



Low Oil Volume Fryers and the Battle Against Trans Fats

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Over the past several years, trans fats, which are present in many deep frying oils and which lower good cholesterol while raising bad cholesterol levels, have been the subject of much scrutiny in the media and in the public consciousness. The outcry has been so significant that by mid 2008, cities such as New York, Philadelphia, Chicago, Calgary and San Francisco have either passed or proposed legislation to ban or tightly control the use of trans fat oils in all public restaurants. With several other cities and states considering following suit, restaurant owners everywhere are looking to the foodservice equipment industry to provide technologies that can produce the same high-quality product that people have become accustomed to, while reducing operating costs and eliminating the trans fats from their products. The main issue with using trans fat free oils is not the availability — they are already widely available — but they cost more and have a different taste.

Fryers That Fight Fat

The method of food preparation that is most affected by the use of trans fat free oils is deep frying. Gas-fired deep fat fryers are one of the most common pieces of commercial equipment found in a foodservice kitchen. Fryers are the original quick-service equipment because most products that are cooked are ready for consumption in only a few minutes. Several fryer manufacturers mobilized their research and development resources to develop solutions to meet the needs of foodservice operators in terms of the use of trans fat free oils. The results were the development of a new type of gas-fired fryers that use a smaller volume of oil for cooking. These low oil

volume fryers typically use about 35 pounds of oil compared to about 50 pounds for standard fryers currently in use. *(Continued on page 6)*



Frymaster Protector® FPGL230



*Side View of Rocket Fryer
Showing Continuous Filter
Chamber and Automatic
Crumb Ejection System for
Safe Frying
(Patent Pending)*

Pitco Rocket Fryer

Figure A. Currently available low oil volume fryers

Low oil volume frying offers significant savings to foodservice operators by lowering the volume of oil that is disposed for each oil change and by increasing the overall useful life of the oil. Oil life in gas-fired fryers refers to the length of time that oil can be used to fry food before the oil degrades to the point it adversely affects the flavor of the food and has to be disposed. The degradation is a function of several factors such as heat, contamination caused by particles of food left behind in the oil, and the amount of oil that is absorbed and picked up by the cooked products.

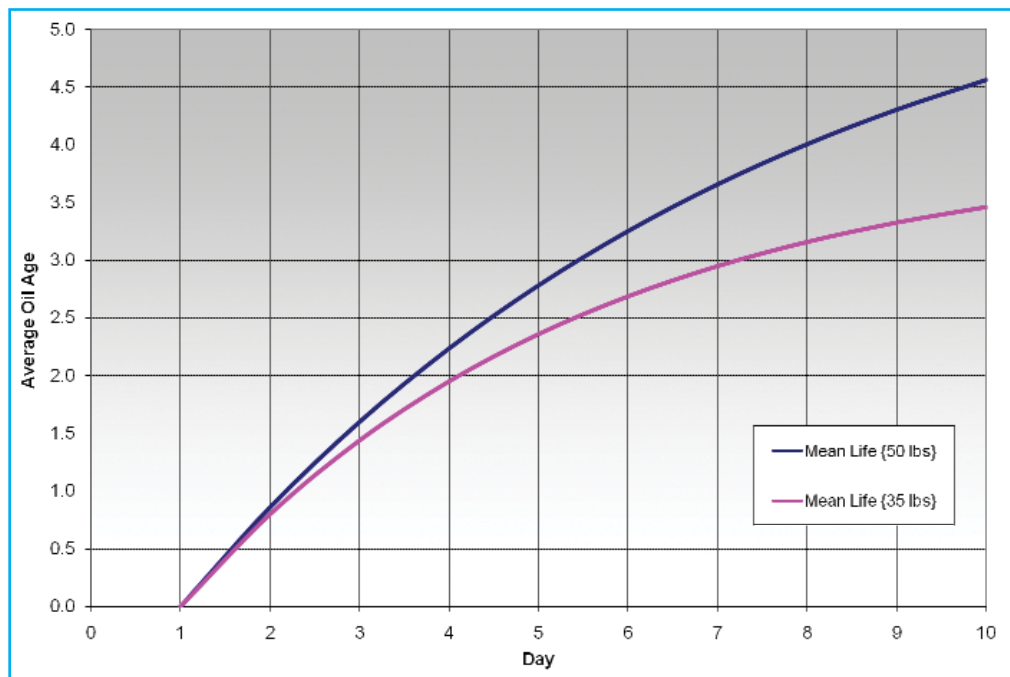


Figure 1. Average oil age for a standard fryer (50 lbs. of oil) vs. a low oil volume fryer (35 lbs. of oil).

The Bright Side of Dragout

The absorption of some of the oil by the food, a process termed “dragout,” extends the oil life because new oil has to be added to the fryer to make up for dragout. And oil life is increased more in low oil volume fryers due to dragout because the percentage of the oil replaced is higher than for traditional fryers.

The cooking of French fries gives a good illustration of the dragout process. French fries are commonly purchased frozen from a supplier. Portions are weighed out (typically 1.5 pounds per basket) and sometimes thawed prior to cooking. During the cooking process (about 3.5 minutes), fries will lose about 30% of their weight. They will also pick up about 5% of the pre-cooked weight in oil from the fryer during cooking. Each day, restaurant operators add small amounts of oil to their fryers to replace the oil lost due to dragout. This small addition extends the oil’s life because new oil is used to replace the oil that was dragged out. Eventually the oil in the fryer degrades past the point where the small additions to offset dragout are not enough to keep the oil fresh, and the entire volume of oil must be discarded. The timeframe that the oil can be used is longer in low oil volume gas-fired fryers because the percent of new replacement oil is higher than for a standard fryer.

Using the French fry example again, for a restaurant that cooks 100 pounds of fries per day, about

5 pounds of oil would have to be added to the fryers to make up for dragout losses. The added 5 pounds of oil means that a typical fryer with 50 pounds of oil would have 10% new oil mixed in with 90% old oil. But a low oil volume fryer with 35 pounds of oil would have 14% new oil mixed in with 86% old oil. A higher percentage of new oil in the fryer means the average age of the entire volume of oil is less and can be used for a longer period of time before having to be disposed of. Figure 1 shows how the higher percentage of new oil in a low oil volume fryer results in a longer use time for the oil. Because of extended oil life, restaurant owners can save significant amounts of money since oil can be replaced less frequently, and when it is replaced, they only have to refill the fryer with 35 pounds of oil compared to 50 pounds.

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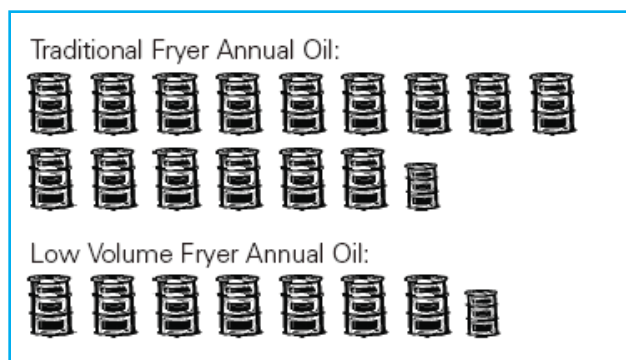


Figure 2. Oil usage for a standard fryer (50 lbs. of oil) vs. a low oil volume fryer (35 lbs. of oil).

The Savings Add Up

An average restaurant that uses three fryers and throws away its oil every six days disposes of 7,740 pounds of oil per year. If that same restaurant used a low oil volume fryer, it would be able to keep the oil for an extra two days. The extra oil life along with the reduced volume would lead to only 3,780 pounds of oil being disposed, resulting in a savings of 3,960 pounds of oil over the course of one year or eight 55 gallon drums. (See figure 2)

The longer oil life and reduced volume of disposed oil offsets the additional costs of using more expensive zero trans fat oils to replace standard frying oils. The potential cost savings is illustrated in Figure 3, showing that even with an estimated cost increase from \$0.25/lb. to \$0.33/lb. for trans fat free oil, the low oil volume fryer has a lower operating cost than traditional fryers. In addition, the time between changing oil is longer due to maintaining higher oil quality, saving even more money for the restaurant.

The foodservice operator asked for a solution to problems associated with increasing oil costs and having to replace existing oils with trans fat free alternatives. The appliance manufacturers with the assistance of the natural gas industry provided solutions by developing and marketing a line of gas-fired low oil volume fryers. The new gas-fired designs, many of which are already EnergyStar rated, are able to save money for the foodservice industry while still preparing the foods consumers want with that unique deep fried taste and, of course, without the trans fats.



To learn more about low oil volume fryers and natural gas foodservice appliances, visit www.gfen.info

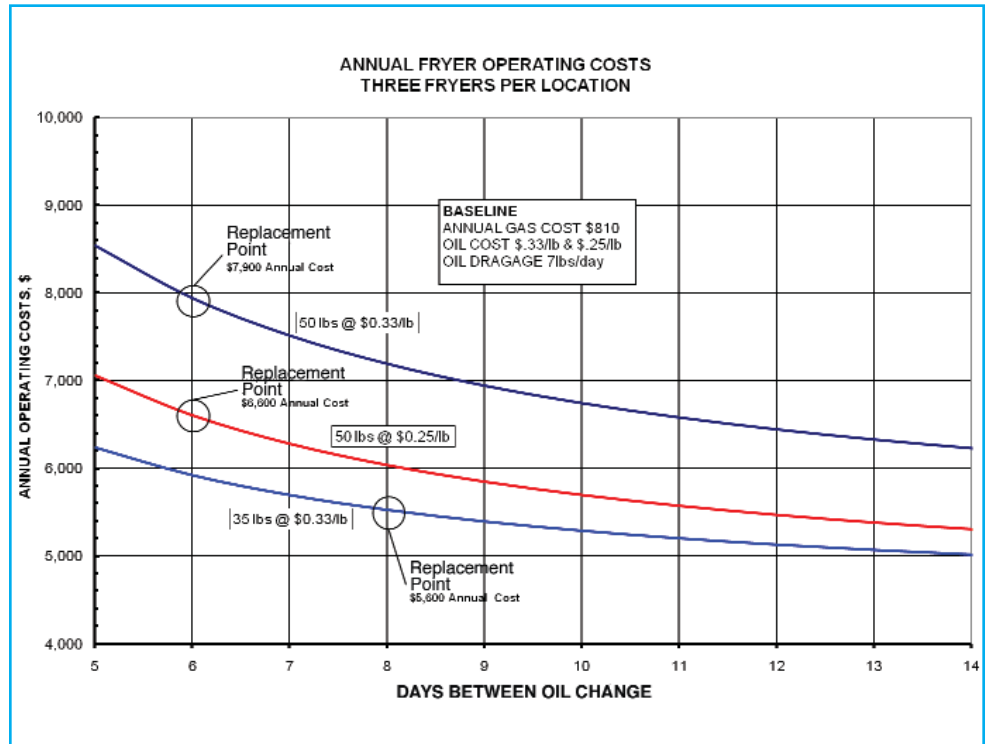


Figure 3. Operating costs of a standard fryer (50 lbs. of oil) vs. a low oil volume fryer (35 lbs. of oil).



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