

- The equilibrium moisture content (EMC) of a hygroscopic material surrounded at least partially by air is the moisture content at which the material is neither gaining nor losing moisture.
- The EMC of a material is important **because of its relationship to storage, handling, and processing.**
- The value of the EMC depends on the material and the relative humidity and temperature of the air with which it is in contact.
- The equilibrium vapour pressure above a food is determined not only by the temperature but also by the water content of the food, by the way in which the water is bound in the food, and by the presence of any constituents soluble in water.

- The equilibrium curves obtained vary with different types of foodstuffs.
- This is the ratio of the partial pressure of water in the food to the vapour pressure of water at the same temperature.

- The point which shifts to the Decreasing drying period from the Constant drying period is called the Critical moisture content W_c .
- W_f = Free moisture content
- W_i = Initial moisture content
- W_e = Equilibrium moisture content

- $W_f = W_i - W_e$
- The rate of the water (liquid) which can carry out evaporation removal to the Equilibrium moisture content W_e is called the Free moisture content W_f .

- The e.m.c. is important as drying may be carried out unnecessarily resulting in a reduction in the capacity of a given drying system, a higher cost of drying, and an economic loss.
- The difference in e.m.c. values for a particular product are often due to variations in measuring techniques and grain varieties. An increase in temperature decreases the e.m.c.
- There is also a difference in adsorption and desorption e.m.c. curves (desorption values are higher) and unless these are all stated an e.m.c. curve is rather empirical.

