

Appendix B

Abbreviations

Elements and compounds

| | | |
|------------------------------|---|----------------------------|
| C | = | carbon |
| C:N | = | carbon-to-nitrogen (ratio) |
| CO ₂ | = | carbon dioxide |
| N | = | nitrogen |
| N ₂ | = | nitrogen gas |
| N ₂ O | = | nitrous oxide |
| NH ₃ | = | ammonia |
| NH ₄ ⁺ | = | ammonium |
| NO ₂ ⁻ | = | nitrite |
| NO ₃ ⁻ | = | nitrate |
| O | = | oxygen |
| O ₂ | = | oxygen gas |
| ON | = | organic nitrogen |
| R | = | organic compound |

Units of measurement

| | | |
|-----|---|------------------|
| ac | = | acre |
| bu | = | bushel |
| cm | = | centimeter |
| dt | = | dry ton |
| g | = | gram |
| ha | = | hectare |
| kg | = | kilogram |
| lb | = | pound |
| mg | = | milligram |
| ppm | = | part per million |
| t | = | ton |
| yr | = | year |

Variables in equations

| | | |
|----------------------------|---|--|
| AN | = | Percent NH_4^+ in biosolids as applied (%) |
| B_{app} | = | Biosolids application rate (dt/ac) |
| BD | = | Soil bulk density at the site (g/cm^3) |
| B_i | = | Biosolids application rate "i" years ago (dt/ac) |
| c_{bd} | = | 2.72; conversion factor for standard bulk density ($1 \text{ g}/\text{cm}^3$) and standard soil depth (12 in.) |
| D | = | Loss of mineral N by denitrification (%) |
| e_f | = | Crop N uptake efficiency factor (0-1) |
| K_0 | = | Mineralization rate of ON during the year of application (%) |
| K_i | = | Mineralization rate of ON "i" years after the year of application (%) |
| N_{conc} | = | Crop N concentration, dry matter basis (%) |
| N_{credits} | = | Credits for N from other sources (lb/ac) |
| NN | = | Percent NO_3^- in biosolids as applied (%) |
| N_{prev} | = | Total mineralized N from biosolids applications in previous years (lb/ac) |
| N_{req} | = | N supply required by plants and soil (lb/ac) |
| N_{soilmin} | = | Estimated annual soil ON mineralized (lb/ac) |
| N_{uptot} | = | Total above-ground crop N uptake (lb/ac) |
| N_{upunit} | = | N uptake by crop per unit of yield (bushel, ton, etc.) (lb/unit yield) |
| ON_0 | = | Percent ON in biosolids as applied (%) |
| ON_i | = | Percent N in biosolids "i" years ago (%) |
| SI | = | N immobilization in soil from initial biosolids application (lb/ac) |
| SON_{yr} | = | Soil ON mineralized per year (0-12 in. depth) (%) |
| TKN_{soil} | = | Soil total (or organic) N (mg/kg) |
| T_{rem} | = | Decimal fraction of year remaining (0-1) |
| V | = | Loss of NH_3 by volatilization (%) |
| Y_h | = | Yield of harvested above-ground portion of crop (bushels, etc.) |
| Y_{lbac} | = | Crop yield (lb/ac) |
| Y_m | = | Crop moisture content (%) |
| Y_{res} | = | Yield of unharvested above-ground crop residue (lb/ac) |