

Table S1. Active ingredients and toxicity class of pesticides used in the study area

Trade Name	Chemical Formula	Pesticides	Function	ADI	ARfD	AOEL	Toxicity	WHO class Category
Ethion	$C_9H_{22}O_4P_2S_4$	Insecticides	Nonsystemic	0–0.002 mg/kg bw/day	0.02 mg/kg bw	Not	LD50:208 mg/kg (oral, rat)	II
Imidacloprid	$C_9H_{10}ClN_5O_2$	Insecticides	Systemic	0.06 mg/kg bw/day	0.08 mg/kg bw	0.08 mg/kg bw/day	LD50: 450 mg/kg (oral, rat)	II
Metalaxyl	$C_{15}H_{21}NO_4$	Fungicide	Systemic	0.08 mg/kg bw/day	0.5 mg/kg bw	Not	LD50: 669 mg/kg (oral, rat)	IV
Dimethoate	$C_5H_{12}NO_3PS_2$	Insecticide	Systemic	0.01 mg/kg bw/day	0.02 mg/kg bw	0.001 mg/kg bw/day	LD50: 425 mg/kg (oral, rat)	II
Diazinon	$C_{12}H_{21}N_2O_3PS$	Acaricide	Nonsystemic	0.0002 mg/kg bw/day	0.025 mg/kg bw	0.0002 mg/kg bw/day	LD50: 66 mg/kg (oral, rat)	II
Methyl parathion	$C_8H_{10}NO_5PS$	Insecticide	Nonsystemic	0.02 mg/kg bw	0.3 $\mu$ g OA equivalents/k g bw	0.3 mg/kg bw/day	LD50: 6.1 mg/kg (oral, rat)	I
Dichlorvos	$C_4H_7Cl_2O_4P$	Insecticide	Systemic	0.00008 mg/kg bw/day	0.002 mg/kg bw	0.0005 mg/kg bw/day	LD50: 56 mg/kg (oral, rat)	Ib

Chlorpyrifos	C <sub>9</sub> H <sub>11</sub> C <sub>13</sub> NO <sub>3</sub> PS	Insecticide	Systemic	0.001 mg/kg bw/day	0.1 mg/kg bw	0.001 mg/kg bw/day	LD50: 102 mg/kg (oral, rat)	II
Thiacloprid	C <sub>10</sub> H <sub>9</sub> ClN <sub>4</sub> S	Insecticide	Systemic	0.01 mg/kg bw/day	0.02 mg/kg bw	0.02 mg/kg bw/day	LD50: 836 mg/kg (oral, rat)	II
Tebuconazole	C <sub>16</sub> H <sub>22</sub> ClN <sub>3</sub> O	Fungicide	Systemic	0.03 mg/kg bw/day	0.03 mg/kg bw	0.03 mg/kg bw/day	LD50: >5000 mg/kg (oral, rat)	III
Oxydemeton -methyl	C <sub>6</sub> H <sub>15</sub> O <sub>4</sub> PS <sub>2</sub>	Insecticide	Systemic	0.0003 mg/kg bw/day	0.0015 mg/kg bw	0.001 mg/kg bw/day	LD50: 50 mg/kg (oral, rat)	Ib
Carbaryl	C <sub>12</sub> H <sub>11</sub> NO <sub>2</sub>	Insecticide	Slight systemic	0.0075 mg/kg bw/day	0.01 mg/kg bw	0.01 mg/kg bw/day	LD50: 230 mg/kg (oral, rat)	II
Mancozeb	C <sub>8</sub> H <sub>12</sub> MnN <sub>4</sub> S <sub>8</sub> Zn	Fungicide	Nonsystemic	0.023 mg/kg bw/day	0.15 mg/kg bw	0.011 mg/kg bw/day	LD50:5 g/kg (oral, rat)	III
Malathion	C <sub>10</sub> H <sub>19</sub> O <sub>6</sub> PS <sub>2</sub>	Insecticide	Nonsystemic	0.03 mg/kg bw/day	0.3 mg/kg bw	0.03 mg/kg bw/day	LD50:369 mg/kg (oral, rat)	I
Benomyl	C <sub>14</sub> H <sub>18</sub> N <sub>4</sub> O <sub>3</sub>	Fungicide	Systemic	0.02 mg/kg	0.02 mg/kg bw	0.0003 mg/kg bw/day	LD50:>9,590 mg/kg (oral, rat)	II
Lindane	C <sub>6</sub> H <sub>6</sub> Cl <sub>6</sub>	Insecticide	Systemic	0.02 mg/kg bw/day	0.01 mg/kg bw	0.001 mg/kg bw/day	LD50:100 mg/kg (oral, rat)	II

Chlorpriyfos	C <sub>9</sub> H <sub>11</sub> Cl <sub>3</sub> NO <sub>3</sub> PS	Insecticide	Nonsystemic	0.01 mg/kg bw/day	0.1 mg/kg bw/day	0.0015 mg/kg bw/day	LD50: 102 mg/kg (oral, rat)	II
Fenpropathri n	C <sub>22</sub> H <sub>23</sub> NO <sub>3</sub>	Insecticide	Nonsystemic	0.03 mg/kg bw/day	0.03 mg/kg bw	0.0027 mg/kg-1 bw/day	LD50: 70.6 mg/kg (oral, rat)	II

Acceptable Daily Intake (ADI)

Acute Reference Dose (ARfD)

Acceptable Operator Exposure Levels (AOEL)

Table S2. MCL standard for a number of pesticides

Line	Parameter	Standard no.1053 (maximum level)( µg/L)	Iran, EPA (MCL) (µg/L)	WHO (MCL) (µg/L)
1	2,4-D	30	70	30
2	Alachlor	20	2	20
3	Atrazine	2	3	2
4	Aldrin + Dieldrin	0.03	-	0.03
5	Carbofuran	7	40	7
6	Chlordane	200	2	0.2
7	Lindane	2	0.02	2
8	Metolachlor	10	-	10
9	Molinate	6	-	6
10	Simazine	2	-	2
11	Trifluralin	20	5	20