K-STATE Research and Extension

Using a Digital Thermometer for Food Products

Extension University of Missouri

Food Safety Fact Sheet

A digital thermometer is an electronic device used to measure temperature accurately and display the reading in a digital format. Unlike traditional dial thermometers, digital thermometers use sensors such as thermistors, thermocouples, or infrared sensors to detect temperature changes and convert them into a readable digital output on a liquid-crystal display (LCD) screen. Digital thermometers are commonly used in the food industry due to their precision, ease of use, and quick response time.

In the food industry, digital thermometers play a vital role in ensuring food safety and quality by accurately monitoring cooking, storage, and processing temperatures. Usage of these thermometers helps in upholding food industry and regulatory standards.

Digital food thermometers measure temperatures at the tip of the probe and provide quick readings. They come in a simple handheld design and may include features like the ability to leave the probe in the food during cooking. Some digital thermometers sound an alert when a desired temperature is reached.

Digital and dial metal stem thermometers are the most common thermometers. Every food thermometer should be able to measure within a range of temperatures such as -58°F to 572°F (-50°C to 300°C) with an accuracy of ±2°F. When purchasing a digital thermometer look for the National Sanitation Foundation (NSF) certification mark; it means that the product complies with all standard requirements.

Parts of Digital Thermometer

A digital food thermometer comprises a metal probe with a temperature sensor at the tip, an LCD digital display, and a body/handle that is the main part of the thermometer and encompasses the electronics. It features control buttons for power, reset/calibration, and mode selection (Celsius/Fahrenheit). The battery compartment powers the device, and a protective sheath covers the probe when not in use. (Figure 1.)

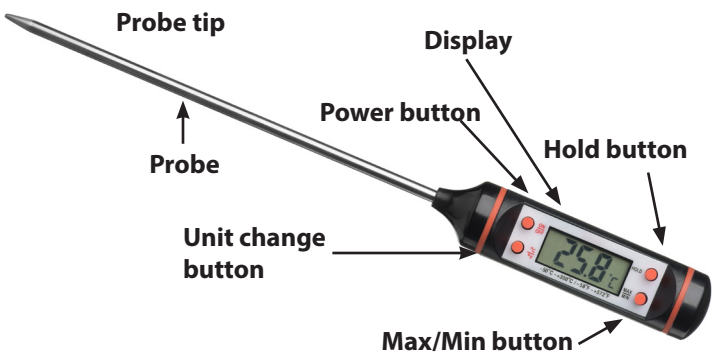

Figure 1. Parts of a digital thermometer.

Using a digital thermometer to measure hot liquid

Calibration of Digital Thermometer

The ice bath method is widely used to calibrate a digital thermometer. To calibrate, fill a glass with ice and add cold water until it's full, then stir well to ensure the water is thoroughly chilled. Insert the thermometer probe into the ice water, making sure it doesn't touch the sides or bottom of the glass. Wait until the reading stabilizes, which should take about 30 seconds or less. The thermometer should read 32°F (0°C). If it doesn't, adjust the temperature reading using the calibration button or reset feature, following the manufacturer's instructions.

See the link here for detailed information on thermometer calibration: *https://bookstore.ksre.ksu.edu/pubs/thermometer-calibration-guide_MF2440.pdf*

References

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