

Species (Abbr.)	Autumn ( <i>n</i> = 16)		Winter ( <i>n</i> = 15)		Spring ( <i>n</i> = 19)		Summer ( <i>n</i> = 15)	
	Range	Mean/SD	Range	Mean/SD	Range	Mean/SD	Range	Mean/SD
Dicarboxylic acids								
Oxalic, C <sub>2</sub>	31–1760	472/490	44.9–456	149/123	96.5–496	262/120	64.7–462	267/146
Malonic, C <sub>3</sub>	6.0–132	43.5/36.1	5.8–54.2	20.1/15.6	8.4–64.9	33.0/14.2	13.9–46.9	30.5/13.0
Succinic, C <sub>4</sub>	11.5–231	67.2/62.1	11.1–81.0	31.6/21.3	11.4–82.0	37.7/17.4	14.5–54.8	31.2/14.0
Glutaric, C <sub>5</sub>	2.8–50.3	15.2/13.6	3.5–20.9	9.2/5.6	4.9–17.8	10.3/3.8	4.4–13.9	8.8/3.4
Adipic, C <sub>6</sub>	4.4–38.8	16.2/9.0	2.9–19.0	8.9/5.0	5.9–21.1	13.6/3.8	4.9–16.7	10.6/4.0
Pimelic, C <sub>7</sub>	0.8–16.7	6.0/6.4	0.6–11.4	3.4/3.4	1.7–7.4	3.9/1.8	1.1–5.2	3.0/1.2
Suberic, C <sub>8</sub>	BDL–24.3	4.7/7.3	BDL	BDL	BDL–10	2.3/3.3	BDL–5.1	0.8/1.6
Azelaic, C <sub>9</sub>	13.7–59.3	31.6/14.2	12.1–60.3	27.3/14.7	15.1–60	27.2/11.1	11.0–28.2	19.0/5.0
Decanedioic, C <sub>10</sub>	0.2–7.7	2.3/2.0	0.4–2.6	1.2/0.6	0.7–3.2	1.6/0.8	0.9–3.0	1.7/0.6
Undecanedioic, C <sub>11</sub>	0.4–10.0	2.7/2.4	0.6–5.7	2.2/1.6	1.1–3.1	2.0/0.6	1.1–2.4	1.8/0.5
Dodecanedioic, C <sub>12</sub>	BDL–2.1	0.5/0.5	BDL–1.8	0.1/0.5	BDL–0.5	0.2/0.2	BDL–0.5	0.2/0.2
Methylmalonic, iC <sub>4</sub>	0.1–3.3	1.1/0.8	0.3–2.3	1.0/0.6	0.5–3.0	1.1/0.6	0.5–1.9	0.9/0.4
Methylsuccinic, iC <sub>5</sub>	1.3–24.7	7.3/6.8	2.2–14.5	5.7/3.8	1.4–6.8	3.8/1.9	0.7–3.8	2.2/0.9
2-Methylglutaric, iC <sub>6</sub>	0.2–6.6	1.8/1.8	0.3–2.9	1.1/0.7	0.4–1.8	1.0/0.5	0.3–1.3	0.8/0.4
Maleic, M	1.0–12.6	3.7/3.1	1.2–6.6	3.0/1.6	1.1–6.3	2.5/1.4	1.0–3.3	1.8/0.7
Fumaric, F	0.4–11.3	3.0/3.0	0.4–4.5	1.8/1.5	0.5–3.0	1.4/0.8	0.7–2.6	1.5/0.7
Methylmaleic, mM	1.1–17.3	5.2/4.7	1.7–11.7	4.8/3.1	1.3–5.8	2.5/1.6	0.8–4.6	2.2/1.1
Phthalic, Ph	7.6–58.7	25.5/15.8	11.4–98.5	37.9/27.2	8.5–36.7	22.5/7.1	13.4–42.3	24.9/8.0
Isophthalic, iPh	0.5–6.2	1.9/1.6	0.5–4.2	1.8/1.2	BDL–2.6	0.7/0.6	0.3–1.1	0.8/0.3
Terephthalic, tPh	8.9–80.4	40.3/25.0	10.8–136	48.7/41.1	4.6–35.3	19.5/9.3	5.2–26.0	15.5/6.0
Malic, hC <sub>4</sub>	BDL–6.5	1.3/2.0	BDL–0.8	0.2/0.3	0.4–4.5	1.2/1.3	0.5–4.0	1.2/1.0
Oxomalonic, kC <sub>3</sub>	0.7–24.2	6.8/6.7	1.3–18.0	5.0/4.7	0.8–12.7	6.5/3.5	1.1–8.7	4.2/2.4
4-Oxopimelic, kC <sub>7</sub>	0.3–8.8	3.0/2.5	0.3–5.8	1.6/2.1	0.8–7.2	3.2/1.7	1.3–10.2	4.7/2.9
Total diacids	110–2580	763/701	113–1010	366/261	158–781	460/180	171–722	435/195
Oxocarboxylic acids								
Pyruvic, Pyr	2.0–56.0	15.6/14.9	2.6–68.7	13.5/17.6	4.5–21.7	11.5/5.3	3.6–19.3	10.9/6.0
Glyoxylic, ωC <sub>2</sub>	3.3–183	43.7/50.4	6.9–275	44.3/69.0	7.3–61.1	25.1/15.3	4.0–49.7	24.7/17.0
3-Oxopropanoic, ωC <sub>3</sub>	0.6–23.5	6.0/6.2	0.8–23.1	5.6/6.2	1.0–8.2	4.7/2.2	1.4–7.2	3.7/1.7
4-Oxobutanoic, ωC <sub>4</sub>	2.1–41.3	11.9/10.6	2.9–32.2	10.5/9.0	3.0–14.2	8.0/3.5	1.9–12.1	6.5/3.3
5-Oxopentanoic, ωC <sub>5</sub>	0.7–8.2	2.7/2.1	0.8–6.7	2.5/1.7	0.8–4.1	2.2/0.9	0.7–3.5	1.8/0.9
7-Oxoheptanoic, ωC <sub>7</sub>	0.5–7.0	3.0/2.0	0.4–5.0	1.9/1.6	1.0–4.8	3.1/1.0	1.6–6.9	3.5/1.5
8-Oxooctanoic, ωC <sub>8</sub>	0.4–12.3	4.0/3.3	0.2–9.2	2.4/2.7	0.4–6.6	3.0/1.4	2.4–9.2	5.2/2.4
9-Oxononanoic, ωC <sub>9</sub>	0.4–7.2	2.0/1.8	0.6–2.9	1.6/0.8	0.3–1.9	1.1/0.4	0.2–2.2	1.1/0.6
Total keto acids	9.5–282	73.3/76.3	13.5–353	68.7/91.0	14.5–95.0	47.3/24.6	15.1–82.8	46.5/27.0
α-Dicarbonyls								
Glyoxal, Gly	0.6–36.6	9.3/10.8	1.5–31.0	7.2/8.1	1.8–9.8	4.2/2.3	0.9–7.9	3.8/2.5
Methylglyoxal, MeGly	1.0–49.3	15.9/17.3	1.5–30.9	8.3/7.9	1.5–26.1	8.5/6.8	1.7–22.3	9.0/7.2
Total dicarbonyls	1.5–85.9	25.1/28.1	3.7–61.9	15.5/15.9	3.9–35.9	12.7/9.1	2.6–30.1	12.7/10.0

BDL: below detection limit, which is ca. 0.005 ng m<sup>-3</sup> for the target compounds.