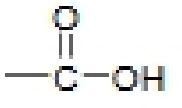
Biorenewable Resources: Engineering New Products from Agriculture
Errata
September 15, 2004

p. 21 Solution to example problem that starts on previous page should be -414,770 instead of -41,477 (occurs in two places in example).

p. 44 The illustration for the carboxyl group should appear as:



carboxyl group

p. 51 Illustration of D-glucose and L-glucose should be titled "enantiomers are mirror images of one another."

p. 57 Revision to problem 2.3: "On a dry basis, wood chips, with an approximate molecular composition of $CH_{1.4}O_{0.66}$, has a nominal enthalpy of reaction of -20 MJ/kg at 25°C. Adiabatic flame temperature is defined as the temperature achieved by combustion products if Q_{CV} and W_{CV} in Eq. 2.11 are set to zero and reactants are assumed to be at 25°C. For combustion in stoichiometric oxygen (ϕ= 1):"

p. 75 Revision to problem 3.7: "(a) Coal selling at $1/MMBtu (assume that coal is 75 wt-% carbon and has higher heating value of 12,000 Btu/lb)."
Revision to problem 3.7: "(c) Petroleum selling at $25/barrel (assume that petroleum is 85 wt-% carbon and has higher heating value of 19,000 Btu/lb)."

p. 115 Section 5.2.2.4, line 13: Change "Rankine cycle efficiency" to "Brayton cycle efficiency."

p. 120 Line 25: replace "non-porous" with "porous" in describing ceramic material

p. 123 Table 5.3, column 1: Replace "Boiling point range" with "Boiling point*"and add footnote "* Seasonally adjusted for cold and hot weather operation."

p. 124 Revision of lines 11-14: "For example, as Table 5.3 illustrates, ethanol has a higher latent heat of vaporization compared to gasoline. This promotes cooler operation of the engine, allowing higher densities of fuel and air to be burned in the engine."

p. 162 Revision of line 27: "known as *dextrin*"

p. 163 Correction at line 3: change "15 wt-%" to "5 wt-%."

p. 165 Revise 2nd paragraph of Section 7.2.3: "Although many biorenewable resources are cheaper than petroleum, virtually all commodity organic chemicals are currently produced from petroleum because processing costs are generally much cheaper for the conversion of hydrocarbons to products."

p. 175 The separator below the cellulose hydrolysis reaction vessel has a product stream mislabeled as "C_5 sugars." This should be "C_6 sugars."

p. 213 Line 5: "marine" should be "aquatic."

p. 213 Paragraph 2, Line 4-5: Replace " peroxyacetal nitrate" with "peroxyacetal nitrate ($C_2H_3O_5N$)"

p. 231 Table 10.1, Modify headings: "Production (10^6 Mg/yr)" and "Price (1994 $/Mg)" Table 10.1, first six entries under "Price" column need to be multiplied by 1000; thus: corn entry changed to 90; potato entry changed to 160; sorghum, beet molasses, and cane molasses entries all changed to 90; and sugar cane entry changed to 30.

p. 235 Table 10.5, Addition of significant figures to bottom half of table, as shown here:

			Unit Cost ($/ha)				
Pesticides			Corn	Soybeans	Alfalfa	Cool-season grasses	SRWC**
Herbicide			76.60	76.60	28.40	10.50	85.00
Insecticide			34.59	0	0	0	see note

p. 246 Example problem: Change "$4557" to "$3100" in two locations (line 5 and equation)

p. 247 Example problem: Change "$4557" to "$3100" and "$4.6 million" to "$3.1 million" in the equation.

p. 248 Paragraph 2: change "$2007" to "$350" in two locations (line 1 and the equation) and change "$95,100" to "$16,590" in the equation.

p. 250 Example: Change "$4.56 million" to "$3.1 million." Also correct three equations to read:

$$C_M = MMF \times C_p = 0.19 \times \$3,100,000 = \$589,000$$

$$C_L = LMF \times (C_p + C_M) = 0.26 \times (\$3,100,000 + \$589,000) = \$959,140$$

$$C_D = C_p + C_M + C_L = \$3,100,000 + \$589,000 + \$959,140 = \$4,648,140$$

p. 263 In the "Biodiesel from Vegetable Oil" subsection change "($3.2 million liters per year)" to "($2.9 million liters per year)."

p. 264 Problem 10.1, modify last sentence: "If the yield is 40 bushels per acre, what are the fixed and variable costs ($/bu) associated with the use of machinery in this operation?"

p. 265 Problem 10.6: Change "$3.5 million per year" to "$0.35 million per year" and change "$1.5 million per year" to "$0.15 million per year."