

Suzy Badaracco Culinary Tides, Inc. www.culinarytides.com sbadaracco@culinarytides.com

## Carb Lovers Unite!

The villainization of foods is not new, and when one evil villain is not in the spotlight, it is surely because another has captured the media's attention and consumers' hearts. The most successful attack strategies involve a victim, a villain, and a hero. Sometimes the villain is quite real, and sound science is used to back up the attack. Often, however, the attack is misdirected or simply baseless. I often wonder why, when a food is innocent of all charges, supporters take so long to come to its defense and why so many people are willing to join an attack on a food or food category.

Carbohydrates have long been a poster child for such attacks. In fact, entire diets have been created to expel carbohydrates from daily meals. Promises range from weight loss to increased energy. Let's look at the evolution of attacks on carbohydrates over the past few years.

Early 2000 saw the revival of the Atkins diet created by Robert Atkins in 1972. The diet itself is a broad-based low-carb approach that does have weight loss efficacy. How does it work? Essentially it is a starvation diet. The brain functions using simple sugars for fuel. When carbohydrates are consumed, they are metabolized to simple sugars that can then act as fuel for the brain. When consumed in excess amounts, the body converts carbohydrates in the liver to fat, which is stored for later use. The Atkins diet removes carbohydrates from the diet, thereby starving the brain, reversing the metabolic process, and causing fat to change back to simple sugars to feed the deprived brain. And poof, weight loss occurs. The downside of the diet is that the kidneys can be damaged by high-protein diets, and therefore, kidney failure is a risk. Also, cholesterol levels may rise, which contributes to heart disease, and because the brain is being starved, cognitive function issues may arise. The diet has also been linked to higher rates of intestinal cancer, and the ketones produced when fat is converted back to sugar can cause brain damage in fetuses.

Adversaries of the Atkins diet include the American Dietetic Association and American Heart Association, as well as others. Their voices simply weren't heard initially above the "eat steak and bacon and lose weight" mantra—who wants to rain on that parade? The eventual crash in the popularity of the Atkins diet was due in part to the education efforts of health experts and because the diet isn't sustainable. Rebound weight gain often occurs, and secondary health issues may arise.

A related diet was the next star to try to steal the spotlight. Proponents touted the low glycemic index (low GI) diet as the new miracle weight loss diet. However, the low GI diet is a medical diet designed for diabetic patients, and research

subsequently showed that only diabetics experienced some weight loss benefit when following a low GI diet. No blood sugar problems? No weight loss. In addition, the low GI diet is so complicated, dietitians tend to teach it only to those who need to follow the diet for medical reasons. In the end, the same set of adversaries that contributed to the crash of the Atkins diet were responsible for the failure of the low GI diet.

Next up was the gluten-free diet. The gluten-free diet is essentially another low-carb diet, except it only villainizes three carbohydrate sources—wheat, rye, and barley. The gluten-free diet is also a medically indicated diet designed specifically for celiac sprue patients and has no weight loss or health benefits for the general public. In fact, patients have to be monitored closely because the diet creates a hostile environment for probiotics which can impact gut health long term. According to the Celiac Sprue Association, 1% of the U.S. population carries the genetic marker for celiac sprue. Of that 1%, about 30% has a genetic predisposition, so only about one-third of the 1% will actually manifest the disease. The popular quote "1 in 133 people suffers from celiac sprue," is simply not true. According to the Celiac Foundation, there are only about 300,000 Americans afflicted with celiac disease, with another 150,000 estimated to be undiagnosed. Since the CDC does not require its tracking by hospitals or doctors, there is no way to measure the actual number. Consumer survey research by groups such as Hartman, Mintel, and Datamonitor have reported that many people are mistakenly following a gluten-free diet due to ignorance of its purpose. Some 80% of people following the diet don't medically need to follow the diet.

The three most recent related diets in the spotlight are the Dukan diet, the Paleo diet, and the Wheat Belly Diet. The Dukan diet recently gained brief media attention in the United States due to the British royal family's use of the diet. However, it hasn't gained much traction in the United States due to the many groups who have successfully broadcast their concerns about the unhealthy nature of the diet. The Paleo ("cave man") diet is even more limiting and unsustainable than the Atkins diet. In addition, Stone Age hunter-gatherers, on whose diet the Paleo diet is based, only lived to about 25 years of age, which is not a strong endorsement for the benefits of this diet. Finally, there is the Wheat Belly Diet—a book by William Davis, who claims that wheat is the cause of diabetes, heart disease, and obesity. None of these claims are supported by health-related research. The book also attacks the gluten-free diet, calling it an unhealthy diet riddled with processed flours, starches, and gums. This book narrows the carbohydrate witch hunt to wheat alone.

Over the years we have moved from avoiding all carbohydrates to avoiding specific carbohydrates—first avoiding

wheat, rye, and barley and next avoiding just wheat. The good news is we are running out of angles from which to attack carbohydrates.

It is time to celebrate carbohydrates instead of bashing them. Clinical research has tied whole-grains and other sources of carbohydrates, such as potatoes and rice, to improved cognitive function; improved memory and focus; and decreased risk for diabetes onset, heart disease, colon cancer and polyps, breast cancer, pancreatic cancer, prostate cancer, and obesity. In fact, consumers who have higher whole-grain and complex carbohydrate intakes tend to have lower body mass indexes. The question is, why is the media not reporting these findings? Is there resistance to dispelling the current myths about carbohydrates? Consider recent research:

- According to the University of Toronto, adding foods such as oats to the diet to reduce cholesterol might be more effective than cutting dietary fat.
- Researchers at King's College found that adding breakfast cereals to the diet increased nutrient intake in low-income populations.
- Daegu University researchers found that a dietary pattern containing grains, vegetables, and fish was inversely associated with the risk of metabolic syndrome.
- According to research from Yale University, the risk of high blood pressure was 25% lower in male doctors who ate whole-grain cereals seven or more times a week.
- The National Cancer Institute reported that consuming fiber was linked to a lower risk of disease.
- Researchers from Northwestern University found that adults who ate high amounts of fiber were less likely to suffer from heart disease.
- Hebrew University of Jerusalem researchers reported that increasing carbohydrate intake at dinner might aid in weight loss.
- Soochow University researchers found that women who ate the highest amounts of healthy plant components were 11% less likely to develop breast cancer than women who ate the least.

Beyond the research results, I encourage you to consider the "playful" side of carbs. After all, no meal consists simply of a slab of meat. Focus on the contribution of carbohydrates to food and flavor trends. Begin with some of the single "flirty" items now headlining trends and layer them into flavor and cuisine trends to create a more three-dimensional perspective on a product. Consumers are in a playful mood as they try to pull themselves out of the current economic crisis, so standard comfort foods are not the place to be, even if winter is coming. For example, if you are going to serve macaroni and cheese, it had better have lobster on it.

Expand your horizons. Consider ethnic rice dishes, corn grits, taco shells stuffed with "crazy" fillings, oatmeal but not for breakfast, popcorn and pretzels as coatings not snacks, buckwheat crepes with savory fillings, or chia seeds. Also consider single ethnic dishes that inspire you, such as arepas, fattoush (Levantine bread salad), paella, popovers, gourgeres (baked savory pastries), flatbreads, crepes, soups and stews, designer doughnuts, macarons (meringue-based sweet confectioneries), pies, or gingerbread.

Factions, or families, provide another way to add layers to a product. Factions cross time and borders, which is why they act as families rather than being tied to a time in history or place in

the world. They are, in fact, the gypsies of the food world and are always on the move. Some factions currently in the spotlight are street, breakfast, and vegetarian foods, ethnic sandwiches, handheld pies, and snacks.

Finally, find your products a home on the plate with others from their neighborhood. Here we have rock stars and rising stars. Rock stars are those products already on the ground and running, while rising stars are either orphans (not yet launched but well supported) or infants (newly launched). Rock stars include soul, Korean, Vietnamese, regional Mexican, Peruvian, and Eastern European (Russia, Czechoslovakia, Turkey, etc.) foods. Rising stars include Middle Eastern (Lebanon, Israel, etc.), Caribbean and Pacific (Cuba, Jamaica, Fiji, Samoa, French Polynesia, etc.), Central American (Nicaragua, El Salvador, etc.), North African (Morocco and Egypt), arctic (Scandinavia, Iceland, Alaska, Norway, Siberia, etc.), and an expanding array of Asian (Malaysia, Laos, Cambodia, Nepal, etc.) foods.

Celebrate carbohydrates—play with them, be inspired by them, and support them when they are villainized. After all, your products could be the next to be unjustly blamed for something.



Although cakes have gained economic importance worldwide, not much is known neither about ingredient functionality in cake systems nor about the chemical and physical processes during cake making. The dynamics in this challenging field clearly justify the organisation of a **first international Cake Symposium**. It is timely to provide a forum where researchers and technologists can share recent progress and insights in the broad area of cakes.

## www.cakesymposium.org

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