$e_a$ = vapor pressure of air = $(e_{max} + e_{min})/2$, mb
$e_d$ = vapor pressure at dewpoint temperature $T_d$ (for practical purposes $T_d = T_{min}$), mb
$u_2$ = wind speed at a height of 2 meters, km/day
$\gamma$ = psychrometric constant = 0.66 mb/°C
$T_{avg} = (T_{max} + T_{min})/2$, °C
$e_{max}$ = maximum vapor pressure of air during a day, mb
$e_{min}$ = minimum vapor pressure of air during a day, mb
$T_{max}$ = maximum daily temperature, °C
$T_{min}$ = minimum daily temperature, °C.

From Bosen (1960), saturated air vapor pressure as a function of air temperature, $e^*(T)$, and the slope of the saturated vapor pressure–temperature function, $\Delta$, can be computed as follows:

$$e^*(T) = 33.8639\ [(0.00738T + 0.8072)^8 - 0.000019\ (1.8T + 48) + 0.001316] \quad (4)$$

$$\Delta = 33.8639\ [0.05904\ (0.00738T + 0.8072)^7 - 0.0000342] \quad (5)$$

Values of saturated $e$ vs. $T$ and $\Delta/(\Delta + \gamma)$ vs. $T$ are presented by Jensen (1974). This equation requires daily values of maximum and minimum temperatures, net radiation, and wind speed. Daily temperature data are available for numerous locations in Florida and are relatively easy to obtain. Net radiation values are not available and must be estimated from total incoming solar radiation, $R_s$, and the outgoing thermal or long wave radiation, $R_b$.

Penman (1948) proposed a relationship of the form

$$R_n = (1 - \alpha)\ R_s - R_b \quad (6)$$

where $R_n$ = net radiation in cal/cm$^2$ · day
$R_s$ = total incoming solar radiation, cal/cm$^2$ · day
$R_b$ = net outgoing thermal or long wave radiation
$\alpha$ = albedo or reflectivity of surface for $R_s$.

Generally accepted values for $\alpha$ are:

$\alpha$ = 0.05 for water surfaces
$\alpha$ = 0.15 for bare soil surfaces
$\alpha$ = 0.23 for green vegetated surfaces.

Penman (1948) proposed a relationship for $R_b$ of the form

$$R_b = \sigma T^4 (0.56 - 0.08\sqrt{e_d})(1.42\ R_s/R_{so} - 0.42) \quad (7)$$

where $\sigma$ = Stefan-Boltzmann constant ($11.71 \times 10^{-8}$ cal/cm$^2$ · day/°K)
$T$ = average air temperature in °K (°C + 273)
$R_{so}$ = total daily cloudless sky radiation (values of $R_{so}$ for Florida latitudes are given in Table 1).