

Title Comparison of Seven Equilibrium Moisture Content Equations for some Medicinal and Aromatic Plants

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### **Abstract**

In this research, seven equilibrium moisture content (EMC) and equilibrium relative humidity (ERH) equations (modified Henderson, Chung–Pfof, Modified Halsey, Henderson, Chen–Clayton, Iglesias–Chirife and modified Oswin) are compared on their ability to fit data for some medicinal and aromatic plants. Thirteen data sets comprising 13 plants are used. Comparisons are based on standard error of estimate, coefficient of determination, residual sum of square and residual plots. Both the modified Halsey and the modified Oswin equations were found as the most versatile models to accurately describe the equilibrium moisture content and equilibrium relative humidity (EMC/ERH) relationships for medicinal and aromatic plants. The modified Henderson equation is a good model for fennel and cinnamon. The Chung–Pfof equation is suitable for muscat, coriander, ginger and cinnamon. The Iglesias–Chirife, Henderson and Chen–Clayton equations are among the least successful models for medicinal and aromatic plants, respectively.