

## TECHNICAL NOTE:

# EFFECT OF PAN DIAMETER ON EVAPORATION AND REFERENCE CROP EVAPOTRANSPIRATION

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**ABSTRACT.** *The effect of pan size on evaporation rates, pan coefficient, and reference crop evapotranspiration is not clearly understood. Evaporation rates (mm/day) were therefore measured using the standard class A pan, a half-standard pan (half the diameter of the class A pan), and quarter-standard pan between February 1 and April 30, 2000, at St. Augustine, Trinidad. Evaporation rates were highest in the quarter-standard pan, followed by the half-standard and then the standard pan. Heat transfer analysis showed that while the total heat absorbed by the water in the pans increased, the resulting total heat absorbed per surface area decreased with increasing pan diameter, thereby explaining the trend in the measured evaporation rates. Measured evaporation rates from each pan were correlated with reference crop evapotranspiration rates predicted with the Penman-Monteith formula. This article demonstrates that pans smaller than the class A could be used to measure evaporation rates, provided that calibrations are carried out to determine the pan coefficients relating measured evaporation rates to evapotranspiration rates. This would result in substantial cost reductions in situations where a dense evaporation network is needed.*

**Keywords.** *Evaporation, Evapotranspiration, Pan size.*