

CALIFORNIA DRIED PLUM BOARD

Technical Bulletin

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Meeting Foodservice Menu Nutritional Disclosure With Dried Plums

Abstract

The foodservice industry and restaurants in particular are facing local, state and federal legislation requiring the posting of the nutritional content (particularly calories) of meals in their units. This is in response to growing consumer health concerns including obesity. Many operators worry that consumer nutrition and calorie awareness could reduce the eating quality of what they serve thereby lowering traffic, sales and profits.

Dried plums offer foodservice operators natural solutions to improving food nutrition without sacrificing food quality. These improvements result from dried plums' unique composition of naturally occurring fiber, sorbitol and malic acid to replace fat calories with carbohydrate calories thus lowering overall food caloric levels. Leaner meat cuts that substitute for higher fat alternatives are equally improved in moisture and flavor when treated with dried plum ingredients. These natural improvements are made all the while food eating quality is equal to and in some instances better than higher fat alternatives. The best evidence of these nutritional and sensory improvements is the sandwich, the dominant foodservice menu item.

Background

Laws requiring restaurants to post nutritional information are in effect in Seattle, New York City, Nashville, Philadelphia and the states of California, Oregon and Massachusetts — with many more in the works. At the national level, the Federal Government's health reform package includes a requirement that restaurant chains with 20 or more outlets post caloric information for standard menu items.

Two studies published on the website of the *American Journal of Public Health* suggest putting calories on the menu could play a significant role in helping address obesity in the U.S. The most current research tracked patrons at fast-food establishments over a two-week period on the campus of Ohio State University. A total of 12 entrees on the menu were listed with calorie counts. The six items with the highest calories saw sales decrease. While a shift took place in menu items purchased, it did not affect total consumption. Once the test was over, sales of the 12 items reverted back to previous levels sans calories on the menu.

A second study of consumers in Los Angeles County found a correlation between calorie listings and purchases similar to that in the Ohio State research. According to the study's abstract, "Assuming that 10 percent of the restaurant patrons would order reduced-calorie meals in response to calorie postings, resulting in an average reduction of 100 calories per meal, we estimated that menu labeling would avert 40.6 percent of the 6.75 million pound average annual weight gain in the county population aged five years and older."

A report by *Nation's Restaurant News* pointed out that not all studies have shown consumers making better nutritional choices with caloric information on menus. Research conducted on low-income consumers in New York found only 54 percent even noticed the information on menus and only 28 percent said it made a difference in what they ordered. (*Retail Wire 2/17/10*)

Stanford University Starbuck's Study

A study conducted by Stanford University measured food and beverage comprehensive transaction data from Starbucks to determine whether calorie posting had the desired effect. With annual revenues around \$10 billion, the sheer size of Starbucks made it an important testing ground.

The study concluded that mandatory calorie posting caused average calories per transaction to fall by 6% at Starbucks. The effect is long lasting. The effect is almost entirely related to changes in consumers' food choices—there is almost no change in purchases of beverage calories (Starbucks' core business). The effect is larger for high-calorie consumers.

Learning appears to play an important role in explaining consumers' responses: surveys showed that consumers tended to be quite ignorant about calories, and the purchase data showed that consumers exposed to calorie information in New York City stores reduced their calorie consumption even at non-calorie-posting stores. Survey respondents reported an increase in sensitivity to calories, suggesting that salience also plays a role. The impact on Starbucks profit is negligible on average, and for the subset of stores located close to their competitor Dunkin' Donuts, the impact of calorie posting was actually to increase Starbucks revenue. (*Stanford University, January 2010*)

Some U.S. chains are already offering more healthy choices on their menus in advance of any regulations. But where large chain restaurants provide nutritional information on their corporate websites or in brochures, it is often in very small print, and is only available to consumers who actively seek it out before placing their food orders. The keys to improving the overall nutrition of foods while meeting the consumers desire for flavor and eating satisfaction as well as the foodservice operator's need for sustained customer traffic and sales lies in **calories and fat**.

Role of Sandwiches On Foodservice Menus

Whether clubs, gyros, melts, po'boys, muffalettas, wraps, subs, burgers, paninis, mini's, sliders, or any number of sausages on a bun, sandwiches continue to be a dominant force in consumer eating at home and away from home. *Packaged Facts* estimates the U.S. sandwich market is more than \$121 billion in sales through sandwich chains, convenience stores, burger chains and other foodservice outlets as well as retail supermarkets and club stores. Hamburger chains accounted for 45% of this market with sandwich chains accounting for another 25%. Sandwich chains such as Subway and Quiznos, however, are growing at a much faster pace than hamburger chains.

Americans are eating sandwiches for dinner at home more than any other entrée. Sandwiches are now the No. 1 dinner entrée eaten at home (*NPD*). Just over one out of every nine such dinners, or 11.1% features a sandwich. Twenty years ago 5.3% of all dinners included a cold sandwich, while 7.9% included a hot sandwich (*NPD*).

Behind the growth of sandwiches is consumer demand for convenience and speed in meal preparation and consumption. This demand is evident at all demographic levels from kids to working parents to seniors. In fact the growth of seniors driven by baby boomers is targeted to be a significant sandwich opportunity particularly when low fat proteins and whole grain breads are included in the convenience equation. Heart health, digestive health and weight management are all important food issues to the aging population.

Sandwiches contain three primary components that are potential harbingers of fat and calories: **bakery, protein, and condiments**. All three components can benefit from the inclusion of dried plum ingredients to raise nutritional values.

Dried Plums--Natural Approach To Improving Menu Nutrition

California dried plums are a natural ingredient to achieve consumer and foodservice operator objectives for reduced calories and fat. The *d'Agen* plum is the source of dried plums' unique array of naturally occurring features. The *d'Agen* plum is one of just a few plum varieties that is allowed to fully ripen on the tree without fermenting before harvesting. This extra time on the tree results in several unique characteristics and a multiplicity of food ingredient benefits.

Dried Plums' Nutrition Ingredient Benefits	
Fiber	Seven percent (7%) fiber, half of which is soluble.
Sorbitol	15% sorbitol, more than any other food
Malic acid	1.5-2.0% malic acid to potentiate flavors
Fat-free	Thus, no saturated fat and no trans fat
Cholesterol free	No cholesterol
Unique sugars	No sucrose
Low glycemic index	GI of 29 +/-4, GL of 10

Mathematics of Calorie Reduction

Eighty-one percent (81%) of food processors believe consumers are looking for reduced-fat food formulations to help solve a weight problem. Some 70% of consumers will turn to low-calorie formulations and 62% to reduced-sugar to achieve their weight reduction objectives. As for beneficial ingredients, 74% of food processors reported dietary fiber as a key for weight-control products (*Prepared Foods*).

Dried plum's fiber, sorbitol, malic acid and the absence of sucrose serve as a natural fruit-based system to lower fat and calories while achieving desired texture and flavor. Fiber and sorbitol mimic fat's moisture binding and texture building while malic acid replaces fat's flavor carry-through when chewing.

Baking

Dried plums contain 2.57 calories per gram. Shortening, on-the-other-hand, contains 8.84 calories per gram. Replacing all or a portion of the shortening in a bakery formula not only reduces the fat content of finished baked goods but also the calories. Also, dried plums add sweetness without the extra calories found in sugar.

For example, if 100% of the shortening is replaced with dried plum puree, the calories are reduced 85%. If 50% of the shortening is replaced with dried plum puree, the calories are reduced by 43%. This calorie replacement is possible due to dried plums' high fruit sugar content. In general, the *d'Agen* plum contains twice as much total sugar at harvest as other varieties of plums.

	(Per Gram)			
	Shortening	Dried Plums	100% Dried plum Substitution	50% Dried Plum Substitution
Calories	8.84	2.57	1.21	4.81
Fat (G)	0.95	0.00	0.00	0.45
Calories from fat	8.84	0.00	0.00	0.45

Meats

Meat products selected or designed for fat and calorie reduction are another way to improve the health and nutritional content and perception of foodservice menus.

But, whole muscle meat products, particularly extra lean proteins such as beef, pork, poultry and most game animals are low in fat and equally low in moisture and flavor. Lean ground beef, ground chicken and ground turkey can also suffer from moisture and flavor shortcomings. Underutilized meat cuts now being marketed to restaurants are often less tender with less moisture and flavor.

Further processed, pre-cooked meat products intended for foodservice can be less moist, particularly when heated or held under heat for extended time periods. Because of the abuse of double heating, favorable sensory characteristics can be reduced or lost leaving consumers dissatisfied.

Plum juice concentrate is a USDA-approved natural ingredient. When combined with other flavor system ingredients plum juice concentrate helps to tenderize as well as bind moisture all the way through cooking. Also important is the ability to shorten and simplify meat labeling with natural ingredients with known consumer identities. The addition of as little as 1-3% dried plums to the raw meat block in a vacuum tumbled marinade process can help retain and control moisture. Dried plums' fiber and sorbitol attract and hold meat moisture resulting in the final product being more moist and juicy.

Condiments

The flavor of dried plums can be described as non-characterizing. That is, because of malic acid, dried plums do not impart a flavor but rather, enhance and round out other food flavors in a recipe or formulation. This makes dried plums the perfect ingredient for complete flavor systems whether sweet or savory, condiments, sauces, marinades, or rubs. The presence of natural malic acid is particularly important when developing ethnic flavor systems with complex formulas and ingredients.

Dried plum purees, juice concentrates and powders are an effective addition to scratch-made condiments, spreads, marinades, rubs and sauces or can be specified in processed versions for a noticeable improvement in flavor, moisture and shelf life. When fat and calories are reduced through, for example vegetable oil reduction, the need for flavor enhancement from all remaining ingredients becomes more critical. Dried plums take on the remaining flavors while substituting for the texture and mouthfeel contributed by vegetable oil.

With more pre-cooked and seasoned sandwich proteins and prepared foods entering the foodservice markets the need for bigger and deeper flavors to differentiate from competitive concepts and increase demand has never been greater.

For further information, recipes and formulas contact:

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