



CHAPTER 3

Background information and research

C. PSYGROMETRY

Psychrometry concerns the determination of heat and water vapour properties of the air. When water is exposed to air there exists a state of equilibrium, in which water exists in both vapour and liquid form. Water at a certain energy level can therefore escape to the gas phase, or the opposite can happen and it can change to liquid. The equilibrium is largely determined by the temperature: the higher the temperature, the greater the chance of the gas phase, and vice versa. The relationship between these variables is represented graphically by a psychrometric chart/graph. The chart is relevant for post-harvest purposes because plant products transpire continuously and because the environment in which they exist must be manipulated to ensure quality. The psychrometric chart can be used to quantify the drying-out effect of air, either in the orchard, pack store or cool room. In this manner it can be proved that exposure of stonefruit for one hour to conditions of 30°C and 30% RH has an equivalent drying out potential to that of exposure of the same fruit for 60h at a temperature of 0°C and 95% RH. It emphasises the urgency with which effective cooling should be approached. For further information on this contact Marius Huysamer (US).