



“Teaching research-based practices of safe home food preservation to the residents of Solano and Yolo Counties.”

Burning Issue: Canning in Electric Multi-Cookers



Should I can in my electric multi-cooker appliance?

Even if there are instructions for pressure canning in the manufacturer’s directions, we do not support the use of the USDA canning processes in the electric, multi-cooker appliances now containing "canning" or "steam canning" buttons on their front panels. Our pressure process directions have not been developed for that type of appliance, and the canner being used does matter. Our recommendations were determined for stovetop pressure canners which hold four or more quart-size jars standing upright.

We do not know if proper thermal process development work has been done in order to justify the canning advice that is distributed with these pressure multi-cooker appliances. What we do know is that our canning processes are not recommended for use in electric pressure multi-cookers at this time.

Some of the major reasons we cannot recommend using electric multi-cookers for pressure canning:

1. Thermal process canning work relates the temperatures in the jars to the temperature inside the canner throughout the processing. No USDA thermal process work has been done with jars inside an electric pressure cooker, tracking the actual temperatures inside the jars throughout the process. It is ultimately the temperature and heat distribution inside the jars that matters for the destruction of microorganism in the food product. The position of jars in the canner and flow of steam around them also impacts the temperature in the jars. For example, there would be expected differences in jars piled together on their sides from those standing upright on the canner base.
2. What matters is temperature, not pressure. One manufacturer says its cooker reaches the pressure required for canning, but that alone does not prove the food in the jars is heated throughout at the same rate as in the canner used for process development. A manufacturer should do process development work to document temperatures throughout the unit at a given pressure and throughout the whole process time. Just producing an interior pressure is not sufficient data for canning recommendations. For example, if air is mixed in the steam, the temperature is lower than the same pressure of pure steam. That’s why a proper venting process is so important in pressure canning – to obtain a pure steam environment inside the canner. Also, one has to know how to make adjustments in pressure readings at higher altitudes. The same pressure and process time combination cannot be used at all altitudes.

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3. In order to ensure the safety of the final product, the temperature in the canner must stay at minimum throughout the process time. Do power surges or drops with an electric canner cause the temperature to drop too low? How will you the user know if that happens with your cooker?
4. One of the big concerns is that the USDA low-acid pressure process times rely on a combination of heat from the time the canner is coming to pressure, during the actual process time, and then during the early stages of cooling the canner and jars. Even after the heat is turned off under the canner, at the end of the recommended process time, the food remains at high enough temperatures for another period of time that can still contribute to killing of bacteria. This retained heat while the canner has to cool naturally to 0 pounds pressure before opening is used to advantage in calculating the total sterilizing value of the process to preserve some food quality. If anything is done to shorten the cooling period, including using a very small cooker, then the food could cool down more quickly, and be under-processed. (That is why we recommend using only pressure cookers that hold four or more quart-size jars.) Bacteria are not killed in the food only during the process time; the time it takes the canner to come up to pressure, the process time, and the cool-down time all matter. There is no way at this point in time to know exactly the percentage of contribution from cooling for each of the canning recommendations.

Please note: This statement about electric cookers does NOT include the Ball Automatic Home Canner for acid foods only, which is electric, but (1) is not a "multi-cooker", but a dedicated canner, (2) comes with its own instructions and pre-set canning options for specific food preparations, and (3) has had proper thermal process development done to support the recommendations with it. Jarden Home Brands also sells an electric boiling water canner, but it is not a pressurized appliance and for canning purposes operates similar to a traditional boiling water canner. Directions from the manufacturer for this Ball canner, as well as for the Weck non-pressurized electric boiling water canners, should be followed to get them assembled and for managing temperature settings to achieve a boiling process.

For more information about canning in pressure cookers, please read [Burning Issue: Canning in Pressure Cookers](#).

February 1, 2019

National Center for Home Food Preservation