

Slow cooker

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A **slow cooker**, also known as a **Crock-Pot** (a trademark sometimes used generically in Australia, Canada, New Zealand, the United Kingdom, and the United States of America), is a countertop electrical cooking appliance used to simmer at a lower temperature than other cooking methods, such as baking, boiling, and frying).^[1] This facilitates unattended cooking for many hours of dishes that would otherwise be boiled: pot roast, soups, stews—and other dishes, including beverages, desserts, and dips. A wide variety of dishes can be prepared in slow cookers, including ones typically made quickly, such as cocoa and bread.

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A newer slow cooker. This one has a removable ceramic "crock" (upper left), glass lid (lower left), and heater –housing (right) with push button controls, instead of the original single knob.

History

The Naxon Utilities Corporation of Chicago, under the leadership of Irving Naxon, developed the Naxon Beanery All-Purpose Cooker. Naxon was inspired by a story his Jewish grandmother told about how back in her native Lithuanian town, her mother made a stew called cholent, which took several hours to cook in an oven.^{[2][3]} As shown in an advertisement in the April 1950 issue of *The Rotarian* magazine,^[4] a version of the Crock-Pot, called the "Simmer Crock", was made by the Industrial Radiant Heat Corp. of Gladstone, NJ at that time. The Rival Company bought Naxon in 1970 and reintroduced it under the Crock-Pot name in 1971. Slow cookers achieved popularity in the US during the 1970s, when many women began to work outside the home. They could start dinner cooking in the morning before going to work and finish preparing the meal in the evening when they came home. In 1974, Rival introduced removable stoneware inserts making the appliance easier to clean. The brand now belongs to Sunbeam

Products, a subsidiary of Jarden Corporation. Other brands of this appliance include Cuisinart, GE, Hamilton Beach, KitchenAid, Magic Chef, West Bend Housewares, and the now defunct American Electric Corporation.

Design

A basic slow cooker consists of a lidded round or oval cooking pot made of glazed ceramic or porcelain, surrounded by a housing, usually metal, containing an electric heating element. The lid itself is often made of glass, and seated in a groove in the pot edge; condensed vapor collects in the groove and provides a low-pressure seal to the atmosphere. The contents of a crock pot are effectively at atmospheric pressure, despite the water vapor generated inside the pot. A crock pot is quite different from a pressure cooker and presents no danger of an abrupt pressure release.

The "crock," or ceramic pot, itself acts as both a cooking container and a heat reservoir. Slow cookers come in capacities from 500 mL (17 US fl oz) to 7 L (7.4 US qt). Because the heating elements are generally located at the bottom and often also partway up the sides, most slow cookers have a minimum recommended liquid level to avoid uncontrolled heating.

Many slow cookers have two or more heat settings (e.g., low, medium, high, and sometimes a "keep warm" setting); some have continuously variable power. Most slow cookers have no temperature control and deliver a constant heat to the contents. The temperature of the contents rises till it reaches boiling point, at which point the energy goes into gently boiling the liquid closest to the hot surface. At a lower setting, it may just simmer at a temperature below the boiling point.

Newer programmable rice cookers may be used as slow cookers.

Operation

To use a slow cooker, the cook places raw food and a liquid, such as stock, water, or wine, in the slow cooker. Some recipes call for pre-heated liquid. The cook puts the lid on the slow cooker and turns it on. Some cookers automatically switch from cooking to warming (maintaining the temperature at 71–74 °C (160–165 °F) after a fixed time or after the internal temperature of the food, as determined by a probe, reaches a specified value.

Heating element heats the contents to a steady temperature in the 79–93 °C (174–199 °F) range. The contents are enclosed by the crock and the lid, and attain an essentially constant temperature. The vapor that is produced at this temperature condenses on the bottom of the lid and returns as liquid, into which some water-soluble vitamins are leached.^[5]

The liquid transfers heat from the pot walls to its contents, and also distributes flavors. The slow cooker's lid is essential to prevent the warm vapor from escaping, taking heat with it and cooling the contents.



An oval-shaped slow cooker with button controls and a digital timer

Basic cookers, which have only high, medium, low, or keep warm settings, must be turned on and off manually. More advanced cookers have computerized timing devices that let a cook program the cooker to perform multiple operations (e.g., two hours high, followed by two hours low, followed by warm) and to delay the start of cooking.

Because food cooked in a slow cooker stays warm for a long time after it is switched off, people can use the slow cookers to take food elsewhere to eat without reheating. Some slow cookers have lids that seal to prevent their contents from spilling during transport.

Recipes

Recipes intended for other cooking methods must be modified for slow cookers. Quantities of liquids may need adjustment, as there is a little evaporation, but there should be enough liquid to cover the food. Many published recipes for slow cookers are designed primarily for convenience and use few ingredients, and often use prepared sauces or seasonings. The long, moist cooking is particularly suitable for tough and cheap cuts of meat including pork shoulder, beef chuck and brisket. For many slow-cooked dishes, these cuts give better results than more expensive ones. They are also often used to cook while no one is there to care for it, meaning the cook can fill the pot with its ingredients and come back several hours later to a ready meal.^[6]

Advantages

Cheaper cuts of meat with connective tissue and lean muscle fibers are suitable for stewing, and produce tastier stews than those using expensive cuts,^[7] as long slow cooking softens connective tissue without toughening the muscle. Slow cooking leaves gelatinized tissue in the meat, so that it may be advantageous to start with a richer liquid.

The low temperature of slow-cooking makes it almost impossible to burn even food that has been cooked too long; however, some meats and most vegetables become nearly tasteless or "raggy" if over-cooked.

Food can be set to slow-cook before leaving for the day, and is ready on return. Many homeowners with rooftop solar panels switch to slow cooking because its under 1 kW load is low enough to power entirely by 1-2 kW panels during the day.^[8] Some models include timers or thermostats that bring food to a given temperature, and then lower it. With a timerless cooker it is possible to use an external timer to stop cooking after a set time, or both to start and stop.

Cooking the meal in a single pot reduces water waste resulting from cleaning multiple dishes, and the low cooking temperature and glazed pot make cleaning easier than conventional high-heat pots.

Disadvantages

Some vitamins and other trace nutrients are lost, particularly from vegetables, partially by enzyme action during cooking and partially due to heat degradation. When vegetables are cooked at higher temperatures these enzymes are rapidly denatured and have less time to act during cooking. Since slow

cookers work at temperatures well below boiling point and do not rapidly denature enzymes, vegetables tend to lose trace nutrients. Blanched vegetables, having been exposed to very hot water, have already had these enzymes rendered largely ineffective, so a blanching or sauteing pre-cook stage leaves more vitamins intact.^[9] This is often a smaller nutrient loss than over-boiling and can be lessened to an extent by not removing the lid until the food is done.

Slow cookers do not provide sufficient heat to compensate for loss of moisture and heat due to frequent removal of the lid, e.g., to add and remove food in perpetual stews, (pot au feu, olla podrida). Added ingredients must be given time to cook before the food can be eaten.

Because of the longer cooking time, there is greater danger with slow cookers of having an extended power outage during cooking without the cook's knowledge; for example, the power may go out for several hours while the cook is away at work in places with unreliable power supply.

Hazards

Scalding

Slow cookers are less dangerous than ovens or stove tops due to their lower operating temperatures and closed lids. However, they still contain a large amount of foods and liquids at temperatures close to boiling, and they can cause serious scalds if spilled.

Poisoning concerns

Raw kidney beans, and, to a lesser extent, some other such beans as broad beans or fava beans, contain the toxin phytohemagglutinin. Boiling destroys this toxin, but the far lower temperature of a slow cooker does not. This means that dry beans must be boiled at 100 °C (212 °F) for at least 30 minutes prior to slow cooking,^[10] or, alternatively, they must be soaked in water overnight, after which the water must be discarded, and the beans must then be boiled for at least 10 minutes. Even a few beans can be toxic, and beans can be as much as five times more toxic if cooked at 80 °C (176 °F) than if eaten raw,^[11] so adequate pre-boiling is vital, and indeed crucial, to avoid phytohemagglutinin poisoning.

See also

- Beanpot
- Carry over cooking
- Cholent
- Combi steamer
- Haybox
- List of cooking appliances
- Low-temperature cooking
- Rice cooker
- Remoska
- Sous-vide
- Thermal cooking

References

1. Gisslen, Wayne (2011). *Professional cooking*, 7th ed., John Wiley & Sons, Inc. p. 71
2. Naxon, Lenore. "My Dad, the Inventor of the Crock Pot." (<http://www.beyondbubbie.com/my-dad-the-inventor-of-the-crock-pot/>) *Beyond Bubbie*. 8 April 2013. 2 May 2013.
3. Pilkington, Katie (January 31, 2014). "From humble to high tech, a slow cooker history". CNET. Retrieved December 29, 2016.
4. *The Rotarian*. *Books.google.com*. p. 2. Retrieved 2016-11-27.
5. the Editors of Easy Home Cooking Magazine. "HowStuffWorks". *Recipes.howstuffworks.com*. Retrieved 2010-02-09.
6. "Rabbit Stew; How to Cook the Classic Dish". *How-to-hunt-rabbit.com*. 2015-06-30. Retrieved 2016-11-27.
7. Blumenthal, Heston (7 December 2002). "Take your time | Life and style". *The Guardian*. Retrieved 9 February 2010.
8. Christie, Sophie (22 November 2013). "'How much cheaper is a slow cooker than an oven?' ". *The Daily Telegraph*. Retrieved 5 December 2016.
9. "National Center for Home Food Preservation". University of Georgia. Retrieved 2010-02-10.
10. "Bad Bug Book (2012)" (PDF). *Foodborne Pathogenic Microorganisms and Natural Toxins Handbook: Phytohaemagglutinin*. Food and Drug Administration. 2012. Retrieved 26 December 2013. "Consumers should boil the beans for at least 30 minutes to ensure that the product reaches sufficient temperature"
11. "Foodborne Pathogenic Microorganisms and Natural Toxins Handbook: Phytohaemagglutinin". *Bad Bug Book*. United States Food and Drug Administration. Retrieved 2009-07-11.

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