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Book reviews

A. Larry Branen, P. Michael Davidson, Seppe Salminen and John H. Thorngate III (editors). *Food Additives*, 2nd ed. New York and Basel: Marcel Dekker Inc. 2001. US$225. pp. XV + 938, ISBN 0 8247 9343 9

Globally the food industry spends about US $20 billion annually on chemical additives with which to modify the colour, the flavour, the texture and the keeping qualities of its products, but that information is not provided in this volume. Consumers in the industrialised countries are currently, on average, ingesting between 6 kg and 7 kg of food additives/year. This volume (p. 15) cites instead Conning's 1986 estimate of 0·5 g/person per d (or some 183 g/year), but that always was an unconvincing estimate, and nowadays is seriously out of date.

This weighty tome represents, however, a refreshing change from some of its more dreary predecessors. Several earlier volumes addressed the narrow concerns of industrial food technologists and corporate executives, providing information about which compounds can be used for which technical purposes, and the regulations that cover their usage. This book takes a broader view. It acknowledges, if often implicitly, that the perspectives of consumers, public health professionals and regulators also need to be taken into account. The trouble is that the resulting collection of twenty-five chapters is inconsistent, and it also fails to address several key issues.

A consumer and public health perspective can be discerned in the impressive discussion of acute adverse reactions. The consumer's viewpoint is, however, absent from many other chapters, which provide a narrow diet of technical details. Contributors also frequently assume that if animal tests on additives provide no evidence of toxicological problems then laboratory animals are a good model for effects on human consumers; when additives cause unwelcome effects in animals, however, that is interpreted as providing evidence that in those respects, the animals are poor models of humanity.

Discussions of the concept of an 'acceptable daily intake' (or ADI) are problematic. None of the authors has responded to the argument that an ADI is not a natural constant nor a toxic threshold but an industrial and bureaucratic artifact that misrepresents political judgements as if they were purely scientific. Verbruggen's suggestion (p. 45) that '…the ADI is a guideline limit, only not to be exceeded every day in a lifetime…' is eccentric. To imply that if the ADI is occasionally not exceeded, then adverse effects will not occur, is novel. The acknowledgement (p. 45) that, for the vast majority of additives, regulatory officials have no idea whether or not intakes regularly exceed ADI is welcome. The explanation of why the food industry is reluctant to provide the requisite data is convincing.

Issues that this volume fails to address include questions about whether nutritional objectives can more effectively be met by consuming more additives-containing foods, or by consuming fewer of them. It fails to acknowledge that synthetic sweeteners have, in practice, served not as substitutes for, but as supplements to, sugar consumption; as the use of artificial sweeteners has risen sharply since the early 1980 s there has been no corresponding decline in sugar consumption. The contributors also fail to acknowledge evidence indicating that synthetic sweeteners may be not only ineffective at helping people control their weight but counter-productive.

One chapter stands out, however, namely that of Peter Barton Hutt's on the 'Regulation of Food Additives in the USA'. Hutt is a corporate lawyer in Washington, DC and from 1971 to 1975 was Chief Counsel for the Food and Drug Administration (FDA). Hutt's main complaint is that since the early 1970 s '…the record of FDA approval of new food additives is appalling…' because only eight new compounds have been approved. He complains about the delay in getting the synthetic fat substitute Olestra on to the market, but fails to acknowledge the problems posed by Olestra's powerful laxative effect, and its propensity to leach fat-soluble nutrients from the gastrointestinal tract. His proposed solution is to open regulatory policy-making up to free competition. He stipulates, moreover, that once a competitor to the FDA '…has made its determination…[the] FDA would not be permitted…to veto marketing of the product on the ground that it still needs further testing.' He fails to recognise that judgements about how much evidence should be required are policy and not scientific matters. He wants regulatory organisations to compete to provide industry with less rather than more demanding toxicological requirements, but fails to acknowledge the adverse consequence for consumers and public health. He opines that 'The market mechanism is the greatest natural form of regulation the world has ever seen' and that his proposal provides '…the only hope for the future', but few in the European Union will find his argument persuasive.

The UK Food Standards Agency was established because its predecessor was too focused on facilitating market transactions, too close to the food and chemical industries and insufficiently focused on consumer protection. There is no evidence that innovation in the food sector is hampered by the limited availability of food additives. Consumers are not suffering because too few of their foods contain additives. On the contrary, additive-containing food products are amongst those most likely to contribute to over-consumption of fats and energy, and most consumers in the industrialised world would be healthier and wealthier if they consumed less processed food. To appreciate that, however, you need to read between the lines of this interesting but flawed volume.

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