

## **Supporting Information**

**Manuscript Title:** Residues and Dietary Risk Assessments of 2,4-D Isooctyl Ester, Metribuzin, Acetochlor, and 2-Ethyl-6-methylaniline in Corn or Soybean Fields

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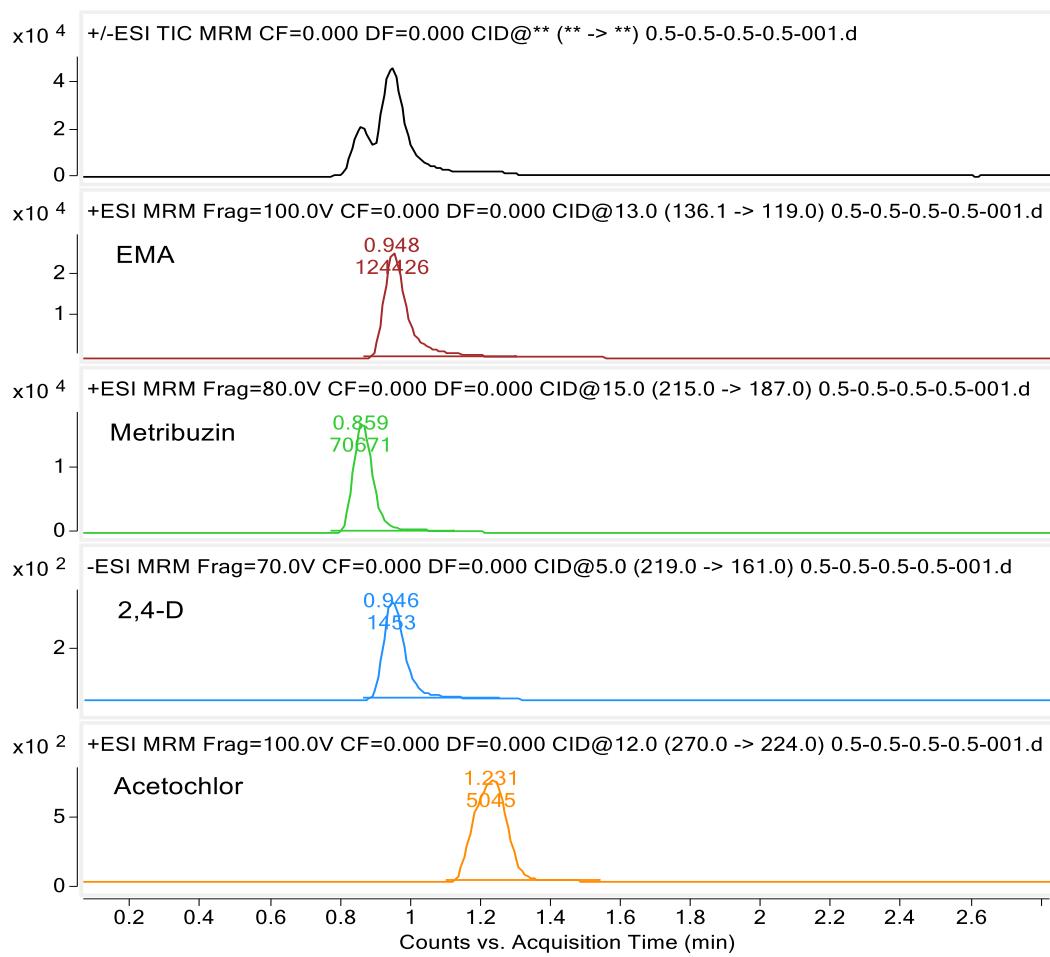


Figure S1. Representative chromatograms of isometric elution for 2,4-D, metribuzin, acetochlor, and EMA

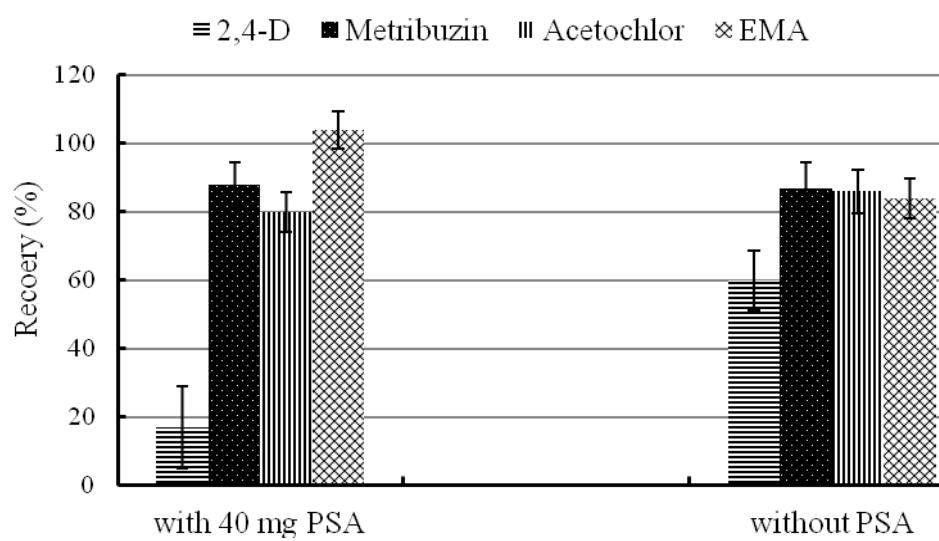


Figure S2. Evaluation of the effect of PSA (40 mg) on 2,4-D, metribuzin, acetochlor, and EMA in soybean grain

Table S1. Cultivated Varieties of Representative Locations for Field Trials on Corn and Soybeans

crop	location	cultivated variety
corn	Liaoyang of Liaoning province	Zhengdan 958
	Nanning of Guangxi province	Decca 008
	Beijing	Zhengdan 958
	Harbin of Heilongjiang province	Fenghe 6
	Xianyang of Shaanxi province	Xianyu 335
	Wulanchabu of Neimenggu province	Baoyu 2
soybeans	Suzhou of Anhui province	Zhonghuang 35
	Wulanchabu of Neimenggu province	Zhonghuang 35
	Yuncheng of Shanxi province	Zhonghuang 37
	Harbin of Heilongjiang province	Kenfeng 16
	Shenyang of Liaoning province	Tiefeng 20
	Nanning of Guangxi province	self retaining

Table S2. Optimization of the Amount of C18 (40-80 mg) for All the Target Analytes  
in Corn and Soybeans

compound	C18 ( mg)	recovery in matrix (Mean ± RSD %, n = 5)					
		corn			soybeans		
		corn grain	corncob	corn straw	soybean grain	green soybean	soybean straw
2,4-D	40	81± 8.4	92± 4.6	95± 11.2	55± 9.4	89± 6.2	88± 13.8
	60	75± 8.1	97± 7.3	84± 8.1	53± 12.4	88± 4.6	87± 11.3
	80	78± 6.2	101± 5.4	106± 9.0	59± 8.0	86± 5.2	102± 8.8
metribuzin	40	96± 3.4	84± 9.3	110± 12.2	72± 9.1	72± 3.9	105± 5.9
	60	92± 5.1	84± 11.1	108± 10.4	73± 6.8	76± 2.7	105± 8.7
	80	99± 3.2	86± 8.1	109± 8.7	78± 9.4	84± 6.3	107± 13.7
acetochlor	40	88± 6.7	86± 9.0	105± 7.9	79± 10.1	90± 9.2	102± 8.4
	60	89± 5.3	92± 6.0	106± 8.0	79± 7.2	81± 2.6	106± 6.7
	80	96± 4.2	97± 4.8	108± 6.2	83± 6.5	102± 2.3	106± 7.4
EMA	40	87± 8.7	96± 8.1	94± 7.3	80± 5.0	106± 6.5	96± 6.3
	60	87± 6.4	96± 9.3	86± 9.0	76± 7.5	103± 9.2	90± 8.2
	80	91± 2.7	97± 6.7	89± 6.1	76± 7.9	99± 8.1	96± 7.9

Table S3. Optimization of Extraction Durations (20-60 min) for All the Target Analytes in Soybean Grain Using Ultrasonic Extraction

compound	recovery in soybean grain (mean ± RSD %, n = 5)				
	20 min	30 min	40 min	50 min	60 min
2,4-D	65±13.2	78± 6.7	74± 6.2	63± 9.2	70± 5.6
metribuzin	101± 9.2	99± 5.1	102± 6.2	98± 8.0	104± 8.5
acetochlor	90± 6.6	97± 5.0	82± 4.3	92± 3.4	86± 5.2
EMA	90± 8.2	88± 3.7	86± 4.6	86± 7.4	90± 3.2

Table S4. Mean Terminal Residues (in Duplicate for Each Plot) of 2,4-D Isooctyl Ester, Metribuzin, Acetochlor, and EMA in Corn Fields

location	compound	dose (g a.i./ha)	fresh	mature	corn	corn straw		
			corn	corn	cob	moisture content (%)	mean residue fresh weight	terminal residue (mg/kg) dry weight
			mean terminal residue (mg/kg)					
Liao -ning	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	27.0	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
Guangxi	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	52.7	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
Beijing	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	38.2	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
Heilong -jiang	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	11.6	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
Shaanxi	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	32.7	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
Neimen -ggu	2,4-D isoctyl ester	2152.5	<0.05	<0.05	<0.05	42.8	<0.075	<0.075
	metribuzin	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	acetochlor	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05
	EMA	2152.5	<0.05	<0.05	<0.05		<0.05	<0.05

Table S5. Mean Terminal Residues (in Duplicate for Each Plot) of 2,4-D Isooctyl Ester, Metribuzin, Acetochlor, and EMA in Soybean Fields

location	compound	dose (g a.i./ha)	green	soybean	soybean straw		
			soybean	grain	moisture content (%)	mean residue (mg/kg) fresh weight	terminal residue (mg/kg) dry weight
Anhui	2,4-D isoctyl ester	1800	<0.05	<0.05	40.4	<0.075	<0.075
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05
Neimenggu	2,4-D isoctyl ester	1800	<0.05	<0.05	45.2	<0.075	<0.075
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05
Shanxi	2,4-D isoctyl ester	1800	<0.05	<0.05	58.5	<0.075	<0.075
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05
Heilong -jiang	2,4-D isoctyl ester	1800	<0.05	<0.05	24.3	0.13	0.10
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05
Liaoning	2,4-D isoctyl ester	1800	<0.05	<0.05	25.6	<0.075	<0.075
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05
Guangxi	2,4-D isoctyl ester	1800	<0.05	<0.05	34.2	<0.075	<0.075
	metribuzin	1800	<0.05	<0.05		<0.05	<0.05
	acetochlor	1800	<0.05	<0.05		<0.05	<0.05
	EMA	1800	<0.05	<0.05		<0.05	<0.05