



Aggie Brew

The Newsletter of the campus brewing program at UC Davis

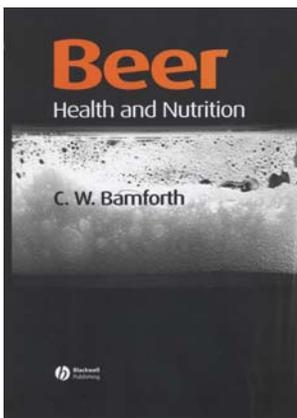
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Focusing on health

Look to see a new research focus within the brewing lab at Davis. Never before has the customer appeared to scrutinize so closely their diet – and recent nonsense masquerading as dietary advice has led to people mistakenly walking away from beer as a beverage on account of its supposed high carb/high glycemic index makeup (see later). It's time to do much more on the chemistry but also on the psychophysics of beer consumption. Bubbles and Bamforth may be a blast from the past!

So get the book

One important stage in this shift in emphasis is “the book”. Expensive, I know, but I hope it's going to help in the realignment of beer as a positive part of the diet. Go to <http://www.blackwellpublishing.com/book.asp?ref=0632064463&site=1>



Interns

Several of our students will be interning during the summer. The four Masters students are headed in different directions: Cale May to Anheuser-Busch at Merrimack; Christine Wright to A-B at Fairfield; Robert Kuntz to Widmer and Sam Gambill to Firestone Walker. Undergraduates William Davis and Andy Gaston are headed to Rockyard and Shiner respectively. If YOU would be interested in taking a Davis intern just get in touch with me.

An article on low carb

One way to expose the myths about beer and carbs, of course, is an exposee in the newspaper. Alas, the press didn't seem too interested in a Bamforth piece on the subject! But for your use, here it is. If you want to use it, for example in your in-house mag, feel free – but give me a plug!

Beer, carbs and constipation

Charlie Bamforth

A close friend is in the midst of one of her annual weight-loss campaigns. Ordinarily I take relatively little notice, provided that she doesn't attempt to involve me directly in the enterprise. The offering of a few congratulatory or encouraging noises off stage left is generally sufficient. This latest venture, though, has commanded my attention, for she has been trying one of the low carb fads. And my beloved beer is being bad mouthed in the process.

There is no question that my friend has lost weight. That was to be expected, for she has great self-discipline and any controlled intake of food is bound to ease off the ounces. However she will not be staying on the prescribed regime for at least two reasons. For starters, she is grossly over-faced with protein and fat, and yearns for the balance that comes in the form of common-or-garden carbohydrate: a slice of bread, some potatoes, a bowl of rice. The other problem is more delicate: should we say there are certain hold ups in the downstream department? The consultant suggested artificial fiber. How wholesome and natural is that?

The diet concerns me so much that I have scrutinized the recommendations. Imagine my alarm, then to find that beer is absolutely rejected on account of supposedly having a high glycemic index (GI). The GI is a measure of how quickly a food will elevate levels of sugar in the blood. The folks hawking the newer diets, such as Atkins' diet and the South Beach Diet, urge you to consume foods that yield a low GI. The hawkers of these crazes say no to beer because it is supposedly loaded with maltose, a “high GI sugar”. They appear to have somehow forgotten that beer is the product of fermentation of malted barley. The yeast converts the maltose into alcohol. Most beers, especially the light ones, contain no maltose at all. As a consequence, the

level of carbs in beer is pretty low when compared to a great many other foods.

What precisely is the GI value for beer? Actually nobody knows, for the simple reason that it can't be measured. The standard procedure for measuring GI is to feed a person who has fasted overnight with 50 grams of carbohydrate in the form of the selected foodstuff within a period of fifteen minutes. To do that with a typical ale or lager would demand that you drink five 12-ounce bottles' worth, one after another. To do it with a "low carb" beer (yes, they exist) would demand 16 bottles. And it has to be done in triplicate to account for any variability. It can't be done.

Just as importantly, GI takes no consideration of the impact of the alcohol itself. It is known that alcohol actually *lowers* the level of glucose in the blood. Because high levels of sugar in the blood have been linked to an increased risk of cardiovascular disease, this may be one of the mechanisms whereby an alcoholic drink such as beer reduces the risk of death when consumed moderately.

There is now a wealth of evidence to show that a glass or two of wine or a pint or two of beer per day are as good as one another in prolonging life expectancy. And if I may further champion the merits of ales and lagers, might I mention that, on a calorie for calorie basis, they can compare favorably with meat, cereals, fruits and vegetables for delivery of essential vitamins, fiber and minerals.

Taken in moderation (and that includes counting the calories provided by the alcohol itself), beer can be a worthy component of the adult diet. Like everything else that you consume, it should be in balance. Nothing to excess – but, equally, nothing important should be excluded.

It's a simple equation: destroy more calories than you consume to lose weight. Take in more calories than you shed to get blubbery.

Recent Publications

Since the last newsletter we have published (or have in press) a number of articles:

Bamforth, C.W. & Milani, C. (2004). The foaming of mixtures of albumin and hordein protein hydrolysates in model systems. *Journal of the Science of Food and Agriculture*, in press

Bamforth, C.W. (2004) A critical control point analysis for flavor stability of beer. *MBAA Tech Quarterly*, 41, 97-103

Bamforth, C.W. (2004) Fresh Controversy: Conflicting Opinions on Beer Staling. *Proc Convention IGB Asia-Pacific*, in press

Bamforth, C.W. (2004) Opportunities for newer technologies in the oldest biotechnology, brewing. *Applied Biotechnology, Food Science and Policy*, 1, 213-222

Bamforth, C.W. (2004) People and Ideas in Brewing: An Academic Challenge? *Brewers Digest*, in press

Bamforth, C.W. (2004) Teaching Brewing in a Passionate Society. *Proc Convention IGB Asia-Pacific*, in press

Bamforth, C.W. & Kanauchi, M. (2004) Enzymology of Vicinal Diketone Reduction in Brewer's Yeast, *J Inst Brew*, 110, 83-93

Bamforth, C. (2004) The Art of Ale, *Brewers Guardian*, 133 (7), in press

Award

I was honoured to be nominated for an Excellence in Education Award by the student body at UC Davis.

On the Road

Since the last issue of this newsletter I have been busy spreading the word, with gigs for COPIA in Napa, the Aging and Medical Science Mini Medical School in Sacramento, the Anheuser-Busch Brewing School in St Louis, the Brewers and Vintners meeting in Shell Beach, the IGB Asia-Pacific Section in Hanoi (Vietnam), the Repeal of Prohibition Dinner in St Louis, the Craft Brewers Conference in San Diego, the Association of University Anesthesiologists in Sacramento, the Beer Institute in St Louis, the Master Brewers Association in Philadelphia – and Gallo in Modesto!

Contributions

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