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Be Sure Your Thermometer is Ready for Use

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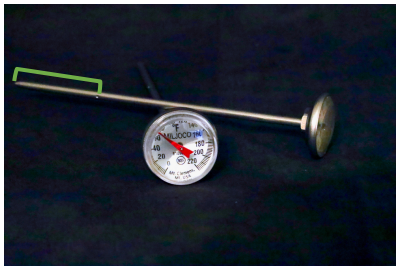
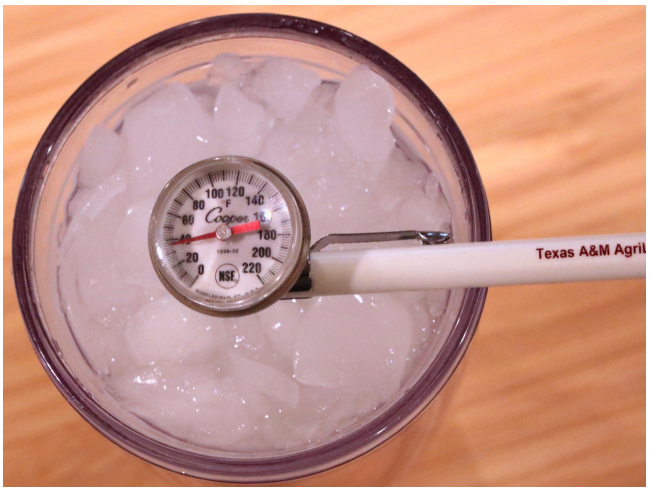
The use of a thermometer while cooking is sometimes an afterthought, however, an accurately calibrated thermometer is an essential tool that every kitchen should employ to assess the safety of food products while also assuring the most desirable eating quality. There are many types of food thermometers. Some are very specific in their intended use, but most are useful throughout food preparation. The keys to success deal more with being familiar with the features of the thermometer, how to use the thermometer on a specific product and having confidence in the measurements taken. There are many types of thermometers that can give you an accurate temperature measurement. Some basic differences in home thermometers are dial (bi-metallic) versus digital (electronic). Different types have varying sensor locations and require more or less time to obtain an accurate measurement. Basically, as you increase the accuracy and speed or select a thermometer that reads at or near the tip, the purchase price is generally higher.



Bi-metallic stem thermometers are inexpensive and most commonly found in many stores. They are somewhat slower in terms of speed of determining temperature, but if used appropriately and calibrated frequently, they can be a very useful tool. When used correctly. Bi-metallic thermometers measure temperature over a length of the stem (usually 1-1.5 inches), so the entire length used to measure temperature must be in the food to gain the most accurate measurement. There is a small indention or “dimple” in the stem to indicate the top of the area that needs to be inserted. Some thermometers are designed to be left in the food while cooking, while most are designed for spot checking only, so check with the manufacturer for the specifics on your model.

Thermometers using thermistor technology are typically more accurate than dial thermometers. They use a ceramic semiconductor in the tip to record the temperature, so they are somewhat more versatile than dial bi-metallic models. They also will give a digital temperature reading in a few seconds. Their cost is higher and are typically battery powered.

Digital thermometers that actually have thermocouples inside the probe are arguably the fastest and typically highly accurate. These thermometers have the sensor located at a small tip of the probe. This allows for the thermometers to be almost instant read with a high degree of accuracy, even on a thin product that is more difficult to measure with thermometers that need to have more of the stem inserted to read accurately.



There are several methods employed to calibrate a thermometer, but there are two relatively simple methods that can easily be done at home. They involve ice and boiling water. For the ice water method, fill a glass or other tall container full of ice (crushed ice is preferred). Next, add water until the water nearly reaches the top of the ice and stir the mixture. Insert the thermometer into the center of the slurry (being sure the tip is not below the ice on the bottom and stir slowly. The thermometer should read 32°F. If it does not, adjust a dial thermometer by turning the dial while securing the nut or the stem (on the back of the dial) until the needle is pointing to 32°F. If the thermometer is a digital/electronic thermometer, consult the manufacturer specifications to determine whether the thermometer is reading within tolerance specifications. If it is, do not adjust. If it is not, read the manufacturer specifications to determine whether the thermometer can be manually adjusted or if it needs to be sent in for adjustment or discarded. It is not recommended to use a thermometer that is not accurately calibrated. Do not merely adjust the temperature by the amount the thermometer is "off" as uncalibrated thermometers are likely to ready differently as they heat and cool to different temperatures. A second method involves heating a pan of water to boiling. Be sure that the water is deep enough to submerge the entire area of the sensor area of the thermometer. At sea level, the thermometer should read 212°F. If it does not, follow the instructions above for the specific type thermometer, being careful not to be burned by the steam emitting from the boiling water. Using a thermometer sleeve or other device to suspend the thermometer will help. If you are not at sea level, you will need to adjust the target temperature to your elevation (https://www.thermoworks.com/bpcalc).

Calibrated thermometers have an accuracy range from a fraction of a degree to several degrees, so it is important to check the calibration of all thermometers routinely. Starting the grilling season off every year is a great time to remember to get all your gear checked out and ready – even your thermometer!