University of California Cooperative Extension Master Food Preserver

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Preserve Today, Relish Tomorrow

"Gel Point" Explained

As the preserving season progresses it is important that you understand what gel point means and why you need to know about it.

Gel Point comes into play when you are making jams without pectin (cook-down method), soft spreads, preserves, syrups and candies.

Spoon or Sheet Test

There are three tests you can perform to ensure your soft spread made without the use of commercial pectin has reached the gel stage.

Temperature Test Cook the soft spread until it reaches a temperature of 220°F, or 8°F above the boiling point of water (this is important if you have to adjust for altitude). Measure the temperature of soft spreads with a candy or jelly thermometer. Always insert the thermometer vertically into the soft spread and ensure that it does not contact the surface of the pot.

Let's go back to that gel point temperature for a minute. It is important that you know at what temperature water boils in your particular area. Before you start a project involving gel point, heat some water on the stove ***to a rolling boil***, insert a thermometer and note the temperature. Then, when you make your product add 8 degrees F. to the boiling temperature at your elevation.

For example: water boils at 204 degrees at my house. The gel point will then be 204 + 8 = 212 degrees F.

Got it? Ok!

So, that raises another question. If water boils at 204F at my house how the heck do I get it to boil at 212F? The answer is all about the sugar.

Now for the science. What you are doing is driving water out of the syrup (or jam) through evaporation, leaving behind molten sugar as an ever increasing percentage of the mixture as the water percentage diminishes. This makes the hotter than boiling water temperatures possible, and is also a gauge of both how cooked and how thick the syrup (or jam) is, as well as what the nature of the molten sugar will be when cooled.

Sheet Test Dip a cold metal spoon into the boiling soft spread. Lift the spoon and hold it horizontally with edge down so that the syrup runs off the edge. As the mixture cooks, the drops will become heavier and will drop off the spoon separately but two at a time. When the two drops join together and "sheet" off the spoon, the gel stage haven reached.

Refrigerator Test Chill two or three small saucers in the freezer. Place a teaspoonful of soft spread on the chilled saucer and place in the freezer for 1 minute. Remove the saucer from the freezer and push the edge of the spread with your finger. A mixture that has reached the gel stage will be set, and the surface will wrinkle when the edge is pushed. Note: To prevent over-cooking or scorching, remove the soft spread from the heat before performing this test.

If the test you performed shows that the gel stage has not been reached, return the mixture to the heat to cook for a few minutes longer, then retest the soft spread.

Resources for tested recipes:

National Center for Home Food Preservation: http://nchfp.uga.edu/
Complete Guide to Home Canning. 2015. http://nchfp.uga.edu//publications/publications_usda.html
Also available in paper copy from Purdue Extension (online store is located at https://mdc.itap.purdue.edu/item.asp?item_number=AIG-539)
Canning Vegetables, 2012. Publication 8072. University of California Ag & Natural Resources, http://anrcatalog.ucanr.edu.
So Easy to Preserve, Sixth Edition. 2016. Bulletin 989. Cooperative Extension/University of Georgia, Athens
Ball Blue Book Guide to Preserving. 2020. Newell Corporation.
Ball Complete Book of Home Preserving, 2020. Bernardin, Newell Corporation.
Bernardin: https://www.bernardin.ca/
Ball: https://www.ballmasonjars.com/

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