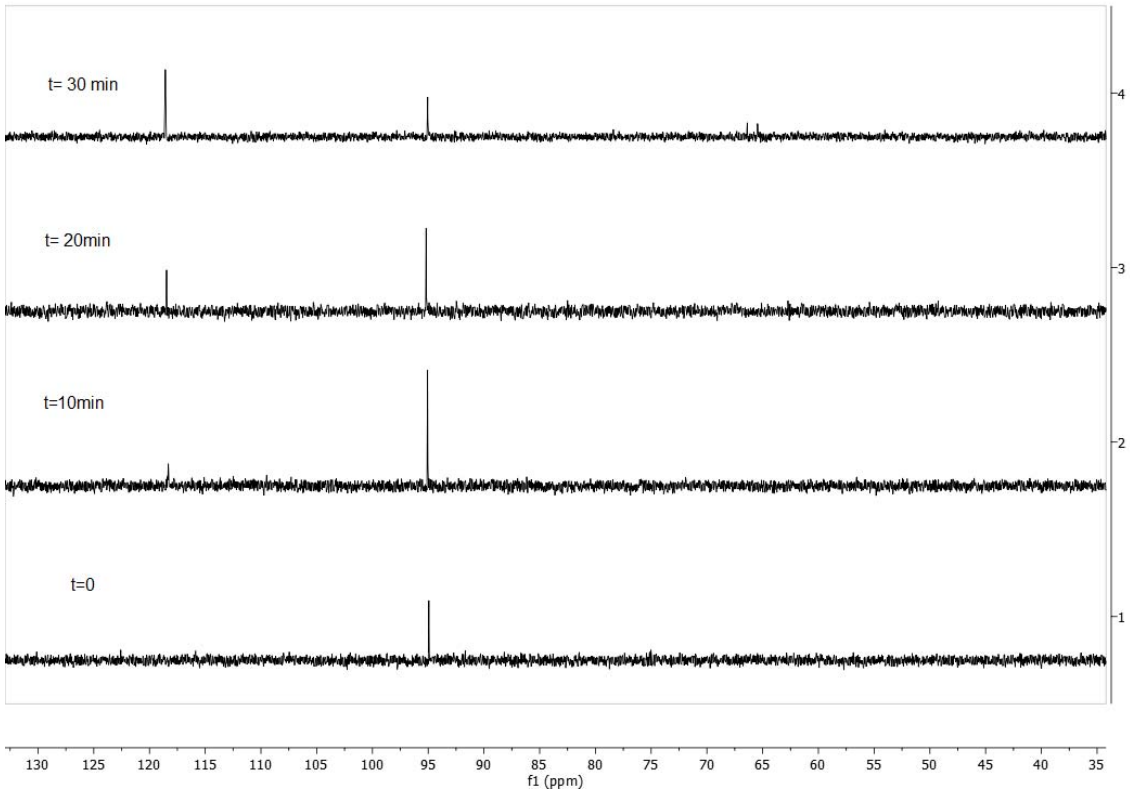


Figure S2: Stacked ^{31}P-NMR plot for the reaction of malathion with Bmim[Ala] in propylene carbonate at 25°C.

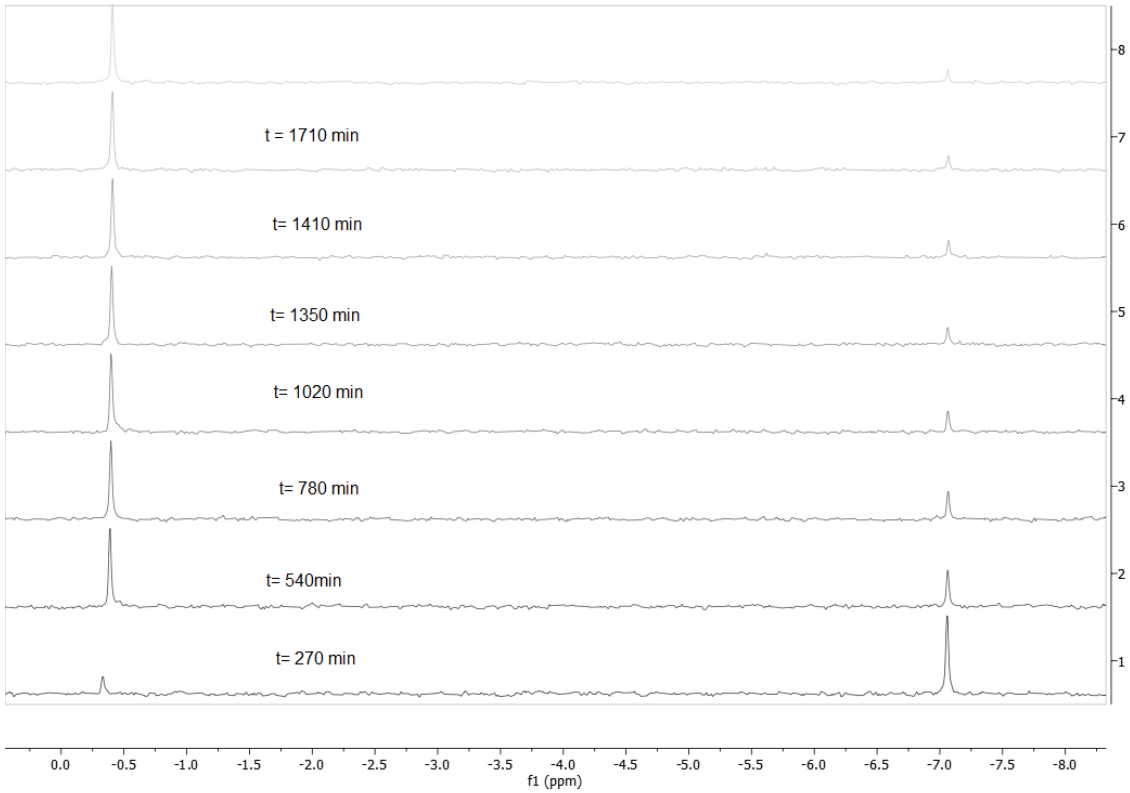


Figure S3: Stacked ^{31}P-NMR plot for the reaction of paraoxon with Bmim[Ala] in propylene carbonate at 25°C.

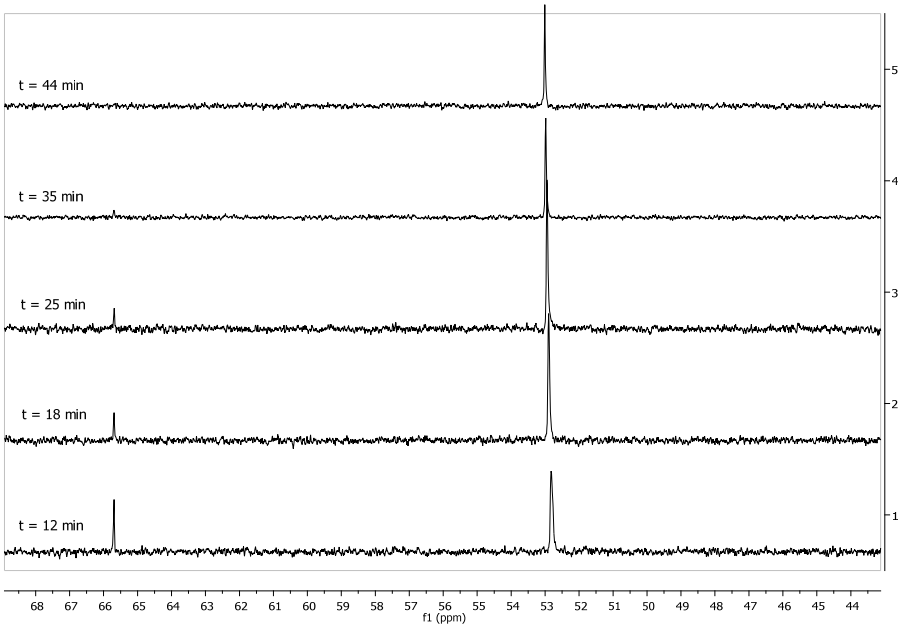


Figure S4: Stacked ^{31}P-NMR plot for the reaction of fenitrotion with piperidine in propylene carbonate at 25°C.

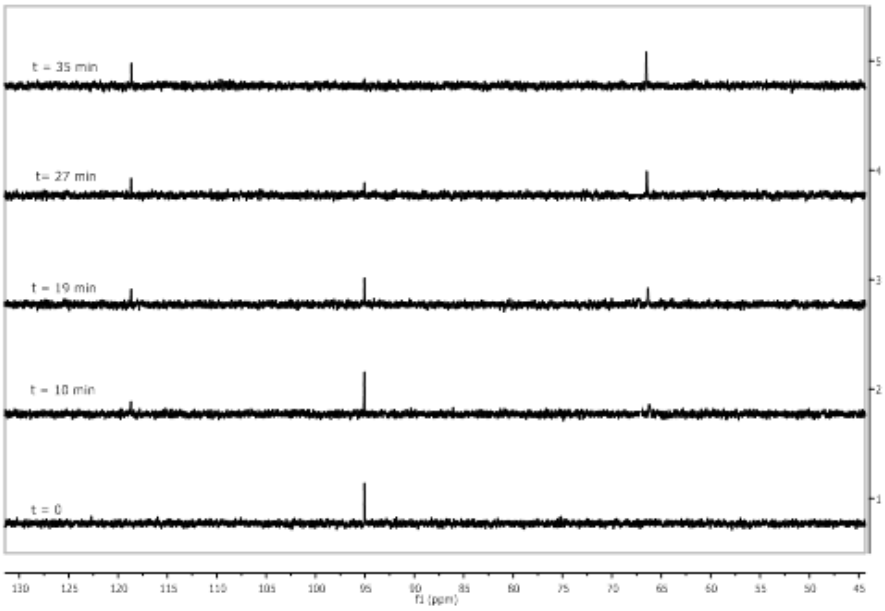


Figure S5: Stacked ^{31}P-NMR plot for the reaction of malathion with piperidine in propylene carbonate at 25°C.

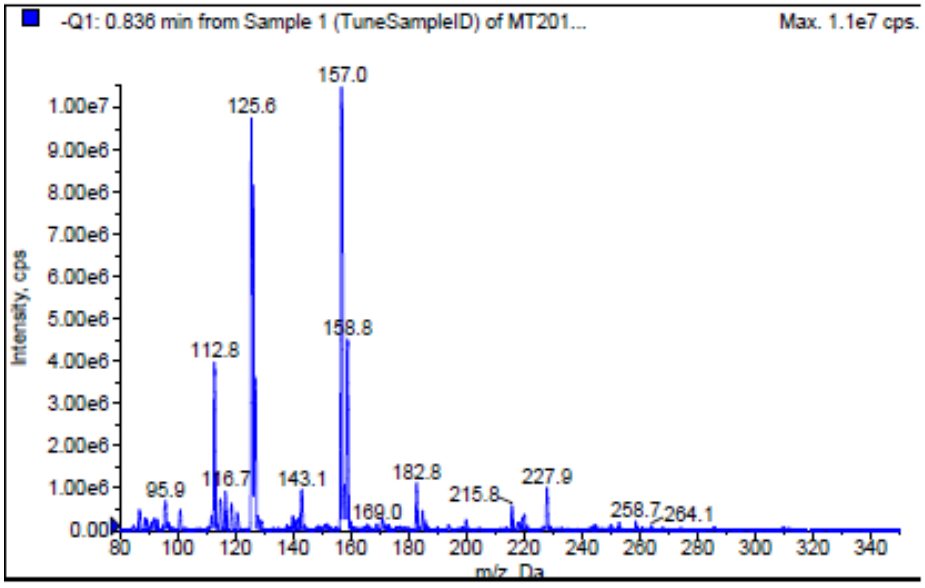
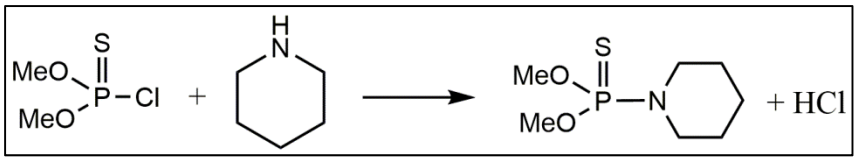


Figure S6: ESI-MS/MS(−) of the compound **6** of *m/z* 157, from a reaction of malathion with piperidine in PC.



Scheme S1: Reaction route to identify product **8**

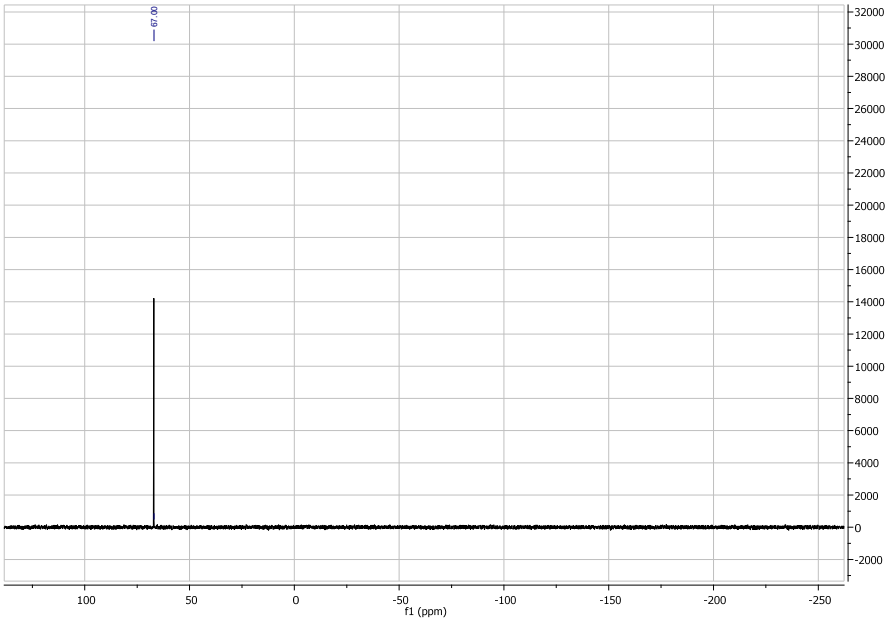


Figure S7: ^{31}P-NMR plot for product **8** obtained from the reaction of *O*,*O*-dimethyl chlorothiophosphate with piperidine in PC at 25°C.

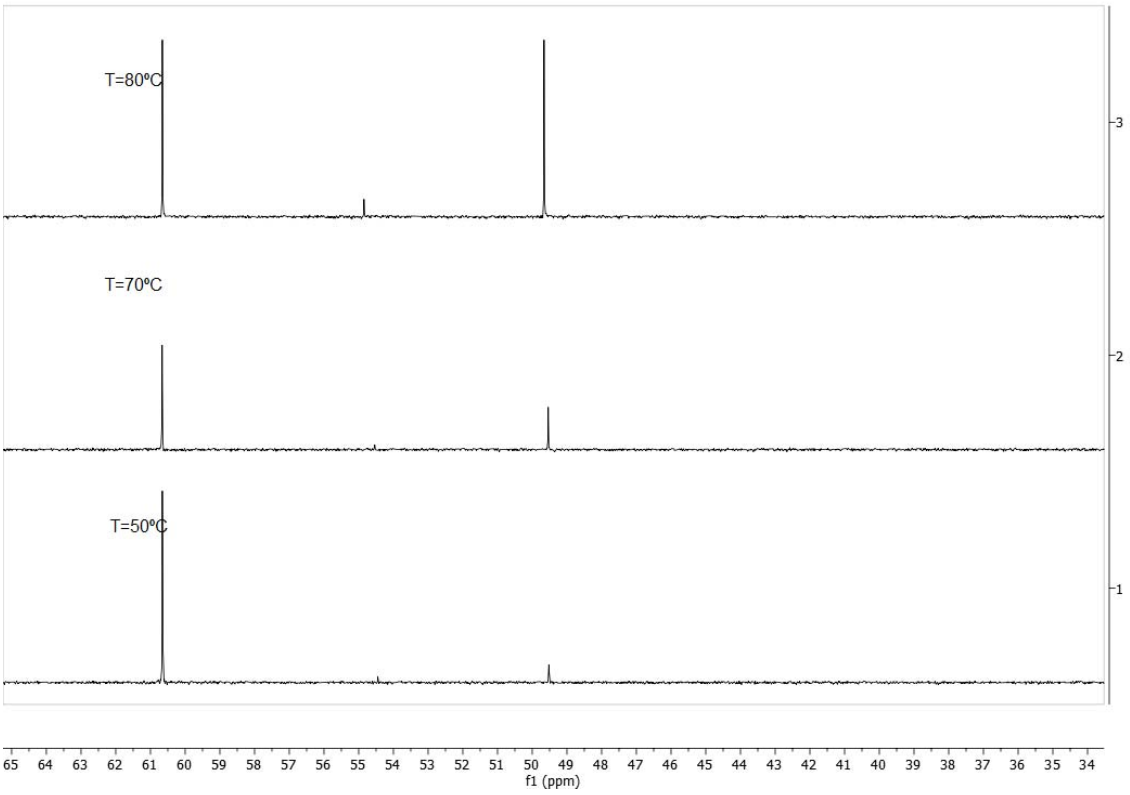


Figure S8: Stacked ^{31}P-NMR plot for the reaction of diazinon with Bmim[Ala] in propylene carbonate at different temperatures under MW heating

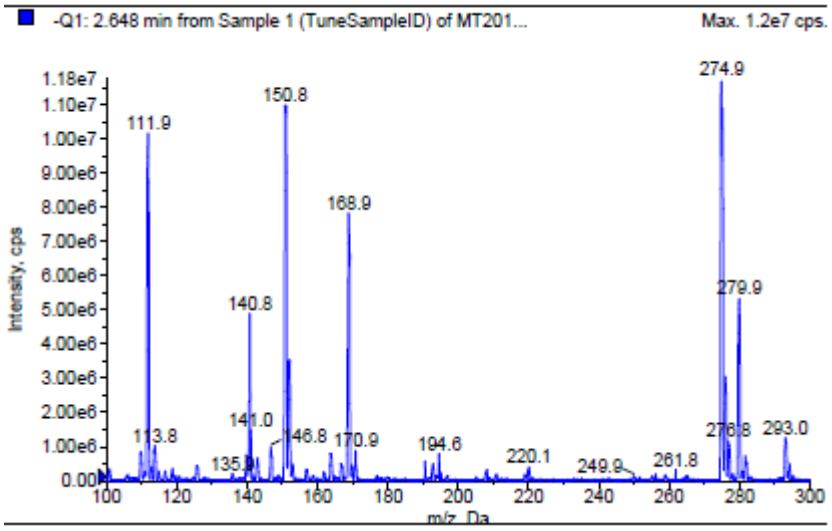


Figure S9: ESI-MS/MS(−) of the compound **4a** of *m/z* 168.9, from a reaction of **4** with piperidine in PC.

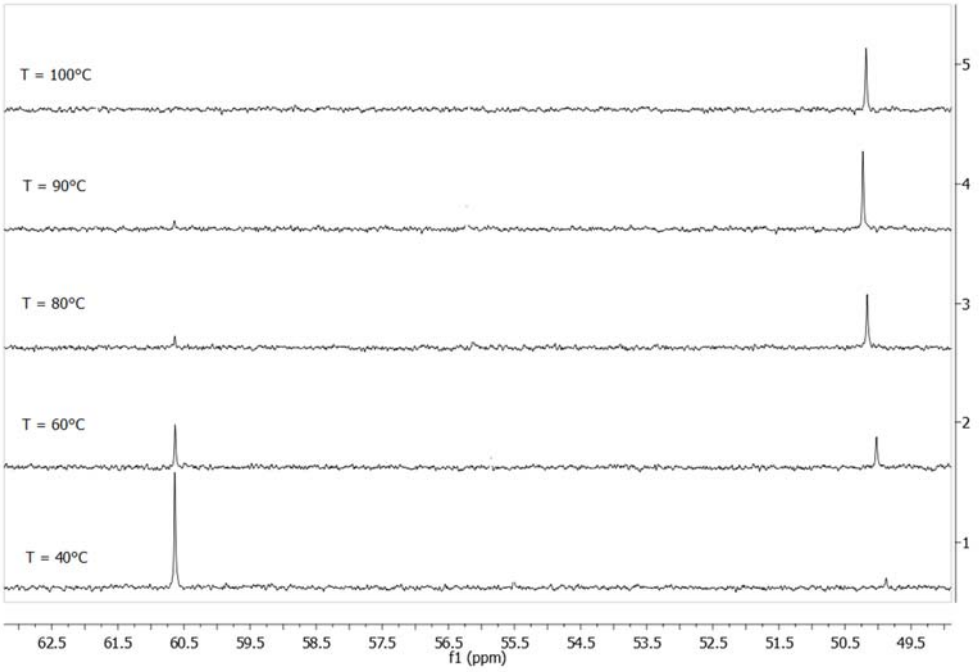


Figure S10: Stacked ^{31}P-NMR plot for the reaction of diazinon with piperidine in propylene carbonate at different temperatures under MW heating.

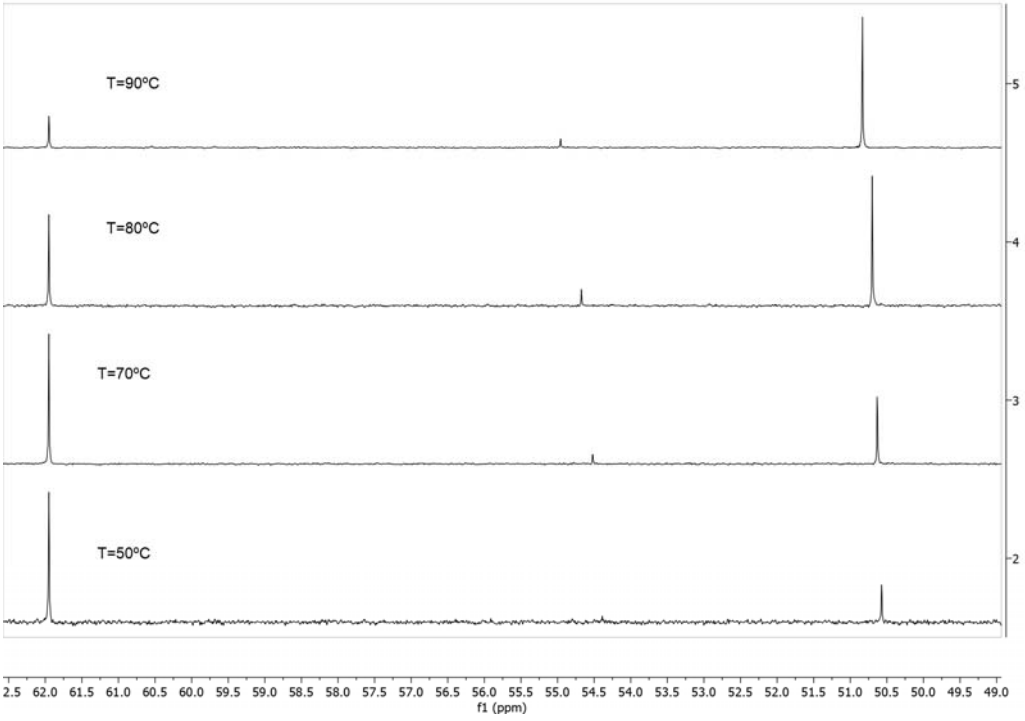


Figure S11: Stacked ^{31}P-NMR plot for the reaction of parathion with Bmim[ALA] in propylene carbonate at different temperatures under MW heating

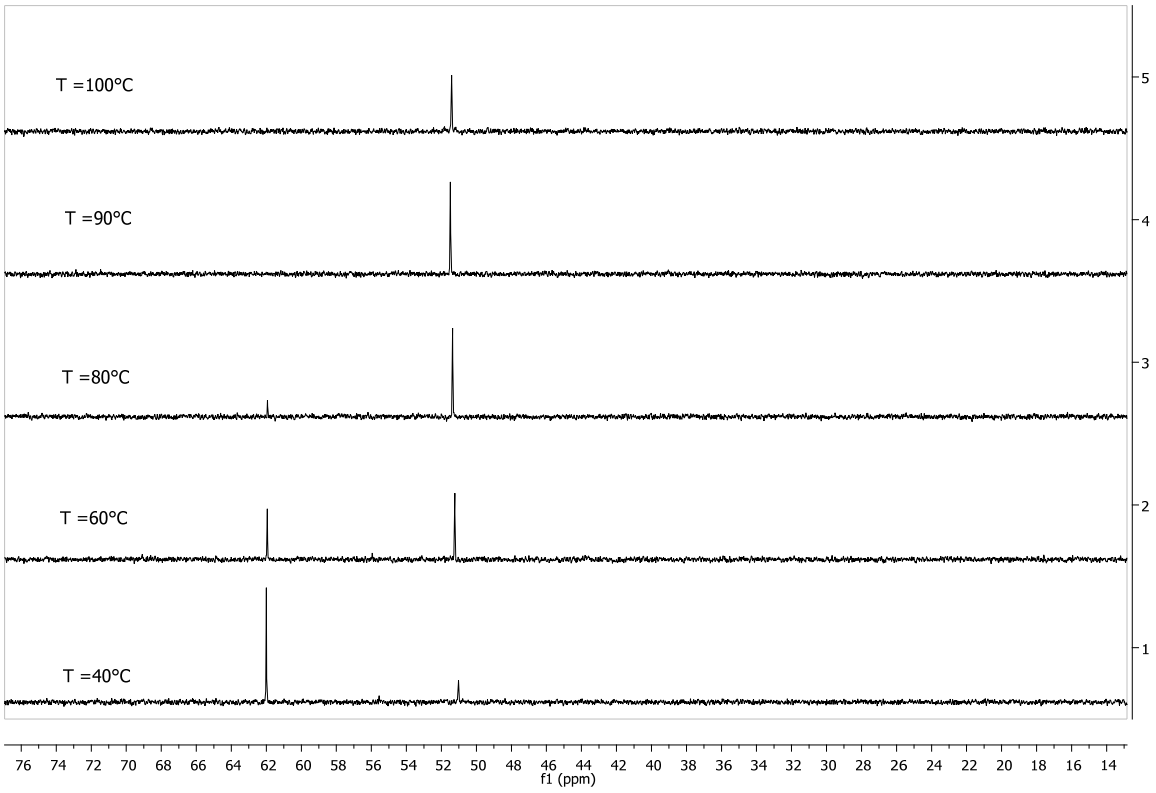


Figure S12: Stacked ^{31}P-NMR plot for the reaction of parathion with piperidine in propylene carbonate at different temperatures under MW heating.

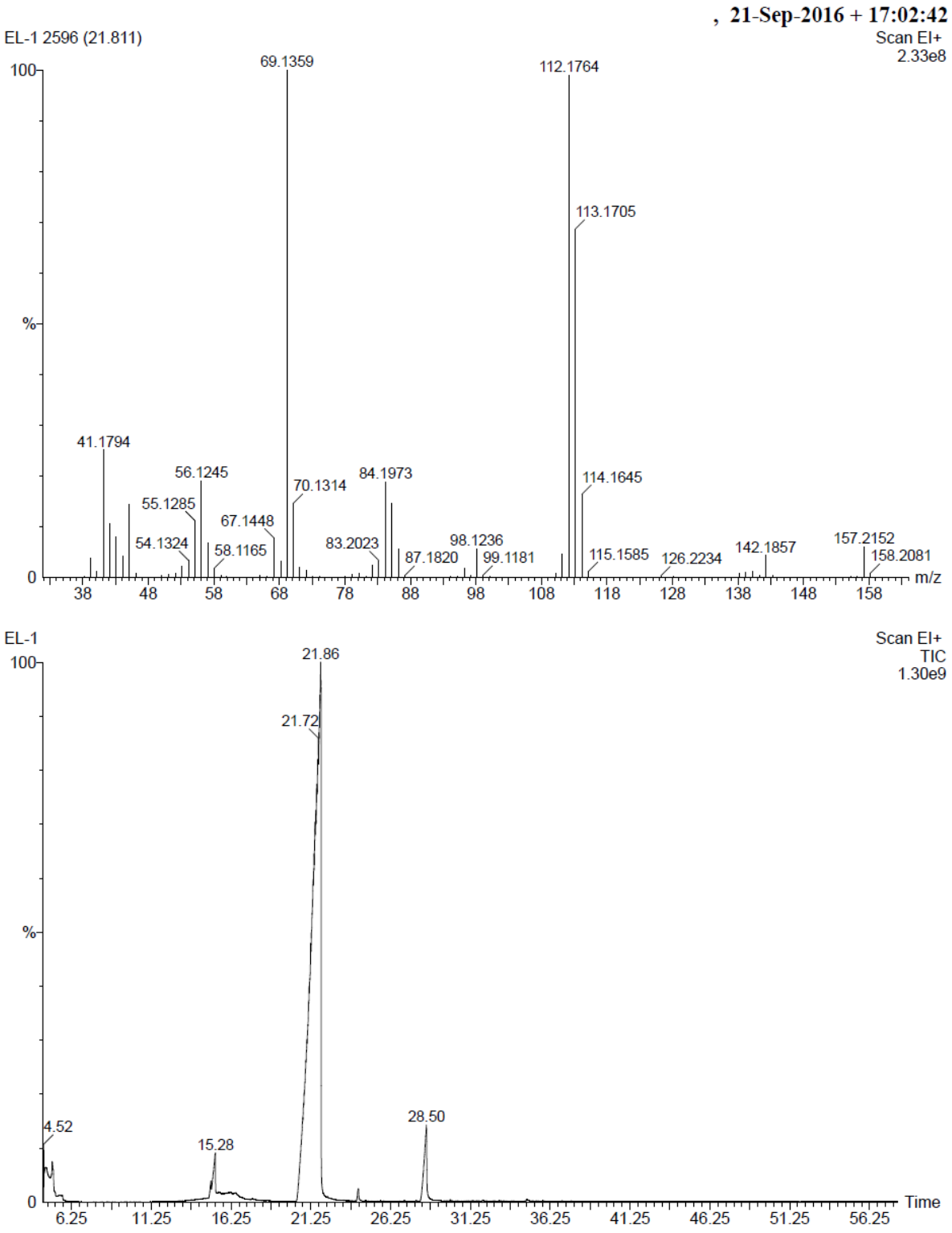


Figure S13: GC-MS chromatogramme and mass spectrum of compound **17**b from the reaction of parathion with piperidine in PC.

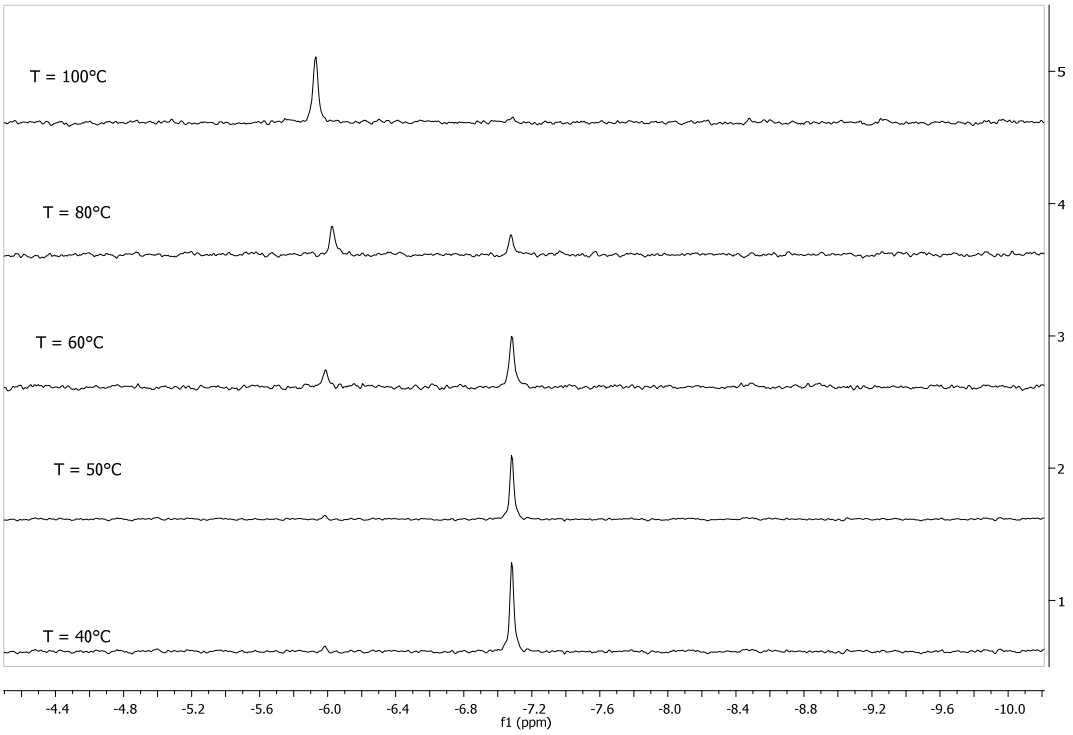


Figure S14: Stacked ^{31}P-NMR plot for the reaction of paraoxon with piperidine in propylene carbonate at different temperatures under MW heating

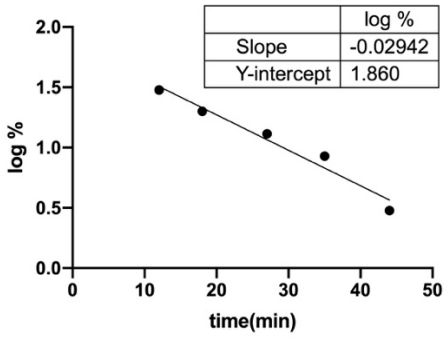


Figure 15: Plot log % vs time(min) to obtain observed first-order rate constant k_{obs} for the reaction of fenitrothion with piperidine at 25ºC.

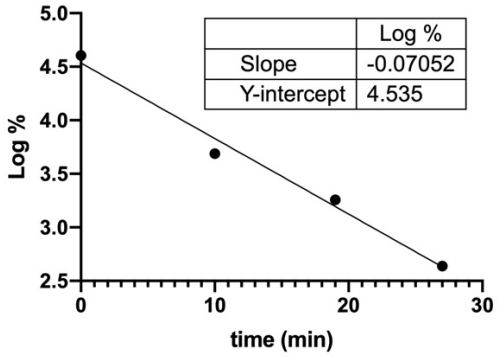


Figure 16: Plot log % vs time(min) to obtain observed first-order rate constant k_{obs} for the reaction of malathion with piperidine at 25ºC.