**Supplementary for:**

**Distribution of pesticides and polychlorinated biphenyls in food of animal origin in Croatia**

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**Table S1.** GC-MS/MS ion transitions and collision energies (CE).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Compound** | **Rt**  **(min)** | **Ion precursor; ion product 1**  **(m/z)** | **CE1 (eV)** | **Ion precursor; ion product 2 (m/z)** | **CE2 (eV)** | **Ion precursor; ion product 3 (m/z)** | **CE3 (eV)** |
| **Organochlorine pesticides (OCPs)** |  |  |  |  |  |  |  |
| Aldrin | 23.22 | 262.8; 193.1 | 40 | 262.8; 191.1 | 40 |  |  |
| Chlordane, cis- | 26.68 | 374.7; 266.0 | 27 | 374.7; 302.9 | 10 |  |  |
| Chlordane, trans- | 26.09 | 374.8; 266.0 | 30 | 374.8; 268 | 22 |  |  |
| DDD- p,p' | 28.95 | 234.8; 165.1 | 27 | 234.8; 199.1 | 20 |  |  |
| DDE- p,p' | 27.51 | 246.0; 175.2 | 40 | 246; 176.1 | 10 |  |  |
| DDT -o,p' | 29.06 | 234.9; 165.0 | 27 | 234.9; 199.1 | 17 |  |  |
| DDT -p,p' | 30.13 | 234.9; 165.1 | 25 | 234.9; 199 | 20 |  |  |
| Dieldrin | 27.55 | 262.7; 192.9 | 37 | 262.7; 191 | 35 |  |  |
| Endosulfan, alpha- | 26.58 | 240.9; 206.1 | 15 | 240.9; 171 | 30 |  |  |
| Endosulfan, beta- | 28.66 | 241.0; 206.0 | 15 | 238.8; 204 | 15 | 195; 159 | 5 |
| Endosulfansulfate | 30.03 | 271.9; 236.9 | 10 | 271.9; 116.9 | 40 |  |  |
| Endrin | 28.33 | 262.7; 193.1 | 35 | 262.7; 191.1 | 35 |  |  |
| HCH, alpha- | 15.78 | 218.9; 183.0 | 7 | 218.9; 181 | 7 |  |  |
| HCH, beta- | 17.12 | 218.9; 183.0 | 6 | 218.9; 180.8 | 6 |  |  |
| HCH, gamma-/Lindan | 17.46 | 218.9; 183.0 | 5 | 218.9; 181.0 | 5 |  |  |
| Heptachlor | 21.35 | 271.6; 237.0 | 15 | 273.7; 239 | 15 |  |  |
| Heptachlorepoxid, egzo- | 25.10 | 352.8; 263.0 | 20 | 352.8; 281.9 | 20 |  |  |
| Heptachlorepoxid, endo- | 25.29 | 252.8; 183.1 | 40 | 252.8; 181.2 | 40 |  |  |
| Hexachlorobenzene | 16.17 | 283.9; 213.9 | 32 | 283.9; 248.9 | 32 |  |  |
| Oxychlordane | 25.10 | 386.8; 262.8 | 14 | 388.8; 263 | 14 |  |  |
| Pentachloroaniline | 19.94 | 264.7; 194.0 | 28 | 264.7; 203 | 28 |  |  |
| Pirimiphos-methyl | 22.73 | 290.0; 124.9 | 25 | 290; 151 | 20 |  |  |
| Quintozene | 17.72 | 236.9; 118.9 | 30 | 236.9; 142.7 | 30 |  |  |
| **Organophosphorous pesticides (OPPs)** |  |  |  |  |  |  |  |
| Azinphos-ethyl | 33.85 | 160.0; 132.0 | 0 | 132.; 104.0 | 4 | 159.9; 104.9 | 12 |
| Bromophos-ethyl | 26.26 | 358.8; 303.0 | 15 | 358.8; 330.9 | 5 |  |  |
| Carbophenothion | 29.78 | 156.9; 74.9 | 40 | 156.9; 121.1 | 25 |  |  |
| Chlorfenvinphos | 25.54 | 266.9; 159.0 | 15 | 266.9; 81 | 30 |  |  |
| Chlorobenzilate | 28.64 | 250.8; 139.1 | 15 | 250.8; 111.1 | 37 |  |  |
| Chlorpyrifos | 23.68 | 314.0; 258.1 | 7 | 314; 286.1 | 5 |  |  |
| Chlorpyrifos-methyl | 21.00 | 285.7; 93.0 | 20 | 287.7; 93.0 | 20 |  |  |
| Diazinon | 18.43 | 199.0; 92.9 | 18 | 199; 135,1 | 10 |  |  |
| Dichlorvos | 7.37 | 109.0; 78.7 | 5 | 184.9; 93 | 10 |  |  |
| Ethion | 29.12 | 230.8; 128.9 | 25 | 230.8, 175 | 10 |  |  |
| Fenchlorphos | 21.83 | 284.7; 269.8 | 15 | 284.7; 93 | 30 |  |  |
| Fenchlorphos-oxon | 21.80 | 262.0; 109 | 30 | 262.0; 121 | 30 |  |  |
| Fenithrotion | 22.57 | 276.8; 260.0 | 5 | 277; 125.1 | 20 | 277; 109.1 | 20 |
| Fenthion | 19.30 | 278.0; 109.1 | 20 | 278.0; 124.9 | 20 |  |  |
| Malathion | 23.17 | 173.0; 98.8 | 15 | 173.0; 117.2 | 10 | 158.0; 125.0 | 8 |
| Methidathion | 26.18 | 145.0; 85.0 | 5 | 145; 58.1 | 15 | 302; 85 | 16 |
| Methoxychlor | 31.82 | 226.9; 169.1 | 27 | 226.9; 141.0 | 40 |  |  |
| Mevinphos | 9.80 | 127.0; 109.1 | 11 | 192; 127 | 11 |  |  |
| Paraoxon-metyl | 14.69 | 230.0; 200.1 | 5 | 230.0; 136.1 | 5 |  |  |
| Parathion-ethyl | 23.70 | 291.0; 109.0 | 10 | 291.0; 81.0 | 25 |  |  |
| Parathion-methyl | 21.00 | 262.8; 109.0 | 9 | 263; 246 | 2 | 262.8; 79.1 | 30 |
| Pirimiphos-methyl | 18.45 | 290.0; 124.9 | 25 | 290.0; 151.0 | 20 |  |  |
| Profenofos | 27.39 | 208.0; 63.1 | 44 | 338.9; 269.0 | 12 |  |  |
| Propetamphos | 17.77 | 138.2; 109.9 | 5 | 138.2; 64.2 | 15 |  |  |
| Pyrazophos | 33.70 | 220.9; 193.1 | 10 | 220.9; 149.1 |  |  |  |
| Tetrachlorvinphos | 26.59 | 330.8; 109.0 | 20 | 330.8; 79.0 | 27 |  |  |
| Triazophos | 29.54 | 161.0; 134.0 | 5 | 161.0; 106.0 | 10 | 257.0; 162.0 | 5 |
| **Pyrethroids** |  |  |  |  |  |  |  |
| Allethrin | 25.60 | 123.0; 81.2 | 7 | 123; 79.1 | 22 |  |  |
| Bifenthrin | 31.68 | 180.9; 166.1 | 12 | 180.9; 165.2 | 30 |  |  |
| Cyfluthrin | 35.89 | 162.9; 91.1 | 15 | 162.9; 127.1 | 5 |  |  |
| Cypermethrin | 36.64 | 180.9; 152.1 | 28 | 180.9; 127.1 | 30 |  |  |
| Deltamethrin | 41.89 | 180.9; 152.2 | 25 | 253.0; 93.0 | 20 |  |  |
| Fenpropathrin | 31.87 | 180.9; 152.1 | 27 | 181.1; 127.1 | 35 |  |  |
| Fenvalerate | 39.24 | 166.9; 125.1 | 10 | 125.1; 89.1 | 25 |  |  |
| Permethrin | 34.89 | 183.1; 168.1 | 15 | 183.1; 153.1 | 15 | 183; 115.2 | 25 |
| Resmethrin | 28.05 | 123.0; 81.4 | 10 | 123.0; 95.0 | 10 |  |  |
| Tetramethrin | 31.67 | 164.0; 107.3 | 12 | 164; 135.1 | 10 |  |  |
| **Carbamates** |  |  |  |  |  |  |  |
| Carbaryl | 21.21 | 143.9; 115.1 | 28 | 143.9; 116.2 | 13 |  |  |
| Carbofuran | 13.15 | 164.0; 103.0 | 25 | 164.0; 149.1 | 10 |  |  |
| Furathiocarb | 32.49 | 163.0; 107.0 | 10 | 163; 77 | 30 | 164; 149.2 | 10 |
| Pirimicarb | 19.83 | 238.0; 166.2 | 7 | 166.2; 95.9 | 15 |  |  |
| **Polychorinated** [**biphenyls**](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/biphenyl) **(PCBs)** |  |  |  |  |  |  |  |
| PCB 28 | 20.52 | 255.8, 186.1 | 28 | 257.8; 186 | 28 |  |  |
| PCB 52 | 22.48 | 291.9; 222.0 | 30 | 291.9; 220 | 30 |  |  |
| PCB 101 | 26.42 | 325.8; 256.1 | 39 | 325.8; 291 | 12 |  |  |
| PCB 118 | 28.67 | 325.7; 256.0 | 30 | 325.7; 254 | 27 |  |  |
| PCB 138 | 30.27 | 359.7; 289.9 | 30 | 359.7; 324.9 | 15 |  |  |
| PCB 153 | 29.40 | 359.7; 289.9 | 30 | 359.7; 287.9 | 30 |  |  |
| PCB 180 | 32.23 | 395.6; 325.9 | 30 | 395.6; 360.9 | 15 |  |  |

Rt-retention time; CE-collision energy

**Table S2**. The average values of LOQ, precision, linearity, recovery and RSD in blank fat samples.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Compound | LOQa  (µg/kg) | Recovery  (%) | Linearity range | RSDb  (%) |
| Organochlorine pesticides (OCPs) |  |  |  |  |
| Aldrin | 2 | 82.56 | 2-250 | 7.78 |
| Chlordane, cis- | 2 | 95.72 | 2-250 | 12.45 |
| Chlordane, trans- | 2 | 80.98 | 2-250 | 10.90 |
| Chlorobenzilate | 5 | 89.09 | 5-250 | 8.76 |
| DDD- p,p' | 1 | 88.70 | 1-250 | 14.09 |
| DDE- p,p' | 1 | 92.65 | 1-250 | 12.76 |
| DDT- o,p' | 1 | 94.70 | 1-250 | 10.90 |
| DDT- p,p' | 1 | 92.93 | 1-250 | 9.87 |
| Dieldrin | 2 | 83.58 | 2-250 | 12.78 |
| Endosulfan, alpha- | 2 | 88.04 | 2-250 | 13.90 |
| Endosulfan, beta- | 2 | 93.17 | 2-250 | 12.07 |
| Endosulfansulfate | 2 | 98.07 | 2-250 | 10.65 |
| Endrin | 2 | 93.53 | 2-250 | 8.01 |
| HCH, alpha- | 1 | 97.27 | 1-250 | 6.86 |
| HCH, beta- | 1 | 94.78 | 1-250 | 7.79 |
| HCH, gamma-/Lindan | 1 | 86.45 | 1-250 | 5.67 |
| Heptachlor | 2 | 84.33 | 2-250 | 7.98 |
| Heptachlorepoxid, egzo- | 2 | 85.07 | 2-250 | 4.98 |
| Heptachlorepoxid, endo- | 2 | 83.09 | 2-250 | 7.63 |
| Hexachlorobenzene | 1 | 96.45 | 1-250 | 5.78 |
| Methoxychlor | 1 | 107.66 | 1-250 | 13.45 |
| Pentachloroaniline | 1 | 87.31 | 1-250 | 11.89 |
| Quintozene | 2 | 104.03 | 2-250 | 13.69 |
| Organophosphorous pesticides (OPPs) |  |  |  |  |
| Azinphos-ethyl | 5 | 91.34 | 5-250 | 11.23 |
| Bromophos-ethyl | 1 | 83.56 | 1-250 | 15.09 |
| Carbophenothion | 5 | 85.78 | 5-250 | 13.54 |
| Chlorfenvinphos | 1 | 103.76 | 1-250 | 13.89 |
| Chlorpyrifos | 1 | 104.67 | 1-250 | 6.90 |
| Chlorpyrifos-methyl | 1 | 108.45 | 1-250 | 9.90 |
| Diazinon | 2 | 83.17 | 2-250 | 9.09 |
| Dichlorvos | 2 | 81.14 | 2-250 | 8.56 |
| Ethion | 1 | 107.70 | 1-250 | 4.86 |
| Fenchlorphos | 1 | 99.08 | 1-250 | 8.55 |
| Fenithrotion | 1 | 117.76 | 1-250 | 7.45 |
| Fenthion | 1 | 82.63 | 1-250 | 13.65 |
| Malaoxon | 2 | 96.69 | 2-250 | 18.90 |
| Malathion | 1 | 105.45 | 1-250 | 17.87 |
| Methidathion | 1 | 90.97 | 1-250 | 15.76 |
| Mevinphos | 1 | 82.43 | 1-250 | 17.66 |
| Paraoxon-metyl | 2 | 83.56 | 2-250 | 10.43 |
| Parathion-ethyl | 2 | 97.74 | 2-250 | 12.70 |
| Parathion-methyl | 5 | 102.88 | 5-250 | 10.87 |
| Pirimiphos-methyl | 1 | 93.67 | 1-250 | 6.78 |
| Profenofos | 2 | 97.69 | 2-250 | 9.65 |
| Propetamphos | 1 | 105.58 | 1-250 | 4.54 |
| Tetrachlorvinphos | 1 | 91.78 | 1-250 | 8.91 |
| Triazophos | 1 | 104.87 | 1-250 | 13.65 |
| Pyrethroids |  |  |  |  |
| Allethrin | 10 | 80.96 | 10-250 | 8.90 |
| Bifenthrin | 1 | 86.87 | 1-250 | 14.78 |
| Cyfluthrin | 10 | 92.66 | 10-250 | 8.45 |
| Cypermethrin | 10 | 96.87 | 10-250 | 13.87 |
| Deltamethrin | 10 | 90.09 | 10-250 | 5.76 |
| Fenpropathrin | 1 | 110.75 | 1-250 | 9.01 |
| Fenvalerate | 10 | 104.54 | 10-250 | 12.99 |
| Permethrin | 5 | 86.09 | 5-250 | 13.90 |
| Resmethrin | 10 | 81.09 | 10-250 | 13.56 |
| Tetramethrin | 1 | 95.09 | 1-250 | 14.94 |
| Carbamates |  |  |  |  |
| Carbaryl | 2 | 86.78 | 2-250 | 11.76 |
| Carbofuran | 2 | 83.01 | 2-250 | 12.78 |
| Furathiocarb | 5 | 107.76 | 5-250 | 18.71 |
| Pirimicarb | 5 | 82.27 | 2-250 | 8.98 |
| Polychoro[biphenyls](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/biphenyl)  (PCBs) |  |  |  |  |
| PCB 28 | 0.5 | 104.65 | 0.5-250 | 12.89 |
| PCB 52 | 0.5 | 84.65 | 0.5-250 | 11.76 |
| PCB 101 | 0.5 | 87.97 | 0.5-250 | 9.76 |
| PCB 118 | 0.5 | 106.85 | 0.5-250 | 6.57 |
| PCB 138 | 1 | 108.56 | 1-250 | 5.90 |
| PCB 153 | 0.5 | 97.54 | 0.5-250 | 8.98 |
| PCB 180 | 1 | 101.86 | 1-250 | 7.12 |

aLOQ-limit of quantification; b RSD -precision, in case of repeatability

**Table S3**. The average values of LOQ, precision, linearity, recovery and RSD in blank meat samples.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Compound | LOQa  (µg/kg) | Recovery  (%) | Linearity range | RSDb  (%) |
| Organochlorine pesticides (OCPs) |  |  |  |  |
| Aldrin | 2 | 81.46 | 2-200 | 9.08 |
| Chlordane, cis- | 2 | 86.54 | 2-200 | 8.87 |
| Chlordane, trans- | 2 | 86.12 | 2-200 | 15.76 |
| Chlorobenzilate | 2 | 87.76 | 2-200 | 12.09 |
| DDD- p,p' | 2 | 91.73 | 2-200 | 11.77 |
| DDE- p,p' | 2 | 92.37 | 2-200 | 7.89 |
| DDT -o,p' | 2 | 90.82 | 2-200 | 6.98 |
| DDT -p,p' | 2 | 89.32 | 2-200 | 8.64 |
| Dieldrin | 2 | 109.67 | 2-200 | 9.09 |
| Endosulfan, alpha- | 5 | 94.78 | 5-200 | 7.89 |
| Endosulfan, beta- | 5 | 97.23 | 5-200 | 8.50 |
| Endosulfansulfate | 5 | 93.12 | 5-200 | 7.71 |
| Endrin | 2 | 105.56 | 2-200 | 10.67 |
| HCH, alpha- | 2 | 93.55 | 2-200 | 8.79 |
| HCH, beta- | 2 | 106.74 | 2-200 | 9.73 |
| HCH, gamma-/Lindan | 2 | 105.45 | 2-200 | 11.80 |
| Heptachlor | 2 | 97.42 | 2-200 | 12.69 |
| Heptachlorepoxid, egzo- | 2 | 91.87 | 2-200 | 5.78 |
| Heptachlorepoxid, endo- | 5 | 89.60 | 5-200 | 7.90 |
| Hexachlorobenzene | 2 | 80.76 | 2-200 | 13.67 |
| Methoxychlor | 2 | 93.76 | 2-200 | 12.70 |
| Pentachloroaniline | 2 | 102.67 | 2-200 | 11.23 |
| Quintozene | 2 | 97.67 | 2-200 | 11.40 |
| Organophosphorous pesticides (OPPs) |  |  |  |  |
| Azinphos-ethyl | 2 | 90.87 | 2-200 | 13.65 |
| Bromophos-ethyl | 2 | 92.34 | 2-200 | 6.78 |
| Carbophenothion | 5 | 84.23 | 5-200 | 4.89 |
| Chlorfenvinphos | 2 | 89.19 | 2-200 | 14.55 |
| Chlorpyrifos | 2 | 95.54 | 2-200 | 11.87 |
| Chlorpyrifos-methyl | 2 | 97.56 | 2-200 | 15.50 |
| Diazinon | 2 | 104.67 | 2-200 | 7.45 |
| Dichlorvos | 2 | 107.09 | 2-200 | 5.78 |
| Ethion | 2 | 102.56 | 2-200 | 11.32 |
| Fenchlorphos | 2 | 86.98 | 2-200 | 10.65 |
| Fenthion | 1 | 90.87 | 1-200 | 15.49 |
| Fenithrotion | 2 | 91.56 | 2-200 | 7.77 |
| Malathion | 2 | 106.66 | 2-200 | 17.21 |
| Methidathion | 2 | 110.89 | 2-200 | 14.32 |
| Mevinphos | 2 | 102.56 | 2-200 | 10.91 |
| Parathion-ethyl | 2 | 111.14 | 2-200 | 7.89 |
| Parathion-methyl | 2 | 108.64 | 2-200 | 5.12 |
| Pirimiphos-methyl | 2 | 96.77 | 2-200 | 17.71 |
| Profenofos | 2 | 91.66 | 2-200 | 16.76 |
| Propetamphos | 2 | 104.78 | 2-200 | 14.55 |
| Tetrachlorvinphos | 2 | 103.67 | 2-200 | 12.67 |
| Triazophos | 2 | 97.82 | 2-200 | 9.52 |
| Pyrethroids |  |  |  |  |
| Allethrin | 5 | 83.67 | 5-200 | 16.54 |
| Bifenthrin | 2 | 107.76 | 2-200 | 12.23 |
| Cyfluthrin | 5 | 87.16 | 5-200 | 16.88 |
| Cypermethrin | 5 | 89.05 | 5-200 | 12.07 |
| Deltamethrin | 5 | 81.45 | 5-200 | 8.03 |
| Fenpropathrin | 2 | 107.65 | 2-200 | 8.25 |
| Fenvalerate | 2 | 87.67 | 2-200 | 3.23 |
| Permethrin | 5 | 91.31 | 5-200 | 14.98 |
| Resmethrin | 5 | 88.43 | 5-200 | 17.65 |
| Tetramethrin | 2 | 98.88 | 2-200 | 11.09 |
| Carbamates |  |  |  |  |
| Carbaryl | 5 | 102.34 | 5-200 | 17.78 |
| Furathiocarb | 5 | 87.01 | 5-200 | 4.78 |
| Pirimicarb | 5 | 105.80 | 2-200 | 17.90 |
| Polychloro[biphenyls](https://www.sciencedirect.com/topics/earth-and-planetary-sciences/biphenyl)  (PCBs) |  |  |  |  |
| PCB 28 | 2 | 98.65 | 2-200 | 7.86 |
| PCB 52 | 2 | 92.54 | 2-200 | 4.67 |
| PCB 101 | 2 | 101.67 | 2-200 | 7.54 |
| PCB 118 | 2 | 104.76 | 2-200 | 5.76 |
| PCB 138 | 2 | 88.76 | 2-200 | 8.81 |
| PCB 153 | 2 | 87.50 | 2-200 | 9.97 |
| PCB 180 | 2 | 104.64 | 2-200 | 8.90 |

aLOQ-limit of quantification; b RSD -precision, in case of repeatability