Electronic Supplementary Material (ESM)

Additional tables, describing method validation details, can be found in the electronic supplementary material online.

Table S1

	Cereals	Infant formula	Fruit and vegetables
Sample weight (g)	2	4	10
Water (ml)	10	0	0
Methanol (ml)	10	4	10
Acidified with 3% Acetic acid (ml)	No	0.4	No
Freeze at -80°C (min)	10	No	10
Centrifuge at 4000rpm (min)	8	8	8
SPE clean up	Yes	Yes	Filter only
Sample taken (µl)	100	100	100
Water added (µl)	900	900	400
Final dilution	1/100	1/20	1/10

Table S2 – Ion source parameters

Method duration	21 mins
Ion source type	HESI
Spray voltage	Static
Positive ion	3500 V
Negative ion	2500 V
Sheath gas (Arb)	60
Aux gas (Arb)	15
Sweep gas (Arb)	2
Ion transfer tube temp	380˚C
Vaporiser temp	350˚C

Table S3 – Optimised transitions for the analytes covered by the scope of the method.

Pesticide	Quan transition	T2	T3	T4
Aminomethylphosphonic acid (AMPA)	109.9 --> 62.8	109.9 --> 78.8	109.9 --> 80.8	
Chlorate	82.9 --> 66.8	82.9 --> 50.9	84.9 --> 68.8	
Cyanuric acid	128 --> 41.9	128 --> 84.9		
Dicamba	218.8 --> 174.9	218.8 --> 144.8	218.8 --> 34.9	
Ethephon	142.9 --> 106.9	142.9 --> 62.9	142.9 --> 78.9	
Fosetyl Aluminium	108.9 --> 80.9	108.9 --> 62.9	108.9 --> 78.8	
Glufosinate	179.9 --> 94.9	179.9 --> 136.0	179.9 --> 118.9	
Glyphosate	167.8 --> 80.8	167.8 --> 62.9	167.8 --> 149.9	167.8 --> 123.9
HEPA (ethephon metabolite)	124.8 --> 78.8	124.8 --> 94.9	124.8 --> 62.8	
Maleic Hydrazide	110.9 --> 81.9	110.9 --> 82.9	110.9 --> 54.9	110.9 --> 41.8
MPPA (Glufosinate metabolite)	150.9 --> 132.9	150.9 --> 106.9	150.9 --> 62.8	150.9 --> 77.9
N-Acetyl AMPA	152 --> 109.9	152 --> 62.8	152 --> 78.8	152 --> 133.9
N-Acetyl Glufosinate	221.9 --> 134.0	221.9 --> 136.0	221.9 --> 178	221.9 --> 58.9
N-Acetyl Glyphosate	209.9 --> 123.9	209.9 --> 147.9	209.9 --> 62.8	209.9 --> 78.8
Perchlorate	98.8 --> 82.8	98.8 --> 66.8	98.8 --> 50.9	
Phosphonic Acid	80.7 --> 78.7	80.7 --> 62.8		

Table S4 – The % difference between the standard concentration and the back calculated standard concentrations

	Wheat	Infant Formula	Fruit and Vegetables
AMPA	7.8	0.2	2.3
Chlorate	-1.7	1.3	0.8
Cyanuric Acid	1.3	-0.2	0.1
Dicamba	-0.2	3.3	-1.3
Ethephon	-11.2	-0.5	1.6
Fosetyl	2.4	3.5	-1.4
Glufosinate	-1.3	0.9	4.7
Glyphosate	2.9	1.2	1.9
HEPA	0.4	1.0	-7.8
Maleic Hydrazide	0.0	4.8	-3.9
MPPA	-0.3	0.4	-2.6
N-acetyl AMPA	0.2	1.7	-6.4
N-acetyl glufosinate	0.1	0.7	-4.1
N-acetyl Glyphosate	1.8	2.4	-3.0
Perchlorate	-0.2	0.3	-0.3
Phosphonic Acid	-2.8	0.3	9.6

Table S5a – repeatability for wheat and infant formula

Wheat	Accuracy																
	10		50		100		200		500		1000		2500				
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean	s	% CV
Chlorate	79.0	76.3	89.6	74.6	98.3	96.9	86.1	87.1	89.5	81.9	93.5	93.5	108.7	104.4	90.0	##	11.3
Dicamba	77.4	88.6	70.1	65.2	120.6	96.0	69.8	77.4	130.5	82.8	98.2	106.2	98.9	87.7	90.7	##	21.2
Ethephon	87.2	78.7	129.8	115.1	103.0	100.3	122.9	129.8	89.6	89.4	96.9	100.3	89.8	81.5	101.0	##	17.0
Fosetyl Aluminium	**34.8**	**32.0**	**38.9**	**32.2**	**48.6**	**50.3**	**1.6**	**35.3**	**76.5**	**55.1**	90.4	86.1	101.3	71.5	**53.9**	**##**	**51.7**
Glufosinate	**53.8**	**34.8**	**63.7**	**54.1**	71.4	68.6	63.4	101.5	121.2	106.0	69.6	129.8	106.4	144.8	**91.7**	**##**	**33.0**
Glyphosate	87.3	97.0	80.2	69.8	89.3	82.0	74.0	77.4	78.1	60.8	84.7	75.5	76.4	60.8	78.1	##	12.9
HEPA	107.8	92.5	85.7	83.0	100.6	127.7	87.4	92.7	111.2	91.1	103.5	102.0	100.2	103.1	99.2	##	11.9
Maleic Hydrazide	85.2	88.2	77.5	88.5	96.3	107.5	82.7	89.9	92.8	92.2	105.9	118.0	106.2	99.7	95.0	##	11.8
MPPA	106.3	98.0	81.6	74.1	110.7	110.0	81.0	87.9	109.4	90.8	100.5	103.3	100.5	102.4	96.9	##	12.2
N-Acetyl AMPA	93.8	76.3	86.4	85.5	115.0	113.3	86.5	98.4	129.6	93.1	97.0	107.0	92.4	107.9	98.7	##	14.5
N-acetyl glufosinate	119.5	79.5	66.3	85.9	123.3	122.5	84.6	91.5	114.2	99.3	122.7	107.4	102.8	112.6	102.3	##	17.9
N-acetyl Glyphosate	82.3	96.2	84.5	69.1	101.6	101.2	85.8	86.6	85.0	83.2	92.2	92.7	82.4	96.2	88.5	##	9.9
Perchlorate	49.3	50.7	58.1	43.9	88.8	87.2	47.7	52.5	80.5	78.9	90.1	82.0	98.7	93.7	71.6	##	27.9
Phosphonic acid	**22.2**	**12.8**	**20.6**	**13.2**	**17.1**	**16.2**	**-119.2**	**-66.1**	**-3.3**	**-17.1**	**29.2**	**42.5**	**61.7**	**76.9**	**7.6**	**##**	**653.2**

Wheat	Precision																
	10		50		100		200		500		1000		2500				
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean		
Chlorate	5.7	8.7	9.8	10.1	4.7	2.9	2.5	2.0	11.2	8.6	3.8	3.8	4.6	6.6	6.1		
Dicamba	24.5	21.4	12.3	10.0	11.4	9.3	8.2	4.3	7.7	13.7	8.3	10.2	16.7	14.4	12.3		
Ethephon	19.8	8.4	7.4	7.4	3.9	6.0	3.0	1.1	4.2	3.5	13.8	2.9	22.6	2.4	7.6		
Fosetyl Aluminium	3.8	4.8	9.7	8.5	4.6	3.3	104.2	6.8	14.0	9.2	9.4	6.1	10.1	3.7	14.2		
Glufosinate	36.2	32.7	6.4	6.6	9.0	14.0	11.7	5.3	5.8	13.4	5.6	5.2	21.6	5.0	9.1		
Glyphosate	12.8	18.1	9.4	15.8	8.9	3.7	5.7	4.1	13.9	10.0	2.3	2.7	5.6	8.1	8.6		
HEPA	17.6	10.2	10.8	7.5	4.5	4.4	2.9	3.0	9.3	8.5	5.3	2.3	10.0	4.9	7.2		
Maleic Hydrazide	33.1	18.1	20.3	11.3	12.8	12.7	12.4	11.3	10.5	5.7	9.6	8.4	10.7	9.6	13.3		
MPPA	9.0	6.8	10.7	6.3	3.1	4.4	6.4	2.4	5.6	3.0	2.4	1.3	1.2	4.4	4.8		
N-Acetyl AMPA	14.5	7.0	9.8	9.0	5.4	4.6	2.1	2.8	11.9	10.5	3.3	1.8	4.4	6.2	6.7		
N-acetyl glufosinate	11.8	18.4	6.0	8.0	7.3	8.2	3.8	2.8	8.1	8.3	15.6	2.3	21.4	5.3	9.1		
N-acetyl Glyphosate	18.1	10.7	10.5	14.4	7.1	2.8	3.3	3.2	15.0	14.0	2.8	1.3	2.0	5.9	7.9		
Perchlorate	6.4	5.2	7.0	9.1	3.4	2.4	5.3	4.8	11.5	9.8	2.7	1.0	1.5	5.8	5.4		
Phosphonic acid	18.4	10.4	8.6	17.2	7.0	2.1	-2.9	-7.4	-324.0	-58.8	11.7	7.5	5.1	8.7	-21.2		

Infanf Formula	Accuracy															
	10		20		40		100		200		500					
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean	s	% CV	
Chlorate	86.3	93.5	129.2	84.2	93.5	94.1	89.9	93.9	95.5	122.2	124.5	130.6	103.1	##	17.3	
Dicamba	83.4	76.4	126.2	82.1	88.5	86.9	87.4	89.8	85.2	84.8	82.8	82.4	88.0	##	14.3	
Ethephon	90.2	80.4	115.3	99.3	92.0	94.3	89.9	94.9	94.8	99.8	94.0	101.7	95.5	8.3	8.7	
Fosetyl Aluminium	103.3	110.7	99.2	118.7	94.9	96.7	92.8	95.5	92.5	95.9	100.0	100.1	100.0	7.7	7.7	
Glufosinate	47.2	34.0	82.5	68.7	78.5	64.7	85.6	87.8	93.1	101.2	100.9	103.9	86.7	##	15.6	
Glyphosate	102.4	102.4	115.9	84.1	90.4	85.2	88.1	85.3	84.6	95.0	90.7	97.7	93.5	9.7	10.4	
HEPA	108.3	93.5	134.9	101.0	108.7	110.3	102.5	104.6	101.2	114.8	110.3	116.5	108.9	##	9.6	
Maleic Hydrazide	123.6	98.9	115.7	94.0	94.4	94.1	92.0	101.2	115.8	111.8	113.7	116.9	106.0	##	10.6	
MPPA	88.4	87.4	128.6	94.7	95.7	96.5	90.9	93.1	93.1	105.5	95.4	104.9	97.8	##	11.4	
N-Acetyl AMPA	97.1	86.1	140.0	96.2	103.5	104.7	99.1	101.4	95.1	107.1	104.1	109.1	103.6	##	12.6	
N-acetyl glufosinate	95.4	88.1	128.7	92.1	98.8	96.7	93.6	94.6	92.1	99.3	93.3	98.2	97.6	##	10.6	
N-acetyl Glyphosate	83.0	84.5	122.9	86.3	93.8	90.3	88.3	89.2	83.3	95.5	90.2	96.3	92.0	##	11.6	
Perchlorate	78.2	71.5	100.5	73.2	81.3	81.6	77.5	79.1	78.1	93.1	90.3	98.1	83.5	9.6	11.5	
Phosphonic acid	86.7	74.2	114.2	74.8	21.6	40.1	60.4	70.6	91.5	76.5	97.0	92.3	83.8	##	23.6	

Infanf Formula	Precision															
	10		20		40		100		200		500					
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean			
Chlorate	4.3	5.1	14.3	2.0	3.5	1.6	4.0	2.4	6.5	1.7	3.0	1.8	4.2			
Dicamba	8.2	14.6	16.5	14.7	8.8	7.9	7.5	5.6	3.4	2.0	4.2	2.0	7.9			
Ethephon	3.8	9.0	4.8	3.4	3.3	2.1	4.2	2.7	3.5	1.8	2.2	1.1	3.5			
Fosetyl Aluminium	3.1	6.2	2.0	6.1	5.2	1.5	3.5	2.2	3.8	3.0	2.4	3.1	3.5			
Glufosinate	11.7	15.4	24.0	10.7	13.5	6.5	7.2	6.1	8.9	4.9	3.8	3.9	8.9			
Glyphosate	8.8	12.0	10.1	6.0	7.4	3.8	6.6	2.8	3.0	2.1	1.5	1.4	5.4			
HEPA	5.8	4.8	12.2	2.4	4.9	2.5	4.0	3.8	1.6	2.8	1.4	0.9	3.9			
Maleic Hydrazide	21.7	44.6	13.9	17.9	7.1	19.2	8.4	4.6	8.7	9.1	6.7	2.7	13.7			
MPPA	3.8	4.2	8.5	3.7	4.8	2.1	3.7	2.0	2.3	1.8	1.6	0.5	3.3			
N-Acetyl AMPA	2.6	5.1	10.7	5.0	4.0	3.3	2.0	2.7	3.4	2.1	2.4	1.0	3.7			
N-acetyl glufosinate	8.6	6.2	9.1	8.3	5.1	3.6	4.7	2.2	1.8	2.1	1.3	1.0	4.5			
N-acetyl Glyphosate	5.7	6.4	11.0	3.9	3.7	1.5	3.6	3.7	3.4	1.5	2.2	1.1	4.0			
Perchlorate	2.7	2.7	8.2	2.7	4.0	0.7	3.8	1.9	4.5	2.2	3.6	1.0	3.2			
Phosphonic acid	7.6	1.4	7.6	3.1	39.5	10.9	12.0	4.4	6.1	2.5	6.4	1.4	8.6			

39 Table 5b – Repeatability for fruit and vegetables

Carrot	Accuracy												
	10		20		50		100		250				
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean	s	% CV
AMPA	76.1	76.0	79.4	75.4	77.1	85.2	74.4	73.9	76.9	77.9	77.3	3.2	4.2
Chlorate	98.4	99.8	92.5	98.9	108.0	109.7	101.3	102.6	111.1	111.4	103.4	6.4	6.2
Cyanuric Acid	0.0	0.0	165.4	162.1	122.5	119.8	114.6	108.6	117.6	119.6	117.1	4.9	4.2
Dicamba	0.0	0.0	80.2	71.2	85.0	103.1	84.9	81.8	85.4	89.4	85.1	9.0	10.6
Ethephon	134.4	134.7	111.6	114.9	120.8	130.3	104.2	104.5	99.4	104.5	115.9	13.4	11.6
Fosetyl Aluminium	110.9	111.3	82.2	88.8	94.6	97.2	91.6	91.2	91.1	92.3	95.1	9.3	9.8
Glufosinate	84.8	79.0	75.4	78.4	87.7	94.4	73.0	75.4	84.5	84.7	81.7	6.6	8.1
Glyphosate	86.5	88.1	87.4	92.4	102.7	104.4	87.9	88.6	94.7	93.2	92.6	6.4	6.9
HEPA	122.4	114.8	121.3	113.5	100.6	99.5	99.7	99.5	98.6	97.8	106.8	10.0	9.4
Maleic Hydrazide	103.9	106.7	104.1	108.8	98.7	89.8	93.1	93.4	100.1	98.2	99.7	6.3	6.3
MPPA	78.6	82.5	68.5	70.3	74.6	79.1	81.9	83.4	86.4	87.5	79.3	6.4	8.1
N-Acetyl AMPA	99.0	103.6	87.2	90.0	98.5	102.7	94.9	96.0	95.7	96.7	96.4	5.1	5.2
N-acetyl glufosinate	73.0	76.7	66.4	66.9	89.5	91.8	82.9	85.2	81.4	81.0	79.5	8.7	11.0
N-acetyl Glyphosate	94.4	97.0	94.1	98.4	110.8	113.7	98.4	100.0	105.3	104.9	101.7	6.7	6.6
Perchlorate	105.3	106.3	99.9	106.0	110.4	111.7	101.5	104.8	107.6	107.4	106.1	3.6	3.4
Phosphonic acid	85.1	86.8	0.0	0.0	41.5	46.7	73.7	73.4	73.8	76.8	78.3	6.1	7.8

Carrot	Precision										
	10.0		20.0		50.0		100.0		250.0		
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean
AMPA	11.7	11.2	5.9	9.2	7.4	5.8	5.1	4.2	3.1	2.4	6.6
Chlorate	4.5	2.6	1.6	2.3	2.0	2.5	3.8	5.1	3.9	3.2	3.1
Cyanuric Acid	NA	NA	6.5	5.9	4.8	7.4	2.8	6.0	4.0	1.6	4.4
Dicamba	NA	NA	21.5	16.7	11.6	8.8	12.8	9.8	6.0	6.2	11.7
Ethephon	11.6	11.4	7.0	8.2	4.6	2.0	6.5	9.3	3.7	1.4	6.6
Fosetyl Aluminium	2.1	2.7	2.1	2.0	1.2	1.7	3.2	4.3	2.4	2.5	2.4
Glufosinate	12.7	4.6	8.9	6.9	5.4	1.6	5.8	9.0	2.8	3.8	6.1
Glyphosate	4.2	2.8	2.7	2.7	2.5	2.1	5.4	4.2	1.8	2.1	3.0
HEPA	3.1	3.2	4.2	5.9	4.5	7.4	4.2	4.4	2.0	3.0	4.2
Maleic Hydrazide	8.5	18.3	25.5	15.1	12.7	11.2	9.3	7.8	4.7	6.9	12.0
MPPA	3.3	1.8	2.2	2.6	1.3	3.9	3.2	3.0	2.4	1.6	2.5
N-Acetyl AMPA	3.6	1.9	4.0	2.8	2.8	1.7	4.4	4.3	3.3	2.8	3.2
N-acetyl glufosinate	4.4	4.2	2.9	1.5	3.3	3.7	3.0	2.7	2.3	2.5	3.0
N-acetyl Glyphosate	3.7	3.2	1.7	1.7	1.8	1.5	3.4	4.8	2.9	3.5	2.8
Perchlorate	1.6	2.0	2.0	1.5	1.2	2.6	4.5	4.8	3.9	4.0	2.8
Phosphonic acid	2.6	2.4	#DIV/0!	#DIV/0!	6.6	7.5	4.4	4.2	2.5	3.8	4.2

Orange	Accuracy												
	10		20		50		100		250				
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean	s	% CV
AMPA	96.2	95.3	90.9	85.0	83.0	88.6	87.0	90.4	83.4	84.1	88.4	4.8	5.4
Chlorate	102.9	94.8	99.4	99.7	93.6	91.3	92.5	98.3	97.3	92.6	96.2	3.8	4.0
Cyanuric Acid	98.6	100.2	101.5	96.0	85.7	87.0	84.9	81.5	82.1	83.6	84.1	2.1	2.5
Dicamba	127.7	120.1	97.4	109.7	115.3	97.8	103.0	98.4	101.0	99.5	102.8	6.5	6.3
Ethephon	103.5	104.6	104.7	117.2	115.5	109.6	96.8	96.7	96.3	98.8	104.4	7.6	7.3
Fosetyl Aluminium	100.6	94.4	98.4	95.4	92.2	93.7	93.2	95.9	92.0	91.7	94.8	2.9	3.1
Glufosinate	95.9	81.6	91.5	90.6	91.7	86.3	83.0	81.5	86.7	84.4	87.3	4.9	5.6
Glyphosate	76.7	68.9	73.2	82.1	75.0	69.4	65.7	67.3	67.2	71.2	71.7	5.1	7.1
HEPA	105.1	90.7	94.3	97.7	99.4	104.2	88.8	92.6	71.2	98.3	94.2	9.7	10.3
Maleic Hydrazide	92.7	76.2	108.9	118.2	101.3	97.9	99.3	95.1	80.6	81.9	95.2	13.1	13.7
MPPA	101.0	92.4	93.2	93.4	78.0	83.3	83.3	88.7	84.8	80.4	87.8	7.1	8.1
N-Acetyl AMPA	102.6	98.3	94.6	96.0	93.8	99.5	89.2	94.2	92.1	94.7	95.5	3.8	4.0
N-acetyl glufosinate	103.8	92.3	111.9	101.9	98.2	99.2	92.6	94.6	89.6	90.2	97.4	7.0	7.2
N-acetyl Glyphosate	64.5	64.2	84.1	72.9	65.8	63.5	62.2	61.9	61.3	61.4	66.2	7.2	10.8
Perchlorate	85.5	78.0	84.3	80.9	71.5	73.9	74.9	79.0	77.7	74.6	78.0	4.5	5.8
Phosphonic acid	97.6	93.6	77.4	94.8	75.3	81.8	78.9	78.2	77.8	77.3	83.9	9.2	10.9

Orange	Precision										
	10.0		20.0		50.0		100.0		250.0		
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean
AMPA	30.8	17.8	16.1	20.5	6.9	3.9	5.8	7.9	3.2	1.4	11.4
Chlorate	11.6	2.4	6.3	1.6	5.2	3.0	2.0	4.6	7.1	3.3	4.7
Cyanuric Acid	9.2	14.9	10.6	6.4	7.7	9.5	2.6	8.9	8.7	3.6	6.8
Dicamba	13.9	13.9	16.3	16.0	12.8	5.9	11.5	9.7	8.2	9.3	11.2
Ethephon	7.8	5.1	8.1	11.5	6.7	4.3	4.6	6.3	4.9	2.4	6.2
Fosetyl Aluminium	14.3	2.6	3.4	3.1	2.6	3.7	2.1	2.6	4.7	1.6	4.1
Glufosinate	12.3	10.6	3.6	9.6	2.6	7.5	7.6	6.2	5.7	5.3	7.1
Glyphosate	15.1	10.9	15.6	4.7	7.4	8.2	6.8	2.8	5.4	5.3	8.2
HEPA	17.9	24.7	9.5	4.3	3.3	6.9	2.4	7.0	5.3	1.7	8.3
Maleic Hydrazide	9.8	12.9	11.6	11.5	4.2	17.5	7.1	6.3	15.0	8.4	10.4
MPPA	19.3	3.8	15.0	3.4	4.6	15.5	1.8	13.2	12.4	1.2	9.0
N-Acetyl AMPA	11.5	3.8	8.6	2.2	2.8	7.7	1.1	8.4	5.3	1.8	5.3
N-acetyl glufosinate	5.3	5.6	7.1	4.3	1.9	5.9	3.0	5.1	2.6	2.0	4.3
N-acetyl Glyphosate	12.5	5.4	12.6	9.7	7.1	4.4	4.1	3.6	1.5	4.0	6.5
Perchlorate	12.7	2.1	12.9	2.6	4.6	8.4	2.3	9.9	9.0	2.1	6.7
Phosphonic acid	8.7	8.5	8.5	6.8	5.7	7.2	9.6	4.5	5.6	2.0	6.5

Tomato	Accuracy												
	10		20		50		100		250				
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean	s	% CV
AMPA	114.8	112.3	82.6	84.7	86.3	84.9	93.2	94.3	80.8	80.0	91.4	12.6	13.8
Chlorate	123.5	115.7	100.5	105.0	98.3	100.5	91.5	94.8	114.0	122.3	106.6	11.5	10.7
Cyanuric Acid	87.1	83.3	106.2	109.3	104.3	103.1	95.0	94.9	92.5	96.0	97.6	4.8	5.0
Dicamba	92.2	100.4	109.1	109.8	99.0	104.7	101.4	105.8	108.6	113.2	106.4	4.7	4.4
Ethephon	139.8	141.0	120.6	116.9	110.5	116.5	143.6	145.4	104.5	103.9	124.3	16.5	13.3
Fosetyl Aluminium	102.8	103.4	91.6	97.6	83.4	84.8	84.0	84.4	91.0	91.0	91.4	7.6	8.3
Glufosinate	92.9	88.9	86.3	85.5	88.9	95.5	81.8	80.9	93.8	96.7	89.1	5.5	6.2
Glyphosate	86.8	92.8	75.5	69.8	57.7	57.7	67.5	65.1	55.2	57.5	68.6	13.0	18.9
HEPA	100.4	100.1	99.4	91.8	100.4	110.1	100.3	104.0	95.7	97.6	100.0	4.8	4.8
Maleic Hydrazide	94.8	97.7	101.9	87.5	99.5	109.6	101.7	103.0	86.2	96.9	97.9	7.1	7.2
MPPA	97.3	102.9	90.3	96.7	84.2	88.1	91.5	91.8	79.2	79.6	90.2	7.7	8.5
N-Acetyl AMPA	90.7	99.2	93.3	90.9	91.1	92.1	99.4	99.9	92.0	92.5	94.1	3.8	4.0
N-acetyl glufosinate	91.7	105.3	86.0	88.4	87.5	94.8	95.3	96.1	92.0	93.6	93.1	5.5	5.9
N-acetyl Glyphosate	84.4	69.3	69.3	63.4	63.9	63.3	70.8	67.1	64.5	67.0	68.3	6.3	9.2
Perchlorate	101.0	106.8	95.2	101.3	90.6	91.8	87.8	86.9	95.2	96.7	95.3	6.4	6.7
Phosphonic acid	103.0	90.7	93.0	95.1	82.5	81.9	91.7	91.5	71.3	71.8	86.7	12.6	14.5

Tomato	Precision										
	10.0		20.0		50.0		100.0		250.0		
	A1	A2	A1	A2	A1	A2	A1	A2	A1	A2	Mean
AMPA	19.6	9.1	8.2	16.2	8.5	8.1	3.4	3.2	7.7	5.9	9.0
Chlorate	2.0	4.4	4.2	5.0	1.6	2.3	6.5	7.8	8.5	6.4	4.9
Cyanuric Acid	11.2	11.6	7.8	8.7	7.7	10.1	5.9	4.7	5.4	5.3	6.5
Dicamba	11.3	12.7	24.8	11.1	8.1	12.0	8.4	6.3	6.8	7.8	10.7
Ethephon	18.1	6.7	7.2	5.9	7.0	5.1	2.0	2.3	5.5	3.0	6.3
Fosetyl Aluminium	17.2	9.6	5.3	9.8	1.9	3.9	2.1	2.2	6.1	3.8	6.2
Glufosinate	15.4	10.1	12.0	5.9	6.3	14.1	10.7	7.6	7.6	6.8	9.7
Glyphosate	8.0	5.3	11.2	8.1	9.3	28.3	13.9	5.8	21.6	14.4	12.6
HEPA	17.4	8.7	8.5	9.8	9.9	6.6	3.9	4.5	3.1	2.8	7.5
Maleic Hydrazide	3.9	12.5	20.5	19.5	12.8	13.9	12.5	10.4	16.3	12.6	13.5
MPPA	19.8	4.4	5.1	9.6	3.1	7.7	4.3	4.6	6.8	3.5	6.9
N-Acetyl AMPA	5.6	1.1	8.2	4.5	3.6	6.2	2.7	3.1	4.6	1.9	4.2
N-acetyl glufosinate	13.2	9.5	10.7	7.4	5.1	9.6	7.7	5.8	6.3	3.3	7.9
N-acetyl Glyphosate	15.7	5.9	12.2	9.0	5.0	12.7	10.6	8.0	20.9	15.1	11.5
Perchlorate	3.7	4.2	4.1	5.6	3.4	3.1	4.2	3.8	5.8	5.0	4.3
Phosphonic acid	17.6	11.9	7.1	10.4	1.2	6.6	2.7	3.3	6.8	5.1	6.9

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Fig S1(a) – transitions from 0.1μg/l recoveries in wheat a) AMPA, b) chlorate, c) cyanuric acid (oranges at 1μg/kg), d) dicamba, e) ethephon, f) fosetyl aluminium, g) glufosinate, h) glyphosate

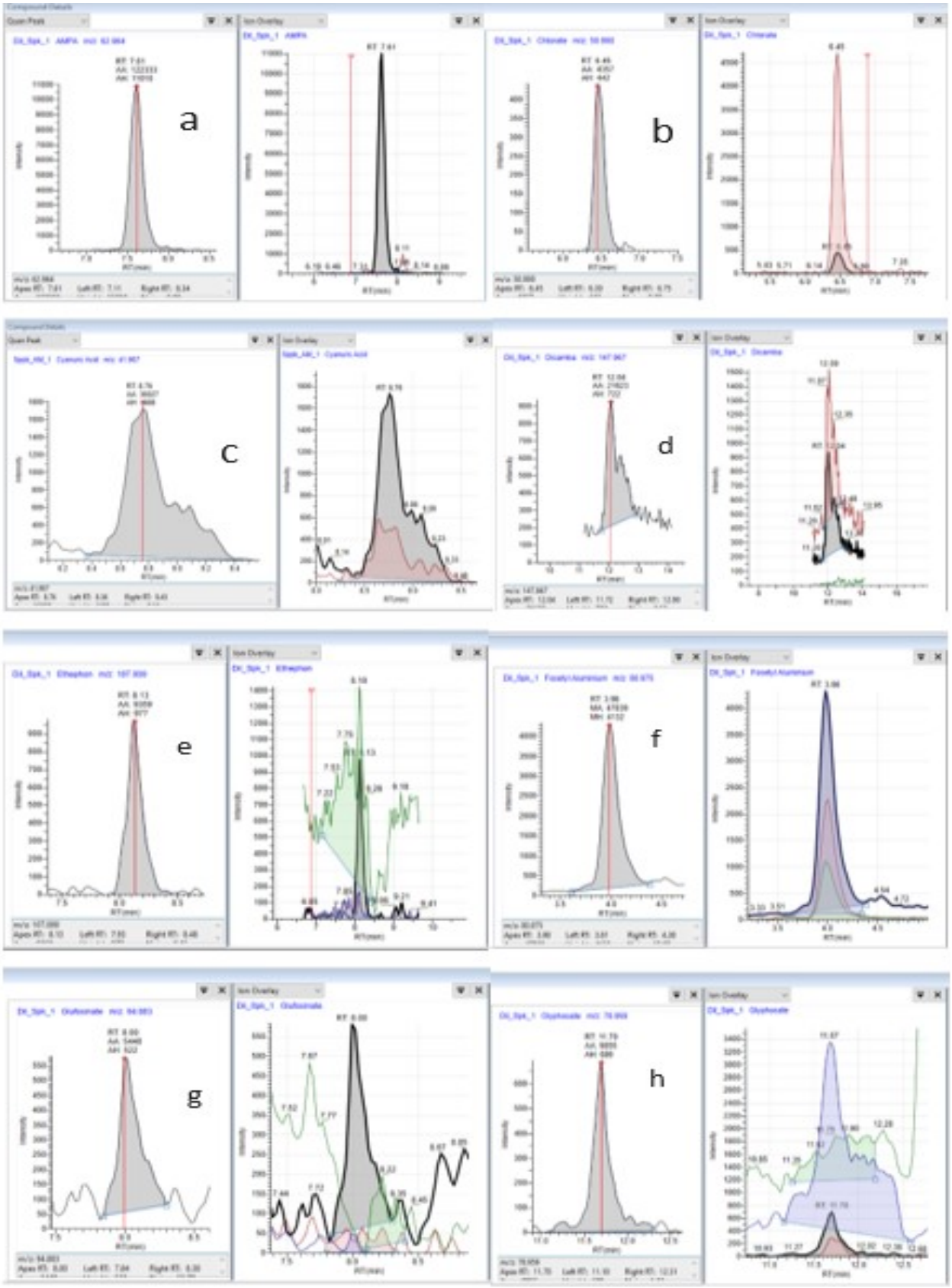


Fig S1 (b) - transitions from 0.1μg/l recoveries in infant formula a) HEPA, b) Maleic Hydrazide, c) MPPA, d) N-acetyl ampa, e) N-acetyl glufosinate, f) N-acetyl glyphosate, g) perchlorate, h) phosphonic acid

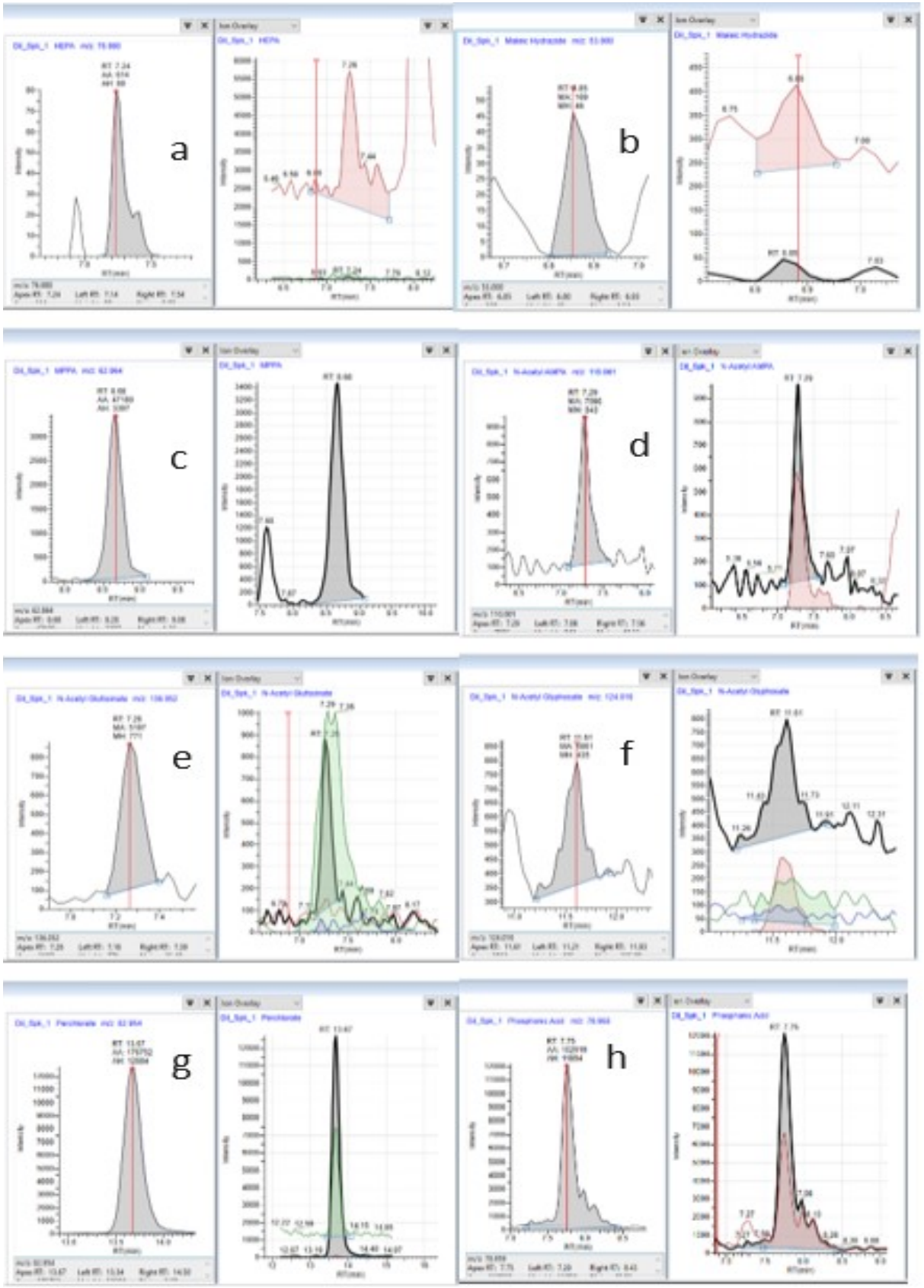


Fig S2 – Ion Ratio data for the matrices validated in this study

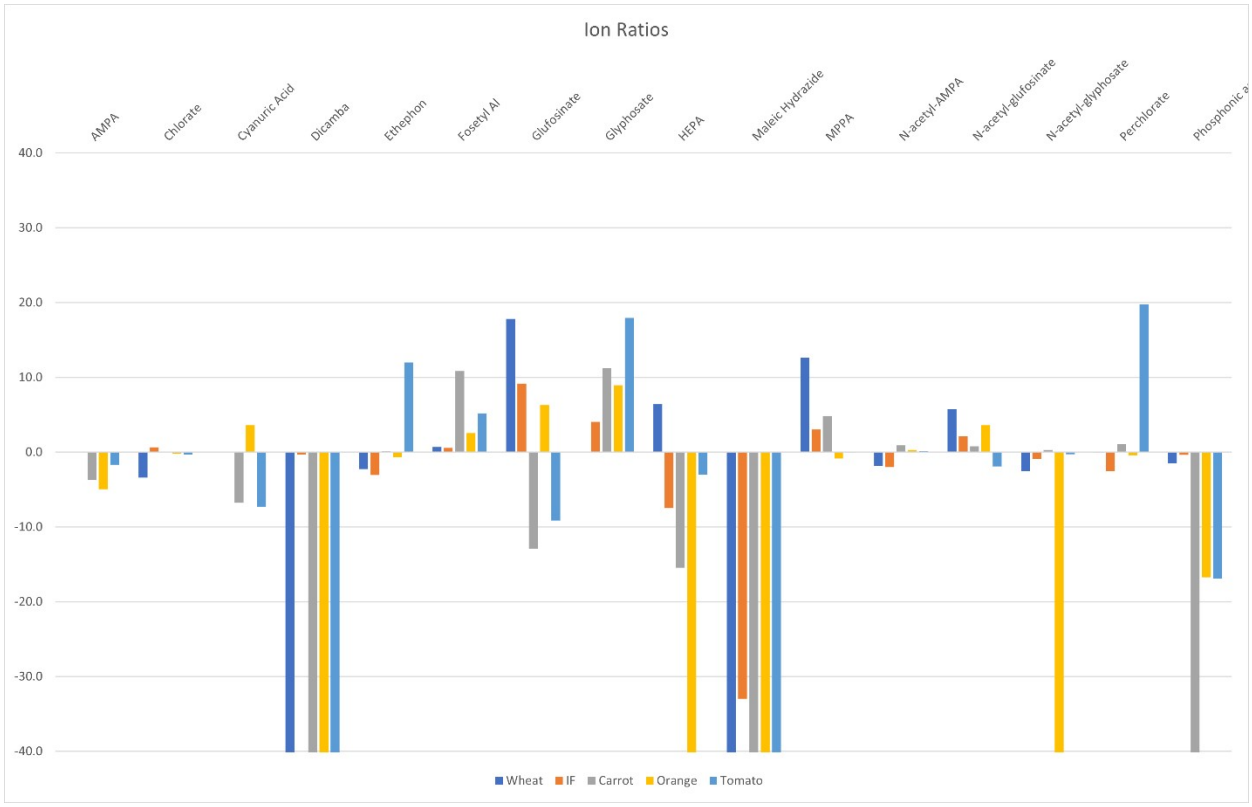
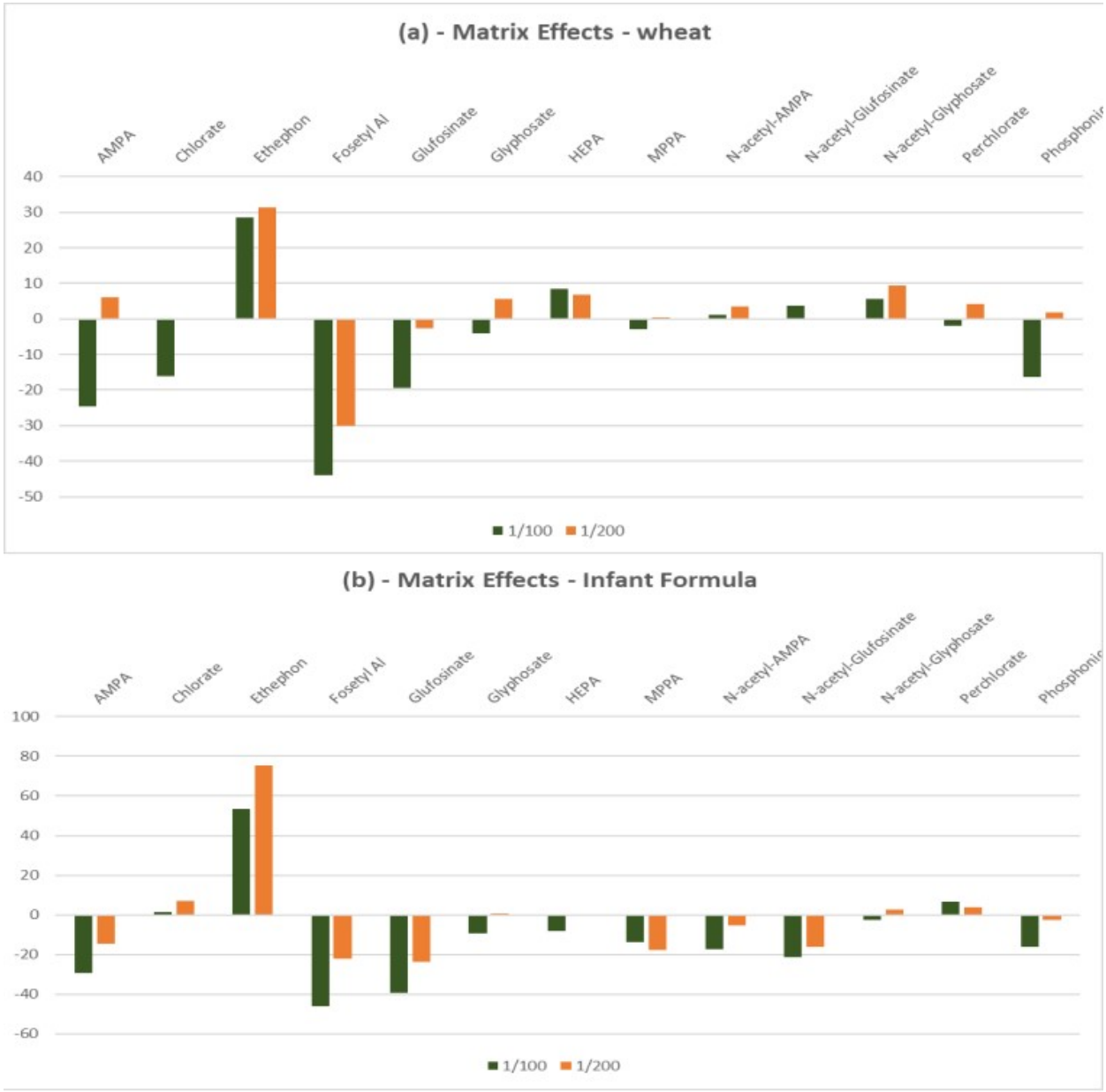


Fig S3 – Matrix effects for (a) wheat and (b) Infant Formula



93 Fig S4 – Matix Effects fruit and vegetables – (a) oranges, (b) Tomatoes and (c) carrots
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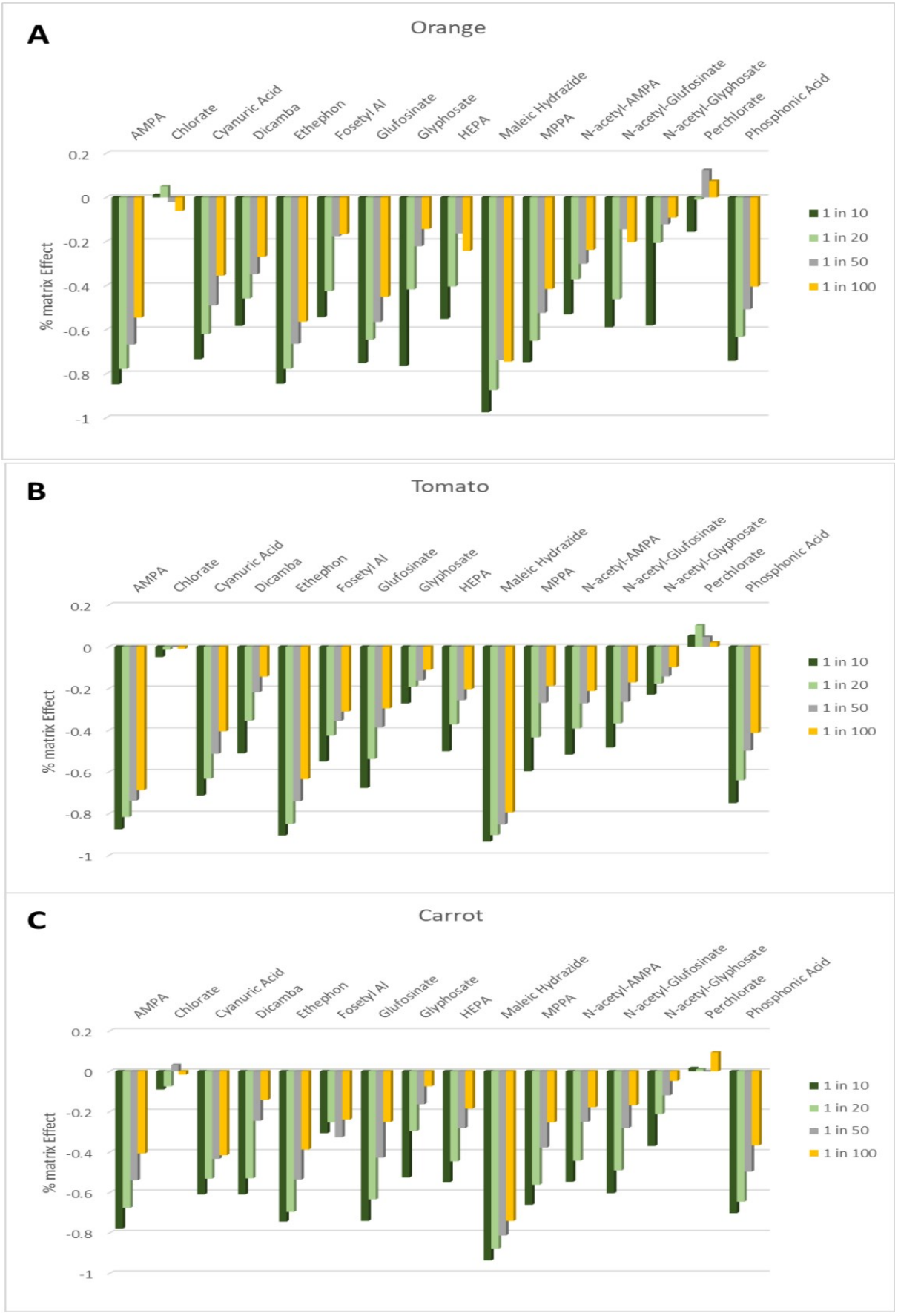

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