

Appendix S1. Summary of the annual atmospheric rates of K deposition ($\text{kg ha}^{-1} \text{ yr}^{-1}$) observed in various studies.

| Site location | Atmospheric K deposition ($\text{kg ha}^{-1} \text{ yr}^{-1}$) | Reference |
|---|--|--|
| Quebec (Canada) | Total deposition 1.13 | Gélinas <i>et al.</i> (2000) |
| Ontario (Canada) | Total deposition 6.8 | Watmough & Dillon (2004) |
| Northeastern USA | Total deposition 12 | Friedland & Miller (1999) |
| Northeastern USA | Total deposition 0.86 | Lindberg <i>et al.</i> (1986) |
| North Carolina (USA) | Dry deposition 0.3 | Potter <i>et al.</i> (1991) |
| Seventeen sites in various areas of USA | Total deposition 0.13-2.24 | Watmough <i>et al.</i> (2005) |
| 237 sites across USA | Wet deposition 0.30 (0.022-3.0) | NADP network database (http://nadp.sws.uiuc.edu/) (2012) |
| Sao Paulo (Brazil) | Wet deposition 3.4 | Rocha <i>et al.</i> (2003) |
| Southern Brazil | Dry deposition 0.56-3.11 | Allen <i>et al.</i> (2010) |
| Southern Brazil | Wet deposition 18.6 | Calil <i>et al.</i> (2010) |
| Amsterdam Island (Indian Ocean) | Wet deposition 3 | Galloway & Gaudry (1984) |
| Central Serbia | Wet deposition 0.5-7.3 | Golobocanin <i>et al.</i> (2008) |
| Basque country (Spain) | Total deposition 6.3-7.5 | González-Arias <i>et al.</i> (2000) |
| Catalonia (Spain) | Total deposition 1.4 | Izquierdo & Avila (2012) |
| Norway | Wet deposition 2.3-3.3 | Jonard <i>et al.</i> (2012) |
| Kaunas (Lithuania) | Total deposition 4.3 | Juknys <i>et al.</i> (2007) |
| Kaunas (Lithuania) | Total deposition 5.1 | Zaltauskaitè & Jukyns (2007) |
| Sweden | Dry deposition 3.16 | Ferm & Hultberg (1999) |
| Northern Greece | Wet deposition 8.6 | Melidis <i>et al.</i> (2007) |
| Bologna (Italy) | Total deposition 1.8-3.6 | Morselli <i>et al.</i> (2008) |
| Newcastle (Australia) | Wet deposition 1.7 | Morrow <i>et al.</i> (2010) |
| Estonia | Total deposition | Pajuste <i>et al.</i> (2006) |

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| | 0.75-4.71 | |
| Various areas of Austria | Wet precipitation 0.3-1.6 | Puxbaum <i>et al.</i> (1998) |
| Southern Nigeria | Wet deposition 281 | Muoghalu & Oakhumen (2000) |
| Southern China | Wet deposition 7 | Huang <i>et al.</i> (2012) |
| Mumbai (India) | Wet deposition 9-26 | Prathibha <i>et al.</i> (2010) |
| Sydney (Australia) | Wet deposition 0.56 | Poor <i>et al.</i> (2006) |
| Sulawesi (Indonesia) | Wet deposition 0.07-1.1 | Köhler <i>et al.</i> (2012) |
| Southwestern Viti Levu (Fiji Islands) | Total deposition 2.3-4.9 | Waterloo <i>et al.</i> (1997) |