

WATER ACTIVITY

Knowledge of water activity (A_w) is essential in formulating a product. In practice, “water activity” is a measure of the “free” or “unbound” water in a food sample. A technical definition of water activity is the percent equilibrium relative humidity (%ERH) divided by 100. It is important to understand water activity when formulating products because it is closely related to product shelf life. By measuring A_w , it is possible to predict whether a microorganism is a potential source of spoilage. In addition to influencing microbial spoilage, A_w can play a significant role in determining the activity of enzymes and stability of vitamins in foods, and can have a major impact on food color, texture, taste, and aroma. There are a variety of different techniques that can be utilized to measuring water activity. Ralston Analytical Labs measures A_w using an instrument that employs a fan to speed up equilibrium humidity conditions and measures dew point condensation on a chilled mirror. Water activities can be analyzed within 15 minutes, over a wide range of A_w (0.3 to 1.00) and product types.
