

Flavor Futures—Through the Crystal Ball

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Back in 1910—the year I was born and FEMA was still in swaddling clothes—flavors were an afterthought to be used only if they did not cost too much.

Since then the lengthening interval between the times of harvest and consumption has required the use of preservatives and flavors.

Twenty years ago, to establish a list of flavor ingredients generally regarded as safe, or GRAS, you created your own expert panel with great success. Your example has been widely copied—the most sincere form of flattery.

The Forecast

About the future for flavors—I am mindful of the warning of Sam Goldwyn, who cautioned that “Forecasting is very difficult, particularly when it concerns the future”.

My crystal ball suggests that in the 16 years to the year 2000, U.S. flavor markets should grow by a factor of 5 to 6 times 1983 sales. We look for the same growth outside the U.S. If inflation exceeds an average of 5% the increases could be larger.

We've never been afraid to put

IFF's money where its mouth is. This forecast is no exception. We've just bet close to \$30 million in our new plant at South Brunswick, New Jersey, on the future of the U.S. flavor markets. In the past our faith has not been entirely misplaced. Our flavor sales have multiplied about 15 times over the past 20 years.

Why the Optimism? Hunger and Pleasure

The hungry will always be with us. As the area of croplands decreases, flavor technology will be needed to make less expensive and nutritious, and possibly unfamiliar, foodstuffs attractive to eat. The increasing use of genetic engineering to create new plants and microorganisms may well expand the kinds of low cost nutrients available for this purpose. These are most likely to need flavor enhancement. Flavor sales will get a lift from the changing U.S. population mix. This will add consumers who appreciate well-flavored foods and beverages and are willing to pay for them. There is a growing interest of all income levels in foreign cuisines—which our industry makes

possible to duplicate locally.

The elderly of the western world are on the increase. Most of them are likely to want higher flavor levels to maintain palatability either because of more frequent use of medications or a diminishing ability to sense the important aroma content of flavors.

The population of third world countries on the other hand is very young. They will want well-flavored foods and drinks high in energy content.

Technology

Continuing improvements in preserving, distributing and dispensing foods and beverages will add to flavor demand. This is particularly so for convenience foods and meals eaten in or outside the home. Time pressures in daily life drive up the demand for these products. The rising use of aseptically packaged foods and beverages is another example.

The New Biology

The really big sales push will come from the current big noise in science—the new biology. Let me list just a few of the highlights.

Humans are Not Peas in a Pod

A cascade of new data questions the validity of the premise underlying most governmental regulations affecting our industry—the idea of a universal human with a uniform response to anything that is ingested. Here's a major legislative opportunity for FEMA.

People are not like peas in a pod. Individual humans differ in many physiological functions including dietary needs, metabolism, immune reactions and mental responses.

I would like to repeat for emphasis that the idea of a universal human with a uniform response to anything that is ingested is a false premise.

Nutrition and Disease

New data on metabolism, nutrition and the role of diet in the prevention and control of disease offer many flavor opportunities.

In the mid-19th century, a British naval doctor established the relationship between scurvy and lack of citrus in the diet of sailors. From now on it is likely that any serious medical researcher will automatically be looking for dietary influences on the object of investigation. Example: cancer researchers warn of the link between breast cancer and a high intake of fats.

Soaring costs of health care, both to the individual and the insurer, will force greater attention to diet, as well as life style, by the public in order to improve health maintenance at an affordable cost.

The lay literature is full of dietary warnings: a March 1984 cover story in *TIME* on cholesterol; many publications on the correlation of diet and athletic and sexual prowess.

Our customers will be offering a much greater variety of products tailored to varying human categories. Each will need to be flavored attractively to ensure continued use. Most people will not continue to eat something merely for health reasons. It has to taste good. We have seen examples of this in foods and drinks which are low in, or free of, such ingredients as sodium, fats or sugars.

New data describe how smell and taste affect the brain and the central nervous system and, in turn, the en-

docrine system; and thus both mental and physical health. We include smell since it is an important part of the public perception of flavor. The new data reinforce the role of flavored products in health maintenance. The Monell Chemical Senses Center in Philadelphia is about to begin an intensive investigation of this correlation at the suggestion of its Nutrition Advisory Panel.

It is only a question of time before the medical profession and the computer whizzes team up to develop an individual card for each person which will record his or her own individual characteristics. These will be used to determine whether that individual may safely ingest any given medication, food or beverage by electronic matching with ingredient markers on the package at points of sale. If you think this too far out, who believed ten years ago that package markers for electronic reading would now be in common use?

Toxicity

Serious questions are also surfacing about the validity of some of the methodologies now used to test toxicity as well as the relevance, if any, to human safety of many of today's animal tests. Another area for FEMA effort.

All of us recognize that there will always be an important market for natural flavors. But what bothers us greatly is the mindless pursuit of "naturals" by the consumer. What is eaten as "natural" is usually whatever happened to have aided the evolutionary survival of the plant or animal. Its suitability as human nutrition is purely accidental—with a few exceptions of controlled plant and animal breeding. Unfortunately this consumer prejudice is exploited by many food and beverage companies eager to ride the wave of the moment. They are, in fact, compounding the problem but change is on the horizon.

The widely assumed safety of "naturals" is daily challenged by new data on their chemical components, their interaction with other food-stuffs and human chemicals and their own frequent contamination with natural residues such as aflatoxins or, in the case of honey, toxins

added by the bees themselves. As the public becomes more aware of these scientific facts, they will become more likely to use products specially formulated for their needs. These should be more easily digested, less expensive, safer and more tasty. A pretty good recommendation. As you know, this capability exists now.

The Delaney Clause

As the nature of cancer and the ubiquity of natural carcinogens becomes more widely understood, as Edith Ephron has explained more fully in her forthcoming book, "The Apocalypics," I confidently predict the death of the "Delaney Clause"—incinerated in the hot flame of truth.

Financing

We all know that science is expensive. What should be the response of the profit-minded members of FEMA?

Much of the expense can be financed on an industry basis. FEMA has started on this course with a fine pledge of \$100,000 to The Monell Chemical Senses Center. With the help of food and flavor companies we've been able to attract a total funding of \$5 million to investigate the role of flavors and colors in nutrition and health. We have started with a \$2 million kitty for a related inquiry into the correlation with neuroscience. We hope to extend this fund to the \$5 million level also.

There are several advantages to this approach. It educates at the same time the scientific community, our customers and governmental agencies. And, at minimal cost to each of us. We all remain free to do such proprietary research as we desire. Many, including IFF, will want to continue to do so.

This Address was presented to the Flavor and Extract Manufacturers' Association of the United States on the occasion of their 75th Anniversary meeting, May 5, 1984, Marco Island, Florida.

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