

Sprinkle and Trickle Irrigation Text Errata

September 1, 2004

- p. 17: Second line add comma between wetted and may to read: --- “but lower leaves, if wetter, may” -----.
- p. 32: Equation 3.1. In definitions of terms, change “ W_A ” to “ W_a ”; and for depth Z change metric dimension from “mm” to “m”.
- p. 38: In full sentence above Table 3.5, pluralize value to read: ---“the EC_e values presented in Table 3.5” ----.
- p. 39 End of fifth line from top should be changed from $LR < 0.1$ to $LR > 0.1$.
- p. 41: Add an another “e” in Hargr(e)aves in second line and in References.
- p. 46: Third line from bottom of third paragraph, change “as” to “an” to read: --- “making too sharp an “S” turn”----.
- p. 65: In item 6, change “form” to “from”.
- p. 70: Fig. 5.6. Two errors: a) the wind speed should be “5 m/s” not “1 m/s”; and b) the sprinkler location “0” on the right hand (vertical) scale is not offset to reflect wind, it should be shifted to where the lower “6” is located.
- p. 83: Table 5.4. Change last number in first column from “(0.40)” to “(0.15)”.
- p. 91: Fig. 6.2. Replace “Pivot” with “Pitot” in figure title.
- p. 99: Table 6.2. For $CU = 94\%$ and $pa = 80\%$ the value given should be “94”.
- p. 131: Sample Calculation 7.1. In last line of GIVEN: change “5-ft” to “50-ft”.
- p.134: The value for the constant “ K ” below Equation 8.1 for metric units would be slightly more accurate if changed from 1.212 to 1.217×10^{12} .
- p. 135: On third line above Equation (8.2), change “13-m” to “13-mm”.
- p.138: The value for the constant “ K ” below Equation 8.7a for metric units would be slightly more accurate if changed from 7.89 to 7.88×10^7 .
- p. 141: In the Flow rate column for (gpm): the 6.0 should be followed by “6.1” rather than “0.1”.

p. 146: Two typos in the text one line above and two lines below Equation (8.9a), change “form” to “from”.

p. 147: Sample Calculation 8.1. At end of last line, change “7.07” to “70.7”.

p. 164: Table 8.12. The heading for the first column should simply be “Method”, strike out “(or size for C-D)”.

p. 167: Equation 8.19. Change “Table 8.11” to “Table 8.9” in definition for EAE(e).

p. 170: Fig. 8.8. The long FIXED PLUS OPERATING COSTS arrow should have had its arrowhead at and terminated at the point where it crossed the solid line.

p. 196: In last line, change “ H_a ” to “ P_a ”.

p. 197: Fig. 9.7. In the left hand caption unit line, change “5 = 5%” to “S = 5%”.

p. 197: Sample Calculation 9.8. In third line of CALCULATIONS: change “two-end outlets” to “two end-outlets”.

p. 209: Sample Calculation 10.2. In the line above the fourth equation from the bottom of the page, the sentence should read, “The final h_{f2} with all 6-in. pipe is:”

p. 213: Equation 10.5. Change “ L_s ” to “ L_s ”.

p. 218: Sample Calculation 10.5. In GIVEN: under Economic relationships: change “ C_p ” to “ C_p ”.

p. 219: Sample Calculation 10.5. In CALCULATION: Step 2, change the “0.0001” in the equation to “0.001”.

p. 220: Sample Calculation 10.5. Clarification, in calculating L_4 , $J_s = J_4 = 3.17$ m/100m and $J_b = J_6 = 0.52$ m/100m were interpolated from Table 8.5.

p. 222: Change “g = accumulation...” to “g = acceleration”.

p. 223: Table 11.2. Change the bottom Equation for “sudden contractions” to:

$$K_r = 0.7 \left[1 - (D_r)^2 \right]^2$$

p. 226: Sample Calculation 11.1. In CALCULATIONS: in first line change “ K ” to “ K_r ” and in fifth line from bottom, change “interests” to “intersects”.

p. 230: The fifth text line should read: “The static head ----- and C is:”

p. 231: Equation 11.4a. Change the “ Q_g ” in the middle term on the right side to “ Q_s ”.

- p. 242: Near bottom, change “H = 1197 ft” to “H = 197 ft”
- p. 256: Table 12.2. Change caption to read “.hp / 100 ft...” rather than “.hp / 1000 ft...”
- p. 292: Below Equation 13.4. In the definition of \mathbf{T} , change “180° \$ \mathbf{T} # 360°” to “180° # \mathbf{T} # 360°”.
- p. 313: Table 14.1. Change the values in the “Irrigation interval” columns for both 5 and 6 days for Pasture - Peak from “0.02” to “1.02”.
- p. 322: In first line, change “(0.3 in. / hr)” to “(0.4 in. / hr)”.
- p. 324: Table 14.2. This table is out of date. The Irrigation Association’s Center Pivot manual has an updated equivalent.
- p. 343: Sample Calculation 14.6. Change the subscript of R' from “ R'_e ” to “ R'_n ” in two places a) in the sixth line from top of page; and b) in the line above the last equation.
- p. 361: Error in four places, should read “...for the 168-mm (6 5/8-in.)...” (i.e., change all occurrences of “6-in.” to “6 5/8-in.”).
- p. 362: Error in eight places, change occurrence of “6-in.” to “6 5/8-in.”.
- p. 363: Error in one place, change occurrence of “6-in.” to “6 5/8-in.”.
- p. 363: Second equation should read:
- $$(h_f - h_{fj})_6 = (h_f - h_{fj})_8 J_6 / J_8 = 1.16 \times 5.97 / 2.31 = 3.0 \text{ m}$$
- In other words, change the “+” separating h_f and h_{fj} to a “-“
- Note that in the equation for $(h_f)_{8,6}$ that one should also subtract out for the h_f due to the end gun; however, this turns out to be small (0.04 m).
- p. 395: In the line below Equation (15.5), change “*LET*” to “LET” and “*indix*” “index”.
- p. 407: In eleventh line from bottom, change “drop” to “crop”; and in sixth line from bottom, change “precipitaton” to “precipitation”.
- p. 436: Fig. 17.5. In Part C, add value so ($P_w \cong 50\%$).
- p. 443: Table 18.2. In first column change “Very find sand” to “Very fine sand”.

p. 456: Sample Calculation 19.1. In first equation “w” under CALCULATIONS: change the “.15” to “1.5”, but the calculation is OK.

p. 457: Item 5 should read: “A 100-ml graduated cylinder;”

p. 462: Equation 19.3, 19.4, and 19.5. A “P_d” should be added to the denominator to allow for applications to sparse plantings. As is, it applies only to dense mature orchards. Otherwise, for sparse plantings, the canopy area should be used rather than S_p x S_r, but this could become confusing. Therefore, the denominators should read: “S_p x S_r x P_d/100”.

p. 492: At the end of last bullet near top of page, change “(1 + v)” to “(1 - v)”.

p. 496: Fig. 20.8. The three curves should be labeled from top to bottom: “LARGE ON-LINE”; “STANDARD ON-LINE”; AND “SMALL ON-LINE”.

p. 497: Errors in two places about mid-page, change “L / s” to “L / h”.

p. 512: In fourth line from top, change “d^b” to “d_n”.

p. 512 The G calculated using Equation 19.16a be changed from 9.3 to 93.3 gal/day.

p. 513: In line above Equation 20.13a’, change “n_p” to “N_p”.

p. 516: Near bottom of page in reference to “*Seasonal Irrigation Efficiency*” should refer to Table 19.4 (rather than 19.3).

p. 521: In the second equation on the page for using Equation 19.11, change “[0.1 + (75)^{0.5}]” to “[0.1 (75)^{0.5}]”, but calculation is OK.

p. 521: In line above last equation, change “O^b” to “O_t”.

p. 535: Comment: rearranged, Equation 22.11 becomes:

$$\Delta H_c = \frac{L(1-F)}{100} S^{a/b} J^{-1/b}$$

(see Equation 23.14b). This form is simpler and it might be more didactic to present both forms. (S is absolute slope).

p. 537: Fig. 22.5. Insert arrows to show where “Av. h_{fp}” refers to (left-hand side, middle of figure). “Av. h_{fp}” should refer to the vertical distance between the horizontal dashed line and the lower end of the h_{fp} “curve” (i.e., the vertical height of the hatched area that is beneath the dashed line).

p. 538: Equation 22.19, 22.20. Add “ $-x/L_p \Delta E_p$ ” to each equation so that they read as:

$$(H)_d = h_{fp} \left(\frac{x}{L_p} \right)^{2.75} + \Delta H_c + H'_n - \frac{x}{L_p} \Delta E_p \quad (22.19)$$

$$(H)_u = h_{fp} \left(1 - \frac{x}{L_p} \right)^{2.75} + \left(1 - \frac{x}{L_p} \right) \Delta E_p + H'_n \quad (22.20)$$

p. 549: Equation 22.17. Change “ $(y - 0.5)$ ” to “ $(Y - 0.5)$ ”.

p. 566: For clarification the bottom paragraph should read:

“**Basic Equations.** The elevation (*relative to the datum at the minimum pressure head but at the end of the pipe*) of the hydraulic grade at any point x ”

Furthermore, in the legend following Equation 23.14a, change explanation for H_x to: “ H_x = hydraulic head (*minimum*) at point x along a pipe-friction curve that is tangent to the HGL, m (ft). (*this is contrasted against H_x on page 577, which is a friction loss*)”

p. 567: Equation 23.14b. Change the exponent on (x/L) to “ a ” instead of “ $1/a$ ”.

p. 570: The numerical values in the second equation should be: $640/177 = 3.6$ (not $640/17$).

p. 581: Change referenced publication in next to last line to read: “*Trickle Irrigation for Crop Production*”.

p. 598: Table 24.6. An “=” sign is missing in the equation in the middle of the table, it should read: “ $(H_m + H_{fe}) = (50.2 + 7.4) =$ ”.