APPENDIX

B

Conversion Factors

Area

1 hectare (ha) = 10,000 m^2
1 hectare (ha) = 2.471 acres
1 acre = 43,560 ft^2

Volume

1 liter (L) = 10^{-3} m^3
1 liter (L) = 0.2642 gallons
1 cubic meter (m^3) = 35.31 cubic feet
1 cubic meter = 264.2 gallons
1 barrel (bbl) = 42 gallons
1 bushel = 1.244 ft^3

1 bushel corn = 25.4 kg
1 bushel wheat = 27.2 kg
1 bushel soybean = 27.2 kg

Weight

1 kg = 2.205 lb
1 ton (metric) = 1000 kg
1 ton (English) = 2000 lb
1 ton (metric) = 1.1 ton (English)
1 ton per day (tpd) = 0.015 kg per sec (kg/s)

Biorenewable Resources: Engineering New Products from Agriculture, Second Edition. Robert C. Brown and Tristan R. Brown.

Energy

1 joule (J) = 1 kg m^2/s^2
1 kilojoule (kJ) = 10^3 J
1 megajoule (MJ) = 10^6 J
1 gigajoule (GJ) = 10^9 J
1 terajoule (TJ) = 10^{12} J
1 petajoule (PJ) = 10^{15} J
1 exajoule (EJ) = 10^{18} J

1 British thermal unit (Btu) = 1054 J
1 thousand Btu (MBtu) = 10^3 Btu
1 million Btu (MMBt) = 10^6 Btu
1 quadrillion Btu (quad) = 10^{15} Btu
1 quad = 1054×10^{15} J (approximately 1 EJ)

1 toe (metric ton oil equivalent)
= 7.4 barrels of crude oil in primary energy
= 7.8 barrels in total final consumption
= 1270 m^3 of natural gas
= 2.3 metric ton of coal

Power

1 kilowatt (kW) = 1 kJ/s
1 megawatt (MW) = 1000 kW
1 MW = 3.415 MMBtu/hr
1 horsepower (hp) = 2546 Btu/hr
1 horsepower (hp) = 550 ft-lb/s