

Exercise: Adsorption Isotherm in a food product

A food sample is subjected to measurements of relative humidity (RH) and equilibrium moisture content (EMC) at constant temperature. The following data were obtained for the product:

Relative Humidity (%)	Equilibrium Moisture Content (%) (EMC)
20	5
40	7.5
60	10
80	15
90	20

1. Plot the adsorption isotherm curve (EMC as a function of RH).
2. Explain the phenomenon of water adsorption in foods and its importance for preservation.
3. Based on the results, at what moisture level is the product likely to start deteriorating due to microbial growth? Justify your answer.