

Here's Something That Actually Performs Better Under Pressure

by: **Mark Markwardt, Director of Marketing
The Broaster Company
Beloit, Wisconsin**



Mark Markwardt

Today's foodservice operator is faced with a variety of equipment choices for frying chicken and other popular fresh and frozen foods. A process called pressure frying stands out as ideally suited for this purpose, offering a virtual gamut of advantages including faster cooking speeds, superior tasting foods with better nutritional values, significantly less cooking oil usage, reduced energy consumption, easier filtration and kitchen clean-up, and greater overall production per machine.

Pressure frying is a cooking process used by quality restaurants, convenience stores, supermarkets, delis, schools, hospitals, and other institutional and commercial foodservice operations to produce delicious fried foods. It is similar to conventional open frying in which foods are heated to cooking temperature in a well filled with cooking oil, except

that in a pressure fryer the food is cooked under controlled pressure in a sealed vessel. Foods cooked in pressure fryers are much more tender, juicy, and flavorful. You can actually see, feel, and taste a distinct difference in comparison to open-fried foods, which are often greasy on the outside and dry on the inside. And, because moisture and natural juices are retained, foods shrink less when pressure-fried.

Less Moisture Loss, Reduced Oil Absorption

Cooking under pressure in a sealed environment prevents food from losing moisture. When moisture evaporates from food during frying, it is replaced by the oil it is fried in. Oil absorption during open frying has been found to be as much as 20%. Pressure frying seals the food's moisture and natural juices within the product,

preventing the penetration of cooking oil. A study conducted in the test kitchen of the Southern California Gas Company's Commercial Equipment Center concluded that cooking oil absorption per pound in fried chicken is reduced 60 to 90% when pressure fried rather than open-fried. The reason is because cooking oil can be heated to a much higher temperature than water. Water, of course, boils at 212° F in an open atmosphere such as that of an open fryer. As moisture in foods is heated beyond 212° F in an open fryer, it is converted to steam, which in turn is released into the air. The moisture is then replaced in the heated food by cooking oil. However, when steam is trapped and pressure is created, the boiling point of water is changed (to 241° F at 12-15 lbs. of pressure).

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This means that as heat penetrates the product, its outer area loses enough moisture for crispness, while moisture and natural juices deeper in are retained, preventing the absorption of cooking oil while fully cooking the product.

Extended Cooking Oil Life, Reduced Oil Usage, Elimination of Flavor Transfer

As less oil is absorbed into pressure-fried foods – and because cooking occurs in a sealed environment which reduces cooking oil evaporation – pressure frying significantly reduces overall oil usage in comparison to open frying. Decreasing the amount of oil absorption also results in extending the oil's useful life. Over time this can result in substantial savings in cooking oil usage,

which is often one of the most expensive aspects of preparing fried foods. Additionally, because very little oil is transferred into foods, there is virtually no flavor transfer among products. This means that products like fish can be cooked in a pressure fryer without a “fishy” taste being left in the oil or transferred to other foods. While the oil does need to be filtered between such changes to prevent flavor transfer from crumb drop off, the

need to change oil to prevent flavor transfer is thereby eliminated as well.

Faster Cooking Speeds, Greater Food Production

Pressure frying provides a gentle product turbulence and tumbling action that results in more even cooking. Additionally, by sealing the cooking vessel and building just the right amount of pressure, foods can be cooked significantly faster and at lower tem-

peratures, which in turn results in dramatically less energy consumption. In the above referenced Southern California Gas Company study, energy consumption per pound of chicken cooked was found to be reduced up to 48% with pressure frying while the maximum production rate of cooked chicken per hour was found to be 2 to 3 times greater than that of open frying. That means greater food production per machine for a more efficient investment. Pressure frying is cleaner too. Because the fryer is closed and sealed during the cooking process, the opportunity for grease transmission to surrounding areas is signifi-



Pressure fryers, available in various sizes and capacities as shown above, can cook to perfection a wide range of fresh and frozen foods, including 64 pieces of 8-piece-cut fresh chicken in under 10 minutes!

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cantly less. While a pressure fryer is cooking, vapors are exhausted directly to the hood system above the unit, reducing greasy film and odors common with open fryers. The sealed cover and smaller opening of the round cooking well design included on some units provides reduced heat loss and a consistent, no-guesswork cooking cycle, so operators can tend to other appliances at the same time for additional labor savings. Oil filtration is simplified too with specially engineered cold zones for superior heat distribution and improved oil filtration while built-in filtration systems make the filtration process itself fast, simple, and trouble-free. Various products are also available to aid oil filtration and extend useful oil life by extracting soluble liquid impurities that contribute to the bad taste and smell of used oil.

Superior Nutritional Values in Fried Foods

Pressure frying can also result in the production of fried foods with improved nutritional values. Marinating chicken before pressure frying, for example, not only provides a consistent and uncommonly delicious flavor profile that's driven right down to the bone, it also allows the use of a much thinner coating of breading as the flavor is drawn throughout

the product rather than being totally in the coating. That in turn can result in chicken with fewer calories, less fat, and a fraction of the carbs. An innovative marinade and seasoning combination now available takes full advantage of this fact, producing juicier, more flavorful "rotisserie-style" chicken as well via pressure frying while retaining the favorable lower levels of calorie, fat, and carbohydrate content of rotisserie oven cooked chicken, all in a fraction of the cooking time.

Even healthier end products can be obtained by employing specially blended high-quality cooking oils which have no trans fats, no cholesterol, and are low in saturated fat.

Not Just for Chicken

Foodservice operators have discovered that the benefits of pressure frying can be extended to a wide range of products including potatoes, seafood, ribs, pork, vegetables, whole turkeys, corn-on-the-cob, and even desserts! The list is limited only by one's imagination. And, you can work from either fresh or frozen products. Premarinated fresh chicken and a wide range of delicious frozen foods specially formulated for pressure frying are available to make preparation and cooking both quick and simple. Some interesting frozen food offerings (in addition to the ever-popular 8-piece-cut bone-in chicken) in-

clude cod, shrimp, corn dogs, mozzarella sticks, pork tenderloins, hot wings, mini cheesecakes, burritos, and a wide assortment of boneless chicken products such as fillets, tenders, popcorn chicken, and Buffalo wings!

Large Worldwide Installed Base

Pressure fryers are not just an American favorite. A leading pressure fryer manufacturer counts over 10,000 installations across North America and thousands more worldwide including popularity in such far flung spots as Saudi Arabia, Russia, and Eastern Europe.

If you're considering a new or replacement fryer for your foodservice operation, a pressure fryer might be just the ticket for putting some pressure on your competition!

About the Author

Mark Markwardt is Director of Marketing for The Broaster Company, headquartered in Beloit, Wisconsin. Mark has over 25 years of marketing management experience in industries related to foodservice and food distribution. The Broaster Company has been an expert in pressure frying since 1954, when its founder, L.A.M. Phalen, invented "broasting," as he originally called the process. You can reach Mark with questions or comments at mmarkwardt@broaster.com.