

# THE FOOD MAGAZINE

INCLUDING  
CONSUMER  
CHECKOUT

WARNINGS ON  
SACCHARIN

FOOD POISONING —  
WHERE ARE THE  
GREATEST RISKS?

BST HORMONE  
FAILS TESTS

CHINESE TOLD TO  
AVOID MEAT

ORGANIC OR  
SUSTAINABLE  
AGRICULTURE?

GATT DEMYSTIFIED

NUTRITION A KEY  
TO BSE

RECYCLING TIN CANS

IS YOUR BREAKFAST  
CEREAL GREEN?

SECRET  
INGREDIENTS IN  
CHEWING GUM

PROTECTING  
DOLPHINS FROM  
TUNA FISHING

APPLES MAKE A  
COMEBACK

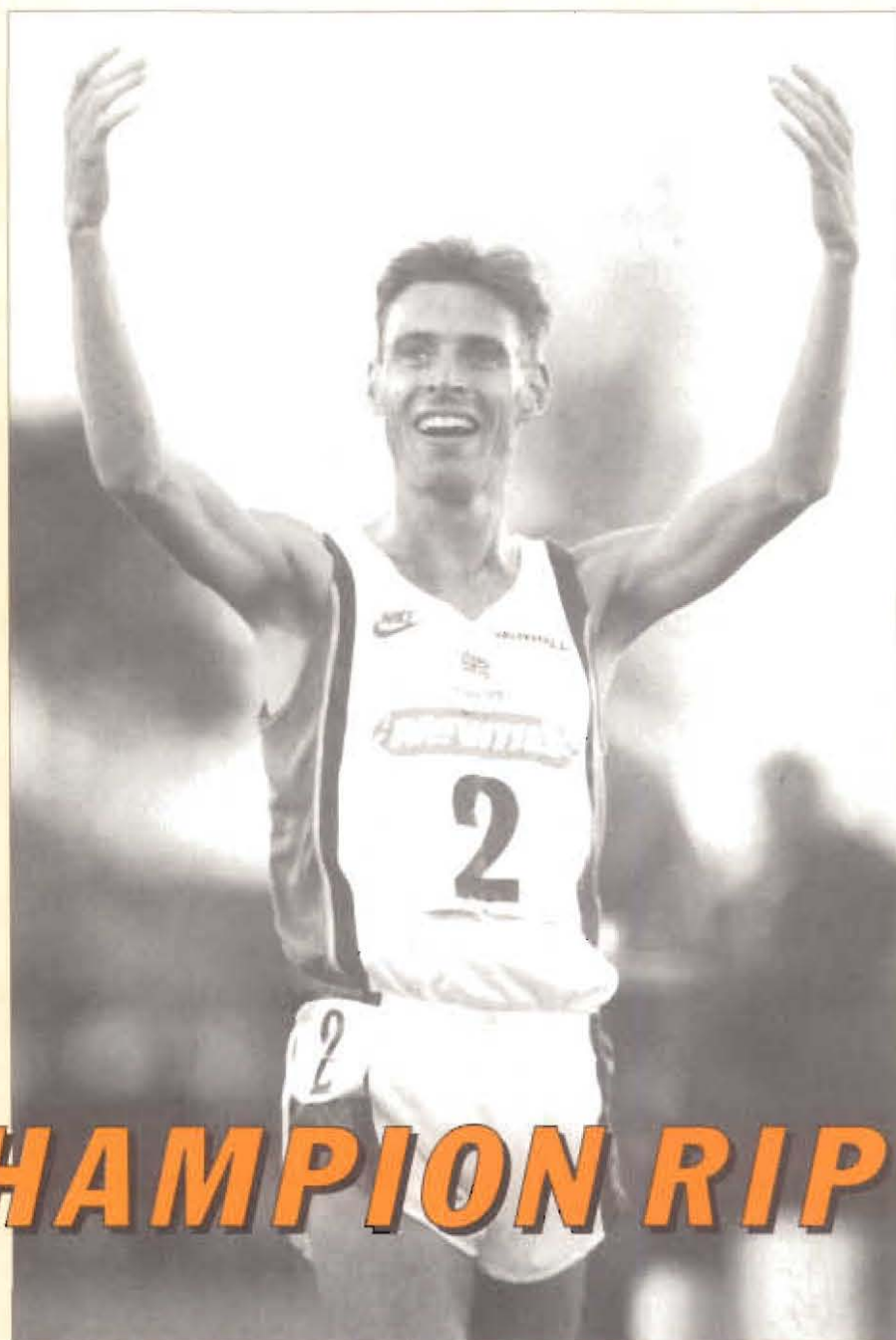
ARE THERE ANY  
MORE FISH IN THE  
SEA?

ADVICE OR  
ADVERTISING ? —  
SPONSORSHIP IN  
BABY CLINICS

FOOD HYGIENE IN  
THE CLASSROOM

UNCLE BOB'S  
AGONY COLUMN

BOOK REVIEWS



## A CHAMPION RIP OFF

ATHLETES THE LOSERS WHEN FOOD COMPANIES GO FOR GOLD

PHOTO: ALLSPORT/GRAY MORTIMORE



# THE FOOD COMMISSION

The Food Commission is your consumer watchdog on food. We are independent of the food industry and government and rely on subscriptions, donations and grants for our funding. We aim to provide independently researched information on the food we eat to ensure good quality food for all.

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## SUPPORT THE FOOD COMMISSION

Become a supporter and help ensure that The Food Commission continues publishing vital information on food quality and safety. With your help we can make public our research and investigations and continue our campaign for safe, good quality food for all.

### WE NEED YOUR HELP!

As a supporter you will receive free copies of The Food Magazine. Organisations are entitled to free bulk orders. And you will be listed as part of the network of The Food Commission.

To make your contribution please fill in this form and send off today to:  
Frances Smith, The Food Commission, 88 Old Street, London EC1V 9AR

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## EDITORIAL

# *We need your help!*



**F**or the last few years The Food Commission has led the field by providing consumers, health professionals and food workers with independent information and research giving the facts on food.

We know you care enough to ensure that The Food Commission continues to insist that food quality and safety come first.

There is still much more to do. But we have reached a point where we cannot continue and develop our work without your help. To keep our independent stance we cannot take money for our core work from vested interests — whether they are food companies or government. We have to rely on you, our supporters.

The Food Commission is launching an appeal for £150,000. If all our readers could spare us just a pound a week we can continue our research and information service. And by supporting us in this way you will continue to receive *The Food Magazine* — absolutely free.

So please, support us and remember — who will be your watchdog on food if not The Food Commission? We have already written to all subscribers but you can help us by passing the enclosed letter onto a friend.

### **Health or hype**

These are health conscious times — a fact that has not escaped advertisers' attentions. Never before have the opportunities for associating products with health been greater. And food companies know this better than most.

Hour after hour, TV ads show athletic performance improving after eating a product. Most of these ads reinforce viewers' confusion about energy, sugar and performance.

In this issue of *Consumer Checkout* we investigate specialist foods aiming to boost sports performance, and discover that most are a champion rip-off selling cheap milk powder and sugar at exorbitant prices.

But it's not just specialist products that are pulling a fast one. Top sports nutritionist Iona Smeaton explodes the marketing myth of isotonic and hypotonic drinks, shows you how to replace lost fluids without it costing you a fortune, and says a healthy diet for athletes is little different from a healthy diet for all.

Food companies are also some of the biggest sponsors of British sporting events. Whether it's Mars, Coca-Cola, McVities or Cadbury's, foods offering poor nutrition are being associated with sport, fitness and health.

But there are even more invidious sponsorship deals being struck. The government-funded Health Education Authority has turned to the food industry for sponsorship of its health campaigns. The companies benefit enormously by getting their products endorsed by the HEA. But what does the HEA get? Does it not lose much of its independent standing by associating itself with commercial interests in this way.

Health promotion costs money but the public purse is being tightened. So who produces today's health education materials? We report on a survey showing that over half the leaflets given out by health visitors in baby clinics are produced by commercial interests. Much of this material may be biased and misleading, and little more than advertising. Yet health professionals are implicitly giving this material their professional endorsement. You'll not hear food companies complaining of this arrangement.

But we will complain. Infant feeding is too important to leave to food companies, where sales come first. And in the long-run, baby clinics will be seen by the public as just another market place and health visitors seen as company reps.

From sports foods to baby foods, good nutrition and public health must come first.

**Sue Dibb & Tim Lobstein**



# SWEETENERS

## Campaigners to wage war on sugar advertising

**T**he campaign against junk food advertising to children, initiated by *The Food Magazine* earlier this year, is now having to be fought on two fronts — against sweet food commercials and against the new promotion of sugar itself, reports Jack Winkler.

On sweet foods, a formal proposal to revise the television advertising and sponsorship codes was submitted by Action and Information on Sugars (AIS), the specialist network of health professionals. The Independent Broadcasting Authority has asked for more evidence on the problem and concrete proposals for change. Both AIS and the Dietary Sugars Liaison Group of the British Dental Association will be making detailed submissions this autumn.

Meanwhile, the sugar industry has been stung into its first major advertising campaign by the COMA report's recommendation that everyone should eat less sugar. The industry launched a three-year, £12 million assault via television, newspapers and women's magazines. This campaign has produced a storm of protest from virtually every professional association concerned with children's health. The IBA rejected them all on narrow technical grounds.

This was just the first skirmish in

what looks likely to be a protracted war. The sugar industry let slip that the next phase of its campaign will be a direct attack on the most scientifically secure part of the entire COMA report, that sugar causes dental caries.

While AIS and the dental associations will counter-attack immediately, *The Food Magazine* readers can also play a vital role. The IBA maintains that it receives few complaints about sweets, sugar or any other food advertising. They try to evade the issue by claiming that the recent upsurge of protest has only come from professional associations, not 'ordinary viewers'.

So your personal complaints could help prove to the IBA what repeated consumer surveys have shown — that many people are concerned about British children's excessive sugar intake, stimulated by relentless advertising. If you object to any food ads, let the regulatory authorities know.

For TV ads, write to Frank Willis, IBA, 70 Brompton Road, London SW3 1EY. For print ads, contact Matti Alderson, Advertising Standards Authority, 2 Torrington Place London WC1E 7HN. For more information on the AIS campaign contact Action and Information on Sugars, P O Box 459, London SE5 7QA.

## Companies battle over aspartame markets

**N**utraSweet, US manufacturers of aspartame, have been accused of dumping their low-calorie artificial sweetener on the European Community market by selling aspartame at less than half the US price of \$160/kg. NutraSweet has a monopoly on the US market (estimated at 6000 tonnes) until 1992 when the US patent expires.

European companies say NutraSweet is abusing its power to force

its competitors out of the market before 1992. An Italian, an Irish and two South Korean companies have already ceased aspartame production and a Dutch company, the Holland Sweetener Company has started an 'anti-dumping procedure' against NutraSweet at the European Commission. The European market is estimated at 800 tonnes.

(*Biotechnology and Development Monitor*, March 1990)

## NutraSweet doubts continue

**D**oubts about the artificial sweetener, aspartame, sold under the name NutraSweet, continue. Six months ago *The Food Magazine* reported that the government's Committee on Toxicity was reviewing the safety of the sweetener following fresh evidence about the validity of animal toxicity studies.

Dr Erik Millstone of the Science Policy Research Unit at Sussex University has presented documentary evidence that aspartame was accepted in the UK partly on the basis of faked laboratory tests. An investigation by the Food and Drug Administration (FDA) in the USA in 1976 revealed that tumours were removed from laboratory animals during the course of the test and animals which died were restored to life in laboratory records. He is calling for the key tests to be repeated and for the Committee on Toxicity to publish the evidence on which it based its approval.

The FDA repeatedly requested that a grand jury be convened to consider charges of criminal fraud against G D

Searle, the developers of aspartame, but the statute of limitations was allowed to expire without reasons being given.

According to a report in *The Guardian*, more than 4,000 people have formally complained in the USA about adverse reactions to the sweetener, including headaches, dizziness, blurred vision and seizures. In the US more than half the medical researchers polled by the FDA in 1987 said they were concerned about NutraSweet's safety.

NutraSweet is now the most commonly used artificial sweetener in diet drinks and low sugar products. It contains phenylalanine, an amino acid that cannot be digested by people with the genetic disorder PKU, which is tested for at birth. Some medical researchers believe that many more people, other than those with PKU, are susceptible to phenylalanine. In the USA products containing NutraSweet must carry a warning about phenylalanine, but in the UK manufacturers such as Pepsi Cola, Robinsons and Schweppes have dropped the use of a 'voluntary' warning on their labels.

## Europe to harmonise on sweetener regulations

**A**s part of its harmonisation plans for 1992 the EC has been drawing up a new Directive on sweeteners. This seeks to introduce uniform regulations on permitted uses throughout the member states.

Manufacturers welcome the liberalisation that harmonisation will bring, opening up a market of 330 million consumers. Raine Jahn, the President of the Brussels-based International Sweeteners Association, has described Europe as 'the largest and possibly most promising single-target group in the whole world'.

Dr Martin Bangemann, Vice President of the EC Commission, adds that harmonisation 'will eliminate the kinds of regulatory discrepancies that are so costly to industries. Instead of twelve different authorisations, a manufacturer in the future will need

only one for the Community as a whole'.

But benefits for consumers are less certain. At present the twelve EC countries have differing regulations concerning the use of sweeteners. The UK, France and Portugal, for example, ban the use of cyclamate; aspartame and acesulfame-K are allowed in West Germany only by special dispensation and Belgium is the only country that allows neohesperidin dihydrochalcone.

The UK is known to have a more favourable legislative attitude to permitting the use of intense sweeteners, whereas West Germany has been slower to endorse new products. The industry sees Northern Europe as the main growth area for artificial sweeteners with the UK market dominating the future of new sweeteners.



# SWEETENERS

## Saccharin intakes exceed recommended levels

**T**he Ministry of Agriculture, Fisheries and Food (MAFF) has raised the recommended daily intake of the artificial sweetener saccharin to twice the previous level, after studies confirmed that many people are consuming more than recommended. MAFF's Committee on Toxicity approved a rise to a maximum recommended daily intake of 5mg per kilogram bodyweight, despite confirming their earlier opinion that saccharin caused tumours in laboratory animals.

Surveys of saccharin use in Britain showed that substantial numbers of people regularly exceeded the previously recommended level of 2.5mg/kg/day. World Health Organisation and EC recommendations remain at the 2.5mg/kg/day level.

Children under five have particularly

high intakes for their body weight — up to 6.28mg/kg/day. Soft drinks were the major source of saccharin for children surveyed aged two to nine. Above that age diet soft drinks are increasingly important. Unlike many other countries the UK permits intense sweeteners to be used in conjunction with sucrose in soft drinks.

For adults, table-top sweeteners were the major source of saccharin with some adults surveyed consuming more than 8mg/kg of saccharin per day. The relative ease of exceeding the WHO limit is illustrated by the example of a nine-stone woman who would need to consume only ten sweetener tablets a day, assuming no other saccharin intake that day. Diabetics also regularly exceeded recommended levels.

Speaking for the Food Additives Campaign Team, Dr Erik Millstone of



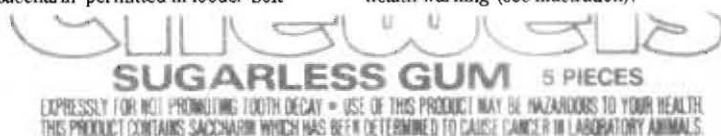
Just three teaspoons of a sugar-saccharin mix, or ten sweetener tablets a day, would exceed WHO and EC recommended limits for a nine-stone woman.

Sussex University suggested that the government was being 'less than candid in appearing to approve the general level of saccharin use by the device of doubling daily permitted intake'.

A new draft European Commission directive on artificial sweeteners has reduced the proposed levels of saccharin permitted in foods. Soft

drinks were originally to be allowed at 125mg per litre, but this has now been lowered to 80mg/litre. In future manufacturers are expected to sweeten their products with a mixture of artificial sweeteners.

In the United States products which contain saccharin are labelled with a health warning (see illustration).



Saccharin warnings on products in the USA.



Seven lumps of sugar and added saccharin in this children's squash. Why?



## BST gets the thumbs down

**B**ovine somatotropin (BST), the controversial milk-boosting hormone, looks unlikely to be used on Britain's dairy farms. At the end of July, the government's Veterinary Products Committee (VPC) announced provisionally that it is advising Agriculture Minister John Gummer to ban the commercial use of BST for boosting milk output.

The VPC is recommending that a licence be refused for manufacturer Monsanto's first genetically engineered farm hormone on the grounds of pharmaceutical quality and 'aspects of the safety of treated animals'.

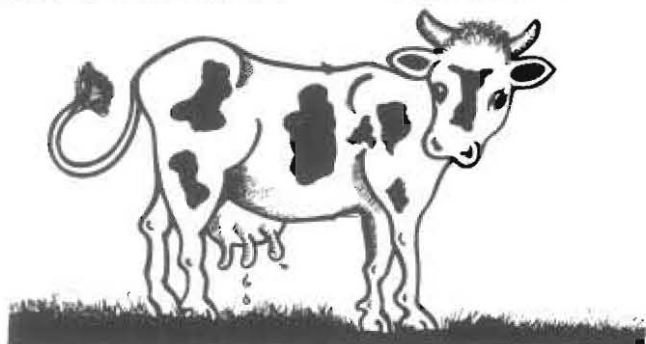
No information has been released about the specific grounds for these

placebo injected animals. Six of the eight trials showed a tendency to higher white cell counts in milk, indicating disease, from BST-treated cows; three of these results were statistically not significant.

The analysis provides strong evidence that BST, even when used under research conditions, undermines the health of the dairy cow. Advocates of BST previously claimed it had no ill-effects. In October 1991 quality payments to dairy farmers will be introduced throughout the EC based on low white cell counts in milk.

Monsanto's research suggests there may be a financial penalty to pay if BST is used commercially.

The campaign of public information



objections, but *The Food Magazine* has obtained evidence which confirms fears about raised disease levels in BST-injected cows. The results of Monsanto's trials at eight farms have been independently analysed to test for evidence of udder infection (mastitis) caused by BST. The data, based on 620 animals studied over a year, shows a marked increase in udder infection in treated compared with

about BST has been running since spring 1988. While the latest news is encouraging for those opposed to its use, the final decision is still some way ahead. Monsanto has the right of appeal, and may submit new data to support its case — and a decision in the UK against BST may be weakened if Brussels decides to give the hormone the green light.

## Listeria – not enough advice

**W**hile the risk of developing listeriosis for the average healthy person is very low, pregnant women and those whose immune systems are suppressed are at greater risk – with one in three cases proving fatal. Yet information and advice that would help reduce the risk of contracting the illness is not being provided, say the Listeria Support Group. They are calling for the

Department of Health to ensure more information is widely available.

The Listeria Support Group provides information and support to listeriosis victims and their families. To receive a copy of their leaflet on listeria send a large SAE to:

Listeria Support Group, c/o Worlingworth, Woodbridge, Suffolk, IP13 7NZ.

## Chew but don't swallow gum, warns MAFF

**C**onsumers have been advised by the Ministry of Agriculture, Fisheries and Food to avoid swallowing chewing gum and to avoid eating it with other foods. Chewing gum ingredients include mineral hydrocarbons such as paraffin, petroleum wax or vaseline.

Despite acknowledging early in 1989 that mineral hydrocarbons may be hazardous to health and should be prohibited from most foods and food processes, an exception was made for chewing gum, bubble gum and cheese rind. 'Mineral hydrocarbons have an important use, preventing the drying out of cheese and helping to provide for the chewing properties of the gum,' said food minister David Maclean. 'But I support advice to consumers not to swallow gum or eat it with other foods and to cut off the rind and outermost

2mm of cheese which has been wax coated.'

The Committee on Toxicity has classified mineral hydrocarbons as Group D, ie 'evidence suggests possible toxicity' and 'ought not to be allowed in food.' The Food Advisory Committee expressed concern that gum could disintegrate in the stomach and the ingredients absorbed. Eating food, especially fatty food, with gum was also a problem, as the fat can leach the paraffin wax out of the gum. The Committee on Toxicity has called for further studies to be reported within two years.

In the meantime the government has no plans to impose restrictions on the use of mineral hydrocarbons in gum, and no labelling of products with a hazard warning will be required.

• What's in chewing gum? See our Consumer Checkout feature pages 14-15.

## Pesticides found in London's water supplies

**O**nly one third of London's drinking water complies with EC drinking water standards. Sixty per cent of samples fall below EC standards because of pesticide residues, particularly from the herbicide weed-killers Atrazine and Simazine.

The results come from a six-month London-wide survey\* which sampled drinking water from 25 boroughs. Water was tested for a range of over sixty substances to see whether it complied with drinking water standards laid down in EC Directive 80/778. Tests included bacteria, heavy metals, pesticides, nitrates and aluminium monitoring.

The publishers of the report, the Institution of Environmental Health Officers, claim that local authorities and British Rail are primarily responsible for polluting London's drinking water with residues of the herbicides Atrazine and

Simazine. As the largest users of these herbicides, the report recommends that they should find an alternative.

Levels of nitrite, phosphorus and microbiological parameters also failed to comply with EC standards. But even in instances of non-compliance, no legal action can be taken. Under Section 20 of the Water Act, the Secretary of State has given dispensation to companies to postpone the implementation of the EC standards for up to ten years. However Friends of the Earth is preparing to take Thames Water to the High Court on the issue of pesticide residues.

\* *London's Drinking Water: Summary Report of Working Party of London Wide Drinking Water*, published June 1990 by The Institution of Environmental Health Officers, Chadwick House, Rushworth Street, London SE1 0QT (Tel: 071-928 6006).



## Food premises pose high food poisoning risk

A random survey\* of food premises has found that only four per cent meet food hygiene standards which would merit a Hygiene Award. Almost one in eight present a high public health risk; a third of these should be prosecuted or closed down.

Take-away establishments, food manufacturers and restaurants were found to pose the highest risk with nearly one in five failing to meet hygiene standards. The report says that the inadequacies of food manufacturers are of particular concern given that a failure of food hygiene in production could have widespread consequences. Hospitals, residential homes and schools were found to pose the least risk (see table).

Five thousand food manufacturers, catering establishments, supermarkets, hospitals and schools in England and Wales were surveyed by environmental health officers from 300 local authorities. A significant number of premises

had never been inspected by EHOs (five per cent); nearly half had not been inspected within the last year; and over ten per cent had not been visited for three years. These premises tended to pose a higher risk.

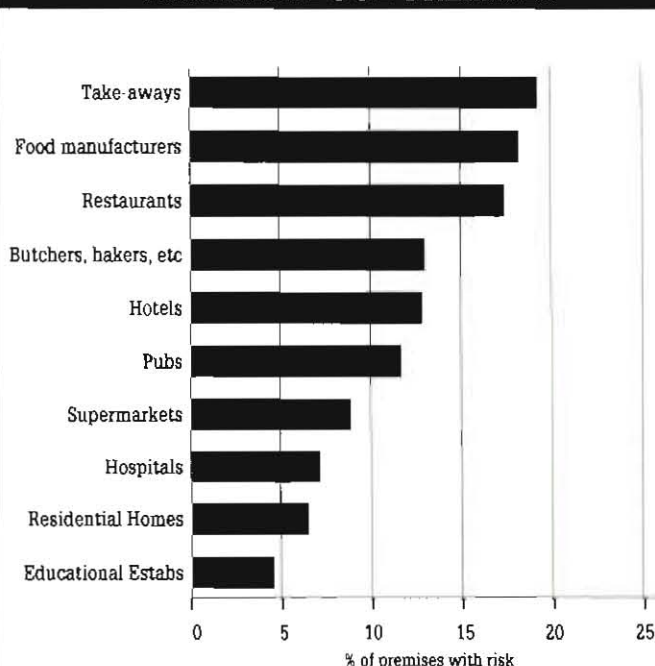
Large businesses were found to be no more or less safe than smaller operations.

The survey reveals the most common high risk factors as:

- poor hygiene awareness of both management and staff
- lack of effective monitoring of food temperature (for example refrigerators at too warm a setting)
- inadequate hand washing facilities
- cross contamination (for example, from using the same equipment to handle cooked and raw foods)
- management not regarding hygiene as an important priority.

• *Environmental Health Survey of Food Premises*, An Audit Commission Information Paper, available from HMSO price £4.00.

### HIGH RISK FOOD PREMISES



Source: Audit Commission

## UK falls below EC food analysis standards

The European Commission's Directive on the Control of Foodstuffs will require a substantial increase in the amount of food being analysed by public authorities in Britain. From the beginning of next year, food authorities (mostly local authorities) have been set a target rate of 2.5 samples per 1,000 population in the area per year. This figure applies to the analysis of food for composition, purity and labelling claims — sampling for bacteriological quality

and in response to consumer complaints is in addition to this target level.

Estimates made in the mid-1980s showed that typical rates of analysis in Britain were about 50 per cent of this target level, and it is widely believed that levels have fallen further since then. Figures suggest that at present approximately one sample of food is analysed for every £1 million spent by consumers — a figure far below that expected under EC guidelines.

## Chilled food regs disappointing

New temperature controls for chilled foods will be introduced next year. For the first time from next April environmental health officers will have new powers to prosecute if food is kept at unsafe temperatures during manufacture, distribution, storage or point of sale. While increases in food poisoning justify the new regulations, consumer groups and food law enforcement officers fear that the new rules are complicated, difficult to enforce and do not go far enough.

The new system of temperature controls is being introduced in two stages over three years. It will require ready prepared meals, soft cheeses, cooked meats, pâtés and prepared salads to be kept at or below 8°C from next April. Two years later foods most at risk of contamination with listeria, such as soft cheeses, pâtés and other prepared foods which are to be eaten without further cooking must comply with a stricter standard of 5°C, even though listeria can grow at temperatures as low as 3°C.

According to the Department of Health the delay in introducing the higher standard is to allow food businesses time to introduce improved refrigeration and monitoring controls. However, uncooked meat and fish which can carry potential food poison-

ing risks are excluded from the regulations.

Consumer bodies and environmental health officers are disappointed that the government did not opt for a universal 5°C limit which would have been safer, simpler to understand and easier to enforce. The Department of Health has also been criticised for the length of time it took to introduce these regulations.

Environmental Health Officers also point to a loophole that exempts from the regulations freshly prepared foods, such as sandwiches and cooked meat pies, if they are intended to be sold within a specific period of time. They feel these products will be impossible to regulate, as inspectors will be unable to ascertain the exact time of preparation.

Small delivery vans will only need to comply with the 8°C limit and will be exempt from keeping high risk foods at 5°C. It is unclear what the logic is behind this loophole, which effectively allows smaller businesses to transport food less hygienically than larger ones. A two degree tolerance will also be permitted for up to two hours, to allow for defrosting or for the temporary breakdown of equipment. Inspectors will find it virtually impossible to prosecute when such loopholes are allowed.



## Irradiated food here by January?

The government intends to allow irradiated food to go on sale from 1 January 1991. Draft regulations to control the labelling of irradiated food and the conditions under which the irradiation of food may be authorised were released by MAFF on 6 August.

Irradiated food for sale to the public must indicate on the label, or display where food is served, that the food has been irradiated or 'treated with ionising radiation'.

The regulations do not identify a method for detecting whether food has been irradiated and properly labelled. Proper labelling will rely on commercial goodwill and, according to both the leading irradiation company, Isotron, and the Institution of Environmental Health Officers (IEHO), the labelling requirements are unworkable.

Mr John Barker, managing director of Isotron, the second largest irradiation company in the world with five irradiation plants in the UK, claimed that labelling would be an inadequate protection against fraud. He added that consumers could not regard the lack of a label as an assurance the food had not been irradiated. He backed IEHO fears that inspecting and monitoring irradiated food will be unworkable.

According to the IEHO, no detailed guidance has been released by MAFF on who will check food irradiation plants. Incoming food will need to be checked to ensure irradiation is not being used to 'clean up' contaminated food. Dosage levels will also have to be monitored.

Post-irradiation inspection would then be needed to ensure treated food was not exposed to new contamination through poor handling. IEHO spokesperson Allan Johnson described the government's legislation on irradiation as a 'knee-jerk reaction to food poisoning scares which had not been blessed by any comprehensive planning.'

Consumers too remain concerned that irradiated food may pose a hazard to health. While such safety concerns have been dismissed by the UK government, they have been well recognised by those of Australia and many US states.

A draft EC directive listing foods approved for irradiation is currently being considered by the Council of

Ministers. The European Parliament has already voted to prohibit irradiation of foods with the exception of herbs and spices. The Council of Ministers, by contrast, appears to be in favour of preserving the original directive permitting the irradiation of a whole range of foods including pulses and dried vegetables. But Germany has indicated it may block the unanimous vote needed by the Council to overturn Parliament's decision.

If the Council fails to agree on a definitive list of permitted foods then the Ministry of Agriculture, Fisheries and Food has confirmed that, despite the vote of the European Parliament, starting next January it will permit the irradiation of fresh meat, poultry, fish, shellfish, spices, condiments, bulbs, tubers, vegetables and cereals. MAFF's draft regulations are currently being distributed for consultation, with a closing date of 24 October.

### Consumer action

The Food Irradiation Campaign's views on the government's proposals, endorsed by several consumer groups, have been published in an eight-page open submission to MAFF\*. In the view of the Campaign, the proposals are:

- *Premature*, as there remain serious unanswered questions about the safety of irradiated food
- *Misconceived*, as they rely on attempts to regulate the process rather than the product of irradiation
- *Inadequate* in their attempts to regulate companies engaged in the irradiation process.

Anyone concerned about the introduction of irradiated food should write to MAFF giving their views and, if this is after October 24 then they may also wish to complain at the lack of time available for consultation.

A campaigning kit, with examples of letters you can send and details of publications, is available from the Food Irradiation Campaign. Please send a large self-addressed envelope stamped for 27p (2nd class).

\* Copies of the submission to MAFF are obtainable from Martine Drake, Food Irradiation Campaign, 88 Old Street, London EC1V 9AR. £3.00 inc p & p.

## WHAT CHILDREN ATE FOR BREAKFAST

Per cent of each group of children (some ate more than one type of breakfast)

	Toast	Cereal	Cooked meal	Other food	Nothing
Boys 11-13	31	63	4	0	12
Girls 11-13	26	59	6	1	21
Boys 14-16	31	71	12	2	6
Girls 14-16	29	46	2	4	25

## Breakfast blues

University of Nottingham researchers have found large numbers of school children going without breakfast before attending school.

Staff in the faculty of Agriculture and Food Sciences surveyed nearly 500 secondary school children who rarely used the school canteen for lunch, and asked them what they had eaten for breakfast.

The table shows the sort of breakfast the children reported. High proportions — including more than a quarter of the

older girls — said they had eaten nothing at all. The proportion eating no breakfast tended to be higher among children in urban schools.

The researchers were concerned that if non-breakfast eaters did not buy snacks on the way to school or during the morning break, then they were effectively fasting since the previous evening meal. This could impair their academic and physical performance.

Details from AJ Neale, University of Nottingham, Loughborough, LE12 5RD (Tel: 0602-484848).

## New jobs in school meals

More than a 100 extra school meals staff are being taken on by Bradford City Council to cater for a surge in demand following a big price cut.

Former ruling Conservatives raised school meal prices to 80p two years ago, leading to a 10,000 reduction in the numbers of pupils taking school dinners. Now the incoming Labour administration are anticipating a substantial rise in

school dinners following their cuts to 60p in middle and upper schools and 50p in first and special schools.

Labour education chairman John Ryan anticipated a rise in numbers from 32,000 to at least 36,000. 'We want to make sure every child has a proper nutritious meal at lunchtime to help them learn and make the best of their education. School meals are now very good value for money.'

## Breastfeeders shown the loo

The results of a national survey by the Department of Health-funded Joint Breastfeeding Initiative (JBI) found many restaurants and cafes disapprove of breast-feeding at the table. Of 1,020 restaurants questioned, 46 per cent were unhappy to allow it, although very few could offer any good alternative facilities.

Asked if they offered private facilities for breast-feeding mothers, 17 per cent of the restaurant managers offered a mother and baby room, 11 per cent

offered a staff room while 72 per cent could only offer the toilet.

In a second survey of 4,000 people's attitudes to breast-feeding, 96 per cent said they did not disapprove of breast-feeding but 16 per cent said it was wrong in front of family or friends, 40 per cent said they disapproved in public places such as on the bus or in the park, and 50 per cent disapproved in restaurants.

Details: Dora Henschel, JBI, Alexandra House, Oldham Terrace, London W3.



## Chinese told to avoid eating meat

In one of the largest epidemiological surveys of health and diet ever undertaken, 14,500 Chinese are participating in a study jointly negotiated between the USA, the UK and China — a triumph of both science and diplomacy. Early results indicate a link between increasing meat consumption and a range of diseases, reports Alan Long.

The low mobility rate of the Chinese population allows the study of changing dietary patterns and their effect on health. Early results suggest

a close link between the 'diseases of affluence' such as heart attacks, diabetes and cancer, and a rise in the levels of meat consumption. Cardiovascular disease appears to be up to 50 times more prevalent in areas where more meat is eaten, compared with areas with a largely vegetarian diet, where animal fats contribute no more than 15 per cent of calories.

Dietary fibre intakes average three times the levels found in Britain or the USA. The survey will allay misgivings that such high levels could provoke intestinal problems or prevent the absorption of minerals. Haemoglobin levels, indicative of iron intake and absorption, were satisfactory among those consuming high levels of fibre.

Oxford University's Dr Richard Peto has expressed hopes that the Chinese will modify their diets towards plant and fish foods rather than

Western-style fats and sugars. Dr Colin Campbell from the USA has been advising the World Bank — a contributor to the study — not to

encourage a livestock industry in China. 'This study offers the Chinese an opportunity to learn from our mistakes,' he said.



PHOTO: Thapattana/Reuters

## Pesticide suppliers way ahead of MAFF

The introduction by the European Commission of legal Maximum Residue Limits (MRLs) for pesticide residues in British foods has led to a flurry of activity within the British fresh produce trade, reports Peter Snell.

MRLs are set by the Food and Agriculture Organisation (FAO) and the EC but so far few have any legal force in Britain, despite the fact that more than one per cent of British food samples have had residues in excess of such MRLs for many years. The British government has traditionally resisted the introduction of a legal duty on food suppliers to ensure that residues stay below the MRL.

Even now it is not inevitable that a food retailer selling a product with residue levels in excess of the MRL could be successfully prosecuted. If the company could demonstrate that all 'reasonable precautions' had been taken and that it had 'exercised all due diligence' to prevent excess residues, it

would not be guilty of an offence. For a retailer or a produce supplier, such a defence could be based on evidence that it checked that the agro-chemicals used by its suppliers were approved and that usage instructions were obeyed.

Produce marketing organisations have now established a Code of Practice which sets down minimum reasonable precautions which should be taken by all fresh produce suppliers. Its proposal that all suppliers, including presumably all growers, are inspected every three months sets inspection standards which are vastly superior to those currently operated by the Health and Safety Executive and MAFF. By requiring residue analysis to check usage records, it gives more effective backing to its own inspectors than is available to those of HSE or MAFF.

But perhaps this is all mere window dressing. Poor funding of residue analysis by local authorities will lead to very few prosecutions, even if the Code of Practice is ignored. However since

even the agro-chemical suppliers are now taking steps to reduce pesticide use, it would seem that they too recognise the need for change. A group of suppliers is now developing its own Code of Practice to ensure that:

1. Particular pesticides are only used when target pests exceed certain levels.
2. Spray equipment is checked at specified intervals to ensure it delivers the correct amount of chemical.
3. The use of chemicals for which there are particular environmental or health concerns is limited more strictly than MAFF regulations require.
4. The quantities of pesticide provided will be exactly the amount required for particular problems.

This group of chemical suppliers hope that the losses made on pesticide sales will be balanced by an increased advisory role to users. Many growers already seek to minimise their pesticide use purely for financial reasons. In future this could become a major marketing bonus. A grower who

exclusively uses pesticides prescribed by suppliers committed to reducing pesticide use, could be more attractive to retailers anxious to demonstrate 'due diligence' in its sourcing of produce.

### Straight talking by Gummer

During parliamentary question time on 1 March 1990, Mr Gummer, Minister of Agriculture, Fisheries and Food was asked by Dr David Clark MP if he will place copies of his correspondence he has had since 1 February with food retailers and manufacturers about pesticide residues in food, in the Library.

Showing all the concern for openness and co-operation for which he and his ministry are famed, Mr Gummer offered a one-word reply. 'No.'



# FARMING

## The hard road to sustainable agriculture

**At the end of August some 600 delegates from all over the world met in Budapest for the Eighth World Congress of the International Federation of Organic Agriculture Movements. Robin Jenkins reports on the major issues debated there.**

Ten years ago the Budapest Congress would have been inconceivable. Although only a minority of the delegates attending were organic farmers, the conference brought together campaigning organisations such as The Soil Association and research organisations like the Henry Doubleday Research Association and the Elm Farm Research Centre. Also present were academics from the increasing number of Universities researching organic agriculture, plus representatives from companies dedicated to the distribution and marketing of organic products.

One inevitable focus of debate was

the question of organic standards, inspection and control. The increasing number of diverse standards within and among different countries is certainly leading to confusion and also fraud.

But more important was the debate on fundamental definitions. In the industrialised world, organic farming means using no agrochemicals – but the organic farm is still highly mechanised and dependent on large inputs of fossil fuels. In the third world, organic farming means the continuation of traditional, labour intensive, permanently sustainable agriculture which is self-sufficient for all necessary inputs – seeds, manure, compost, home-bred draft animals and their feed. Third world delegates rightly criticised the highly mechanised, capital intensive type of organic agriculture practised in countries like Britain. They pointed out its reliance on imperialist military power to maintain its energy inputs. Ultimately, they argued, it is unsustainable because of its dependence on finite fossil fuels.

The energy issue re-appeared in a discussion of processed organic food. It was generally agreed that products requiring high inputs could hardly be classed as organic, however clean or safe

they were in terms of pesticide residues, added chemicals or the use of artificial fertilisers. That debate will continue. In the meantime, the sharp differences between first world and third world organic farmers raise both political and economic issues that need tackling directly. The implications are far-reaching, as can be seen from the table comparing energy inputs and outputs for manual sustainable agriculture, mechanised organic agriculture and

well, it hardly bears comparison with the productivity of either organic or chemical mechanised agriculture.

The implication is clear. Until such time as farmers are rewarded for energy efficiency rather than economic efficiency, we shall never have a sustainable agriculture in Britain. Furthermore, the only way of increasing the energy efficiency of British agriculture is to make it more labour-intensive. This would create many more jobs on the

**Input/output analysis of agriculture in energy units**

	manual/ organic	mechanised/ organic	agri-business
energy ratios	1:12	1:6	1:3
labour productivity	1:15	1:3300	1:3500

modern agribusiness.

Third world peasant farming without agrochemicals or machinery is by far the most efficient method of farming that we know: mechanised organic farming is only half as efficient and modern agribusiness is fast becoming an energy sink. However, farmers are not rewarded for energy efficiency. They are rewarded for labour productivity and returns on capital. Although peasant farming is productive enough for everyone to eat

land and repopulate our deserted and sterile countryside.

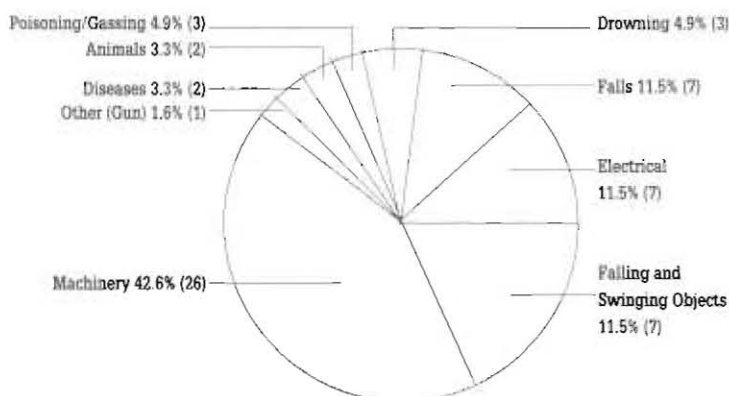
Ironically, in Budapest, it was our hosts from the second world – the eastern bloc countries – who ended up somewhat disoriented and confused. Americans, West Germans, Scandinavians and the British all lectured them on the stupidities of a free market in food and the unsustainability of first world methods – just at a time when they are being urged to take that road.

## The fatal farmyard

Deaths and injuries on the farm continue unabated. A total of 657 deaths were reported for the decade 1979-89, including 86 children. During 1989-90 alone 54 adults were killed, compared with 44, 48 and 47 in the previous three years.

Carl Boswell, the Health and Safety Executive's chief agricultural inspector, expressed concern that the figures were the highest since 1985. 'The tragedy of these statistics is that those who investigate the fatalities often discover that they are the result of foolhardy and sometimes criminal actions and that those who played a part in them bitterly regret their apathy and complacency,' he said.

Admitting that inspectors had to



**FATAL ACCIDENTS AND DISEASES 1989/90**

adopt a high enforcement profile, Mr Boswell stressed that they could provide help and guidance when that was needed. He claimed that from time to time an inspection 'blitz' was mounted.

According to the Institution of Professionals, Managers and Specialists (IPMS) who represent safety inspectors,

the numbers of agriculture inspectors has fallen from 190 to less than 160 during the 1980s. Excluding non-field staff, the number of inspectors was as low as 139 in 1988, down by four from the previous year.

With an estimated 300,000 separate premises, and a workforce of nearly

700,000 people, agriculture represents one of Britain's largest industrial sectors. Inspectors have a target of 220 farm to visit each year. IPMS estimates that a typical farm would expect to see an inspector less than once every nine years, an estimate confirmed by the inspectorate's own figures showing an annual 30,000 inspections during 1987-8.

The Food and Environment Protection Act of 1984 has led to an increase in the range of duties for agricultural inspectors. But no guidance has been given concerning their present Health and Safety at Work Act duties which should be dropped to cope with the workload. Occupational safety regulations, particularly regarding the safe use of chemicals such as pesticides, have also been added to workloads. The IPMS argues that insufficient resources have been allocated to ensure adequate monitoring and enforcing of these regulations.

Sources: *Fatal Injuries in Agriculture 1989-90*, HSE, 1990; *Health and Safety*, IPMS, 1989.



# GATT wields a double-edged sword

**As GATT begins to embrace agriculture and the free trade lobby, Simon Handscomb of Food Matters Worldwide, looks at the implications.**

**I**n the aftermath of the Second World War the USA, Britain, India and 22 other countries signed a General Agreement on Trade and Tariffs to help promote free trade between themselves. They committed themselves to a gradual reduction of trading barriers, by successive rounds of bargaining. They established a common set of trading rules for settling trade disputes as an alternative to import restrictions, quotas or other forms of trade protection, such as led to trade conflicts like the 'Cod War' with Iceland.

Since 1947, 80 other countries have joined GATT, many of them from the third world. Twelve others, including the USSR, have recently applied for membership. The third world members now include some very economically successful nations, many of whom are now competing with the first world. They have generated successful, unsubsidised industries and are rightfully demanding a share of world markets previously dominated by first world industries such as agriculture and textiles. These have been traditionally protected from foreign competition — a process many countries consider unfair.

It was in this context that the current GATT negotiations were launched in 1986. This, the seventh or 'Uruguay' round is due to finish in December 1990 and is quite different from previous rounds. Firstly trade in agriculture, textiles, services and intellectual property is now to be put under the GATT rules. And secondly there is strong representation from the third world, for the first time, mostly in the form of the Cairns group. This is a grouping of countries, including Brazil, Argentina and Thailand, whose unsubsidised agricultural policies have given them something in common.

Of all the issues on the GATT negotiating table the most contentious is that of agriculture. The USA, with the support of the Cairns groups, has pushed most strongly for its inclusion. At stake is the \$275 billion per year that is spent on agricultural subsidies worldwide. It's proposed that all agricultural subsidies be phased out over the next ten years, to be replaced with tariffs (the only barrier to trade which GATT recognises) subject to GATT rules.

This will have far reaching consequences, especially for the EC and its Common Agriculture Policy. Not surprisingly the EC has strongly resisted the changes being pushed by the USA. However the EC stands to gain a great deal from the inclusion of intellectual

property and services under GATT, so it has already agreed to provide more market access and reduce internal support measures. The EC is now negotiating a reduction in agricultural export subsidies and has offered a 25 per cent reduction over five years. The US has turned this down, confident that a desire to complete the round will produce a better offer. Though a complete removal of farm support is unlikely, a process of farm support reduction will certainly be started.

It follows there will be some fairly profound effects on farming. The removal of subsidies will most affect farmers whose living is already marginal, such as those on hill farms. Farmers who are at the moment getting by, will find it more difficult to make a living from the conventional use of their land. They will be forced to change. We can already see this process under way, with farmers diversifying into non-traditional practices such as organic farming, specialist high value farming (for example rare breed meat) and areas such as tourism and leisure.

However free trade in farming will also bring less desirable results. Larger, more profitable farms will increase their production and retain their profit margins, by raising their inputs of machinery and chemicals and by farming more land. There is a precedent for this in the way US farming has changed in the 1980s. Many farmers have gone out of business, farm size has increased and farming has generally become more and more an agribusiness, relying on intensification to maintain its competitiveness. The USA is already in a good position to reap the maximum reward from free trade in agriculture.

Agricultural free trade will open up the European food markets to third world and Eastern bloc produc-

ers. Many of these farmers produce food more cheaply than we can — and badly want access to lucrative European markets as a source of desperately needed foreign exchange. The inclusion of agriculture under GATT will also allow countries to demand compensation for the dumping of cheap food onto their markets, a practice which undermines local food security, uses up foreign exchange and depresses market prices.

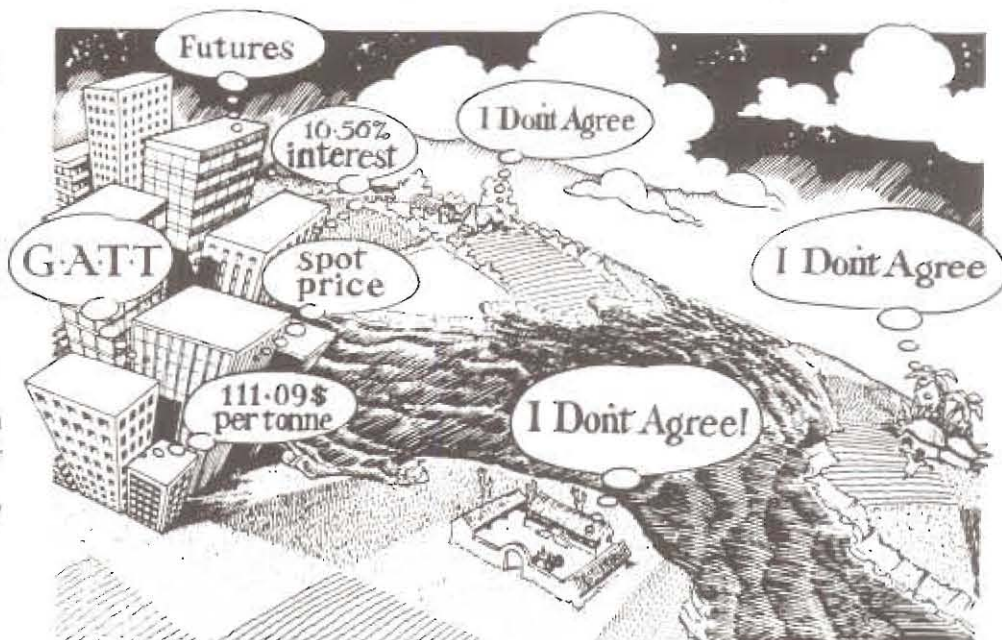
One other effect is that many agricultural producers will grow more crops for export. The expansion of farming will increase the destruction of environmentally sensitive areas such as rain-forest, arid and coastal lands. Higher production will encourage greater chemical use, reduce the crops grown for local food and increase the number of landless people who either become agricultural labourers or move to the already overcrowded cities of the third world.

There is therefore a deep conflict between the economic benefits and environmental dangers of liberalising world agricultural trade. The most important issue in the next round of GATT talks must surely be the introduction of controls to protect the environment.

Food Matters Worldwide can be contacted at the Development and Environment Centre, 38-40 Exchange Street, Norwich (0603-761645).

Consumer and environmental organisations worldwide fear that GATT standards will erode and overrule individual countries' own stricter standards of environment and consumer protection.

GATT negotiators are being urged to integrate environmental and consumer protection into the final agreement of the Uruguay Round. Copies of an open letter are available from Tim Lang, PSF, Tel: 081-748 9898.





# BSE

## Nutrition the key to BSE

**A healthier diet might have prevented cows from catching BSE. The disease could have started, argues Professor Michael Crawford of the Zoological Society, because a lack of essential fatty acids in the diet opened the way to new forms of brain disease.**

**T**he integrity and function of the brain depends on a specific profile of fatty acids common to all species so far studied. A lack of the essential fatty acids needed for brain and nerve cells results in a loss of integrity, cell number, and cell function.

The last two decades have seen an intensification of animal husbandry and a shift in the composition of cattle feed. Protein content has been increased and the essential fatty acid components reduced.

A lack of essential fatty acids has already been shown to lead to brain disease. Crazy Chick Disease or Nutritional Encephalomalacia (NE), which was originally thought to be caused by vitamin E deficiency, is actually induced by deficits of both vitamin E and one of the essential fatty acids (alpha-linolenic). The latter has been found to protect against the disease, even in the absence of vitamin E. Furthermore a form of inflammatory brain damage, experimental allergic encephalomyelitis (EAE), can be induced in laboratory animals only when essential fatty acids are removed from the diet.

Although no similar experimental studies are available in ruminants, it is plausible that depletion of neural fatty acids might render cows susceptible to neural offensive agents such as those thought to cause bovine spongiform encephalopathy (BSE).

The cow is a herbivorous ruminant, the diet which is on the borderline in the supply of essential fatty acids. The neural fatty acids are synthesised from two parent essential fatty acids: alpha-linolenic acid, which occurs

in green leaves, and linoleic acid found predominantly in seeds. These two fatty acids are converted and incorporated into neural cell membranes.

Cows evolved utilising the 'green nutrient cluster' found in green leaves, which includes alpha-linolenic as the major fatty acid, vitamin E, beta-carotene and vitamin C. Manufactured animal feeds have moved away from this 'green nutrient cluster' principle: first to the use of seeds in the form of 'high energy feeds' and later to the use of animal protein. Both shifts overlook the role of essential fatty acids and the 'green nutrient cluster' in ruminant physiology.

The cows' need for essential fatty acids is likely to be of special relevance to the brain, the most membrane-rich organ in the body. So did the reduction in essential fats and the increased use of animal protein alter the cows' susceptibility to BSE?

It is thought that BSE stems from the replacement of soya protein with animal protein in about 1981. The disease evidently has a long incubation period. The Southwood Report comments that 'in every case of BSE investigated so far, animal protein has been fed'. The Report goes on to say that in a 'small number of herds in which this has not happened none of these animals have developed the disease'.

It is already established that domestic species differ

in the fatty acid composition of their cells compared to wild species in their natural habitats. Furthermore, data on zoo animals shows that feeding changes in the captive environment have resulted in a loss of essential fatty acids — particularly the parent n-3 fatty acid (alpha-linolenic) and its derivatives from the 'green leaf nutrient cluster'. Liver was the only tissue analysed in detail to make this comparison, but it is the organ which secretes fats for other organs to utilise. The depletion is most marked in the case of alpha-linolenic acid content. The changes are similar to those reported for Crazy Chick Disease where there is a specific loss of n-3 fatty acids in both liver and brain.

The differences in the wild and captive zoo species described here are, by comparison with the experimental data, large enough to suggest that changes in captive animals' diets could undermine the integrity of their brain membranes.

By inference, similar and possibly more intensive changes in diet, resulting from the use of domestic cattle feeds, could have had the same effect. Loss of integrity at the intestinal barrier and the blood-brain barrier may have facilitated the absorption and access to the brain of a neurally offensive agent — such as that causing BSE. Cattle may thus have been rendered more susceptible to this sort of disease.



*Grass? I don't bother.*

*Not since they started the meals-on-wheels!*



# CONSUMER CHECKOUT

The Food Magazine's special supplement and guide to brand name products

## A CHAMPION RIP-OFF

**Sports foods and drink manufacturers are muscling in on a lucrative market but our future winners may be the losers**

Sports food manufacturers must think athletes are all brawn and no brain. Asking them to pay over £4 for just nine ounces of milk powder, £5 for just twelve ounces of sugar or an incredible £6 for a ten ounce mix of the two is a champion rip-off. Yet health food and sports shops are happily selling fancily-packaged products for just these sort of prices, and the would-be Rambos are paying up.

In our Consumer Checkout special feature we investigate products aimed at athletes and take a close look at their ingredients. Some take the form of sugar, milk and a vitamin pill. Some don't even offer the vitamin pill.

Many use a range of food additives including preservatives, colourings and artificial sweeteners. One product happily boasts 'Artificial Additives Free'

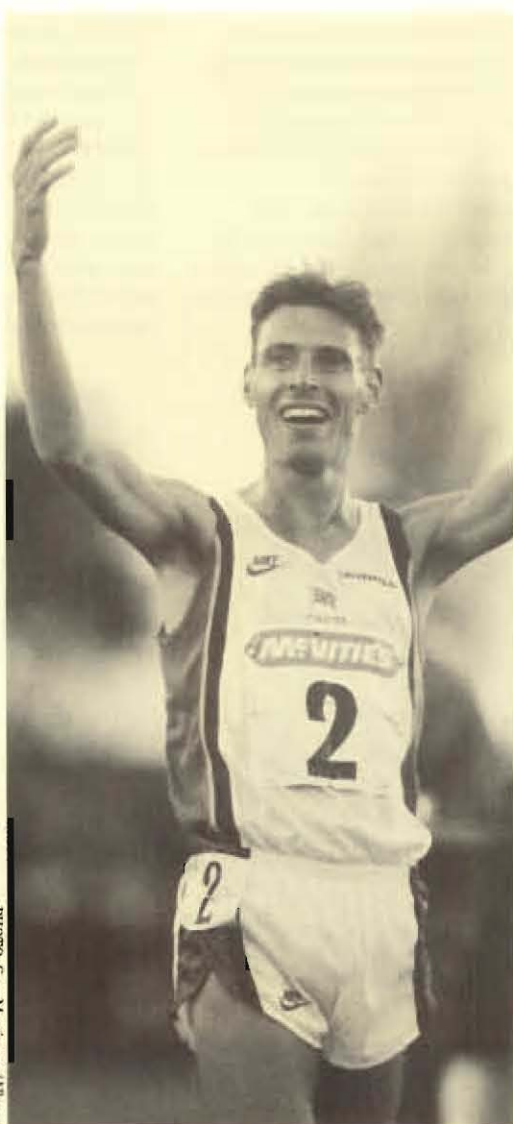


PHOTO: Gary Mortimer/Allsport

despite containing around 100mg of the artificial sweetener aspartame.

Hard physical exercise uses up the body's fluid reserves, and water in particular needs to be replaced before dehydration affects performance. Sports drinks compete with each other to be the most 'isotonic' or 'hypotonic' thirst quencher available, at prices approaching vintage wine. Yet the same effect can be achieved with a glass of water, a teaspoon of sugar and a pinch of table salt.

And while specialist products offer themselves at inflated prices, commonplace foods offering poor nutrition try to sell themselves as the athletes' friend. Footballer John Barnes, in the England team that narrowly missed winning the World Cup, has been on our screens promoting sugared

In this issue of Consumer Checkout we look at:

- Sports nutrition – the food companies go for gold
- Don't swallow chewing gum – it may be 20% paraffin
- Recycling tin cans
- Kellogg's spurn recycled packets
- 2000 apples varieties reach for the sky

water as if his career depended on it. Cadbury's sponsor swimming and Mars has sponsored the marathon.

Even sporting premises, sports centres and swimming pools, offer little more than cola and confectionery — nutritionally poor products — from a vending machine.

Health education in sports has been swamped by commercial interests. Nutritional science for athletes has been submerged under product claims. The losers are the very people who are trying to be fitter and healthier and, despite the odds against them, hoping to be winners.



# Sports nutrition

Aspiring athletes are being offered a bewildering array of products and conflicting information on which foods will help them win. Consumer Checkout invited Iona Smeaton, community and sports dietitian, to examine the commercial promotion of sports foods.

Over recent years sport has seen something of a mass revival in Britain. First of all it was the jogging craze, soon to be followed by aerobics and weight training, with gyms blossoming on high streets everywhere. Now it is callanetics, lambada dance classes and cycling on your ATB (all terrain bike, to the uninitiated).

As with any popular pursuit, it has not taken long for manufacturers to target these new activities and create products without which, if you believe their advertising, one couldn't possibly participate in the sport to the full. Dietary products are no exception. A range of foods, drinks and supplements have been launched which are being advertised specifically for their role in improving sports performance and promoting recovery from exercise.

Take sports drinks. There are an increasing number of drinks being marketed for consumption before, during and after exercise. 'Lucozade Sport' for example, an 'isotonic' drink (ie it contains the same number of dissolved particles as plasma) was launched in February. It's currently promoted by England footballer John Barnes, in a £2 million advertising campaign which coincided with the World Cup. This product, according to the advertisement 'gets to your thirst — fast'. It is a mixture of sugar, salt and water with a little vitamin C for good measure. It costs about 33 pence from supermarkets, but the price rockets up to 75 pence a can in many health clubs and sports centres. Yet an equivalent mixture can easily be made at home at a fraction of the cost.

Another drink, advertised as 'the only drink that meets the needs of the most demanding, professional sportsmen and athletes' is Dexters. Advertisers claim that it's what Pat Cash and Sharon Davies turn to after sport. It is also a mixture of sugar, salt and water, but in this case the mixture is 'hypotonic' (ie it contains fewer dissolved particles than plasma). The advertising for this product interestingly chooses to emphasise that it is low in energy, whilst 'replenishing essential minerals'.

But are these advertising claims true? Or might they be misleading? Do they in fact give the consumer the wrong impression? There is no doubt that dehydration impairs performance — therefore anything which decreases dehydration will help maintain optimum performance for longer, though it does not improve performance per se.

What should people taking part in sport really be drinking? In many ways it depends on how strenuous the exercise is, how long it is carried out for and personal taste.

## Replacing fluid

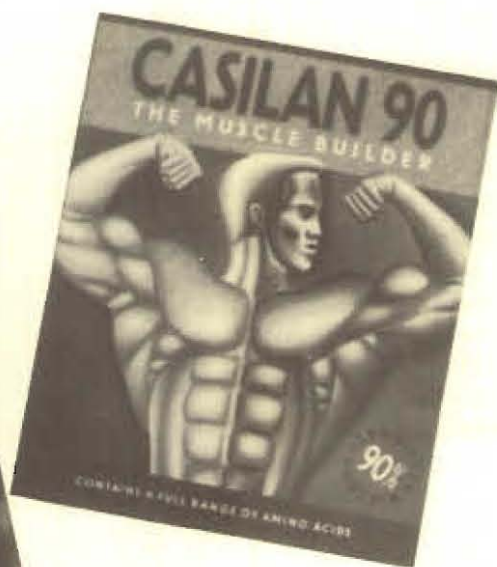
During exercise, as sweat is lost the volume of plasma decreases and the concentration of electrolytes in the plasma generally increases. Therefore fluid replacement should primarily replace water, since electrolyte losses are not a priority. In endurance exercise (generally lasting longer than two hours) there is often a need for extra energy as well. This can be provided by drinks, but the higher the concentration of sugar in drinks, the longer the solution stays in the stomach before entering the small intestine and being absorbed. Therefore the uptake of water into the blood is slowed down by sugar. A balance has to be struck between the need for water and the need for extra energy.

Water is released from the stomach very quickly and is absorbed from the small intestine quite quickly too. It is cheap and plentiful. However, it is absorbed even more quickly if there are small amounts of glucose and electrolytes present as well, so long as the fluid remains hypotonic with respect to plasma. Therefore, where there is a need to maximise water uptake, drinks should contain less than 4g of glucose per 100ml of water, together with small amounts of electrolytes, particularly sodium and chloride.

This type of drink can easily be made at home using one part of unsweetened fruit juice diluted with at least two parts of water and a small pinch of ordinary table salt.

If possible, any drink should be cooled slightly (to approx. 11°C) since there is some evidence that this can increase the rate at which the fluid is emptied from the stomach.

If more energy is required during a long period of exercise, and water uptake is less of a priority, then a stronger sugar solution can be drunk. However some very high concentration sugar solutions can actually increase dehydration in the short term. Regular Lucozade for example, at 19 per cent sugar, draws water from the body back into the stomach in order to dilute the drink sufficiently, before the whole mixture is re-absorbed some time later.



Sports products sell milk powder at £8 per lb and sugar at nearly £7 per lb — using cheap ingredients to masquerade as sports science.



# vs food companies

Sports drinks and sports foods sell cheap ingredients with a sprinkling of vitamins at highly inflated prices. Compare the brands:

Product	What you pay	What you get	Beware
Gatorade (Quaker Oats)	£5.50 for 520g	Sugar (90%), food additives, salt, fat	5-6 sugar lumps per serving
Olympian Muscle Builder (Weider)	£5.99 for 300g	Milk powder, sugar, dried egg, food additives, vitamins	Artificial sweetener aspartame*
Break Through (Weider)	£5.29 for 360g	Sugar, salts, food additives	7-8 sugar lumps per serving
Casilan 90 (Crookes)	£4.50 for 250g	Powder milk protein, food additives	
Top Form (Multipower UK)	50p for 45g	Sugar, food additives, vitamins	16-17 sugar lumps per serving
FRN Squeezy (Lepin UK)	£3.80 for 350g	Sugar and starch, water, food additives, vitamin C	10 sugar lumps per serving, artificial sweetener acesulfame*, tartrazine colouring*, sulphite preservative*
Fit Protein (MultiKraft)	£1.99 for 500ml	Milk, sugar, food additives, salt, vitamins	24 sugar lumps per serving
Dexters (Callitheke UK)	65p for 250ml	Water, fruit juice, food additives, salts, vitamin C	Artificial sweetener aspartame*
Isostar (Wander)	70p for 250ml	Water, sugar, fruit juice, food additives, vitamins, salts	7 sugar lumps per serving
Lucozade Sport (Beecham)	48p for 330ml	Water, fruit pulp, sugar, food additives	8-9 sugar lumps per serving, artificial sweetener aspartame*, benzoate preservative*

\* Artificial sweetener aspartame is under suspicion of provoking neural problems such as headaches and migraines, while acesulfame-K is banned in several European countries and the USA as a possible carcinogen. Tartrazine colouring has been linked to allergic reactions such as asthma and eczema and possible hyperactivity in children. Benzoate preservatives are similarly linked to allergies, and sulphite preservatives are known to provoke asthmatic attacks, occasionally severe, in susceptible individuals.

However the strong association between Lucozade and elite sports performance was initiated with advertisements featuring Daley Thompson, the Olympic decathlon champion, in the 1980s. A very successful campaign it proved to be too: in 1979, sales of Lucozade were worth £15 million; this year they are expected to exceed £120 million. Lucozade enjoys an eight per cent share of the UK soft drinks market and its advertising budget this year will be £18 million.

Sports performance has been used by many other food and drink advertisers to promote their products. You only have to watch commercial children's television for a short time to see a host of advertisements showing an increase in athletic performance after consumption of particular products; blackcurrant berries winning races after having a drink of the purple, 16 per cent sugar liquid; tigers on skateboards doing breathtaking acrobatics and crossing the line first, after a bowlful of the essential sugar-coated cereal; and of course the chocolate bar which helps you 'work rest and play'. All of these reinforce public confusion about energy, sugar and the ability to work and exercise.

These same companies are also some of the biggest sponsors of British sporting events. Mars was the 'official snack food' of both the Round the

World Yacht Race and the England World Cup team; Cadbury's has sponsored the Amateur Swimming Association; Kellogg's sponsored the Round Britain Cycle Race; and Lucozade Sport sponsor British Athletics (a fact printed on every can). It also sponsored a national programme for children's sport in schools this summer.

Certainly some of these sports would suffer without the support of sponsors, but the involvement of food and drink companies in elite sporting events gives them a credibility that cannot be justified. Such involvement implies that the products are a valuable part of elite performer's diet, which he or she relies on in order to succeed. But many of these products are high in sugar, reinforcing the myth that it is only sugar which can give energy to exercising muscles.

## High fibre foods

In reality a diet which broadly follows NACNE recommendations is perfectly suitable for the majority of sportsmen and women during training. Their biggest priority is to eat enough carbohydrate — if they choose higher fibre starchy carbohydrate foods, plus a variety of fruits and vegetables, this will not only increase their carbohydrate intake but also their vitamin and mineral intake. The combina-

tion should compensate for any additional requirements they may have for these elements as a result of higher energy expenditure.

Until the role of nutrition in achieving peak performance is given more priority in Britain, confusion will reign over what is right for athletes to eat. Everyone from the average punter at the local sports centre through to Britain's hopes for future Olympic medals will suffer as a result.

Perhaps the Sports Council could do more. Appointing a full time dietician to work for the flagging Sports Nutrition Foundation would be a good start; and a more prudent choice of sponsors for sports events, particularly for those involving children, would be a good idea. The government could also be more stringent about the legality of dietary claims printed on the labels of foods and drinks, particularly suggestions that they can alter or improve performance. The IBA and ITC could be equally stringent when it comes to advertisements promoting similar misconceptions on television and in the cinema.

The excellent advice given by sports nutrition experts should not be undone by misleading and inaccurate advertisements. Good nutrition has a great deal to offer sport — it just has to be given the right chance.



# Chewing

The government's recommendation that we should avoid swallowing our chewing gum says little about the reasons why. Checkout investigated gum's secret ingredients.

Chewing gum packs are small, and the ingredients list is inevitably in tiny print. Yet many ingredients are not being specified at all, so the innocent chewer has no way of knowing what hazards the pack may contain.

A typical chewing gum or bubble gum consists of sugar or sweetening agent, flavouring agents, colouring agents and anti-oxidants, all blended with a gummy mixture called a 'gum base'. It is the gum base that the government's Food Advisory Committee said was a possible hazard. Animal, vegetable and mineral products can all find their way into this blended base. Most have not been tested - some of them are probably harmless but

some are known to be a possible hazard. But for the consumer this blend of up to 40 different chemicals can all be referred to on the packet by the one term 'gum base'.

The Food Advisory Committee was particularly concerned about the use of mineral hydrocarbons in gum base. They typically constitute 20 per cent of a gum base and may actually account for 60 per cent without exceeding legally permitted levels. These chemicals are better known as paraffin wax or vaseline. Their use in other foods and food processes - for example as lubricants to grease cake and loaf tins in large bakeries - has already been restricted. The Committee on Toxicity has classified mineral hydrocarbons as Group D, ie. 'possible toxicity' and 'ought not to be allowed in food'. They also considered evidence which suggested that gums may disintegrate in the stomach and the products may well be absorbed.

Chewing gum manufacturers have resisted attempts to ban the use of mineral hydrocarbons in gum, pleading that there is no alternative. So the government relented, giving them a two year period to offer evidence that mineral hydrocarbons in gum base are safe. MAFF simply advised consumers not to swallow their gum or chew it with other food - fatty foods such as chocolate can leach the hydrocarbons out of the gum. MAFF has no plans to insist that warnings are put on packets.

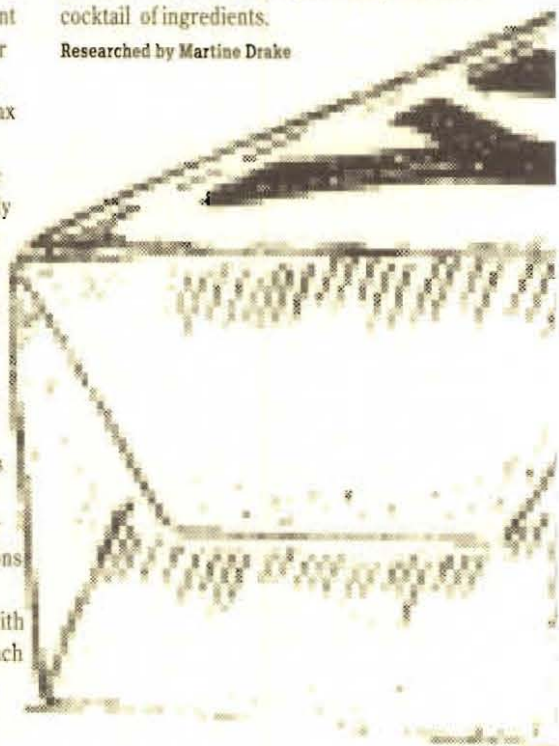
In the meantime there is no requirement for manufacturers to tell you what is in their gum base. There is no requirement even to label the product 'contains mineral hydrocarbons' or any similar phrase.

We talked to two leading manufacturers, Hall Brothers in Manchester and Wrigleys in Plymouth. Wrigleys admitted their products contained mineral hydrocarbons, but that they could not say how much, as their supplies came from a French company and the exact composition

was unknown. Hall Brothers refused to tell us the ingredients used in their gum base.

Besides mineral hydrocarbons, various other gum ingredients give cause for concern. Colourings, flavourings, anti-oxidants and artificial sweeteners could create a potentially hazardous cocktail of ingredients.

Researched by Martine Drake



## Added sweetness

The European Directive on sweeteners in food gives recommended maximum levels for various artificial sweeteners in chewing gum.

For a typical 25g packet of gum, the amounts proposed are:

**130mg aspartame**, also known as NutraSweet.

Safety data continue to be disputed.

**50mg acesulfame-K**. Banned in France and the USA as a suspected carcinogen.

**75mg cyclamate**. Currently banned in the UK.

**30mg saccharin**. Causes tumours in laboratory animals.

Current levels of sweeteners in gum are thought to be higher and manufacturers want to see the Directive limits raised by 50 per cent.

(For more on sweeteners, see our news feature earlier in this issue of *The Food Magazine*.)

## EXPANDING MARKET

Britons chewed their way through £90m-worth of chewing gum and bubble gum in 1989, with US giant Wrigley claiming nearly 90 per cent of the sales. Wrigley's Plymouth factory is reported to produce 15 million sticks of gum every day.



# on danger?



**Colouring:** Typical colourings may include Titanium dioxide (banned in several countries), tartrazine (linked to allergies and hyperactivity), amaranth (suspected carcinogen banned in several countries), erythrosine and indigo carmine (both suspected carcinogens banned in some countries).

**Anti-oxidant:** BHT (E321), known to cause birth defects in experimental animals, it is permitted in chewing gums at far higher levels than in any other food product.

**Sweeteners:** Sugar, glucose syrup or non-sugar sweeteners (see Added Sweetness)

**Flavouring:** over 3,000 flavouring agents are available for manufacturers to use, few of which have been tested in conjunction with the other ingredients listed here. One common one is Cajeputol, an unusual chemical which creates a 'cool' taste in the mouth. It is known to be toxic and to affect the reproductive system of animals.

Flavourings are used in very high concentrations and could be released at toxic levels.

**Gum base:** this is the tasteless wad left in your mouth when all the flavour has gone. The phrase 'gum base' can refer to a combination of over 40 compounds, which apart from calcium carbonate (common chalk) appear to be poorly tested or are known to be a potential hazard.

UK food legislation permits up to 60 per cent of the gum base to be made of mineral oil such as paraffin, petroleum wax, or vaseline. Typically 20 per cent of the base is mineral oil.

Early in 1989 the Government proposed banning mineral oils from all foods. But in the case of cheese rind and chewing gum they have permitted its continued use, with a request that the industry provide toxicity data two years hence. In the meantime we have had the official warning from MAFF: 'Don't chew with other foods and never swallow it.'

Other gum base ingredients include terpene and wood resins, polyethylene, natural and synthetic rubber and softeners such as lanolin. Both paraffin and polyethylene are known to encourage tumours in experimental animals. Gum bases have virtually no nutritional value.



## Consumer Checkout takes a close look at what you're taking off the shelf

# Reducing risks from cans

Last year we used a total of 12 billion cans for foods and drinks. In this issue we check out the new regulations to limit contamination of food from cans and find out what can be done to recycle the valuable resources used in their manufacture.

Tin is used to coat over seven billion steel-plate cans for food and drink sold in the UK every year. Pet foods account for at least a further two billion cans. New restrictions are to be placed on the amount of tin that can leach into food after unacceptably high levels were found in some foods. High levels of tin can cause gastric irritation. Despite guidelines laid down in 1983 which recommended that levels of tin in canned food should not exceed 200mg/kg, new research has found that two per cent of tin cans (equivalent to about 140 million cans per year) have been found to exceed this level and numbers have not decreased for ten years.

The amount of tin found in food also increases with storage time, so it is older cans that are likely to be less safe. The Metal Packaging Manufacturers' Association itself admits that cans do not last for ever. They advise that foods should be consumed within two years — thereafter the quality may start to deteriorate. Foods with a shelf life exceeding 18 months have been excluded from date marking. But from 1992 'best before' dates will become compulsory, which will help

ensure that stock control in the shop and at home is made easier.

Once opened, unused food should never be kept in the can as concentrations of tin will rise rapidly. Food should be transferred into a dish. Consumer Checkout would like to see information on all can labels highlighting this warning.

All canned foods should be stored in a cool dry place. Avoid buying tins that are dented, particularly on the seams, as it can be impossible to spot minute holes that could cause bacterial contamination.

### Lead

Another toxic metal, lead, historically used as a solder for cans, was finally replaced by all UK can manufacturers in the mid-1980s. Imported cans may still be soldered with lead.

### Can recycling

We buy over 12 billion cans a year containing foods, soft drinks, beers and pet foods. Soft drink cans alone account for nearly seven billion and according to a Gallup Poll earlier this year are perceived as the biggest litter problem in the UK today.

All food cans and half of all drinks cans are steel while the remaining 3,400 million drinks cans are made from aluminium. All contain valuable resources and should be recycled. Cans are now being labelled as either recyclable steel or aluminium to assist sorting. But even this kind of labelling is of little help when there

are too few recycling schemes.

In the UK last year we recycled only about 11 per cent of steel cans and 17 per cent of aluminium cans. According to Friends of the Earth this compares badly with countries such as the USA and Sweden which recycle 53 per cent and 95 per cent respectively.

The main problem in the UK is the lack of infrastructure for recycling. The Can Makers Federation has set up about 200 Save-A-Can collection sites around the country, but even this scheme has run into problems, due to the cost of transporting cans to recycling plants.

Steel cans can be separated in the waste stream by electro-magnets. However most other EC countries are better equipped with magnetic separation facilities than the UK. The fact that only 26 local authorities use this method highlights the lack of government and local authority initiative. Without a national policy and more support from central government, recycling will continue to be piecemeal and inadequate.

### What you can do:

- Find out if there are any collection schemes in your area and use them.
- Ask your local supermarket and local authority to provide more recycling facilities in your area.
- Write to your MP asking for the creation of a national recycling policy and for more money to be put into recycling schemes and other incentives to encourage minimum waste of resources.

## WHO SAYS SIZE ISN'T EVERYTHING?

Ice-cream is no longer just kids' stuff. This year's marketing success has been adult ice-creams, made with 'real chocolate'. We can live out our primitive fantasies according to psychologist Peter Cooper by indulging in ice creams which are 'not just phallic but a tactile experience with mouth and tongue that is pre-phallic and very primitive'.

But are Wall's gilding the lily with their newly launched Magnum? At 80p this ice-cream is certainly at the top end of the range. 'The creamiest dairy vanilla ice cream luxuriously dipped in real Belgian chocolate' the flash proudly proclaims on its eight inch wrapper. But once exposed you may be sadly disappointed with only four and a half inches of Magnum. The stick adds one and a half inches but the remaining one and a half inches is just air. Walls claims



no deception is intended: 'We need the extra air to cushion the fragile Belgian chocolate from rough handling', Philip Evans of Birds Eye Walls told Consumer Checkout. Ouch!

Magnum — over eight inches of packaging but only four and a half inches of 'tactile experience'.





## Dolphin-friendly tuna on the menu soon

New agreements are currently being negotiated with the tuna industry to ensure that tuna sold in the UK are caught by dolphin-friendly methods. Large-scale driftnet operations, known as 'walls of death', capture dolphins, turtles and even whales alongside the tuna. The massive catches possible with driftnets are threatening tuna with virtual extinction in areas such as the South Pacific.

Now the Whale and Dolphin Conservation Society is negotiating a UK agreement which will ensure that tuna are not caught by driftnets. No producer will be given accreditation unless their whole operation worldwide conforms to the new standards, which will have a two-tier policing structure.

Vassili Papastavrou of the Whale and Dolphin Conservation Society told Consumer Checkout that he was confident an agreement will be reached with the vast majority of the tuna industry.

Details from: The Whale and Dolphin Conservation Society, 20 West Lea Road, Bath, Avon BA1 3RL. Tel 0225-334511.

## Kellogg's spurns recycled card for packets

Cereal giant Kellogg's seems to be swimming against the tide of green awareness. Until 1983 Kellogg's used recycled board for their cereal packaging — but now their breakfast cereals come packaged in 100 per cent virgin pulp folding boxboard. Kellogg's blame the change on the lack of sufficient waste paper to produce recycled board.

However competitors Weetabix are changing over to using recycled board. Ian Mason of Weetabix told *The Food Magazine* that 70 per cent of their range now use a percentage of recycled material in its packaging and this was being extended to their whole range of products.

Kellogg's reasoning may come as something of a surprise to all those households who save waste paper only to find no-one will take it away. Unless major manufacturers such as Kellogg's take the lead by creating large markets for recycled board, there will be little incentive for local collection schemes.

## COKE TOPS THE SHOPPING LIST

The British public spends more on Coca-Cola than on any other brand name item — both food and non-food retail purchases, according to a survey by *Marketing* magazine. With over £200m sales each year, Coca-Cola out-sells Persil soap powder, Nescafé, Whiskas cat food and Ariel soap powder.

Main food and drink brand names are:

Coca-Cola	over £200m
Nescafé	over £180m
Bells whisky	over £140m
PG Tips tea	over £110m
Heinz baked beans	over £100m

Source: *Marketing* 24.5.90

## Cereal bars — health or hype?

This year we will spend over £70 million on cereal bars, the immensely popular 'wholesome' alternative to sweets and biscuits. But a new consumer study\* suggests that they do not always warrant their healthy image.

Eighty eight per cent of 200 shoppers said 'yes' when asked whether they thought cereal bars were healthy and a third gave this as their main reason for buying cereal bars.

But when researchers from Manchester University analysed seven popular brands and compared their nutrition with a Mars bar and chocolate digestive biscuits, they found four brands — Jordan's Chewy Raisin and Honey bars, Harvest Crunch and Tracker Nut bars — were all fattier than a Mars bar, while Jordan's Honey bars contained more sugar than chocolate digestives. Several cereal bars were saltier than a Mars bar.

The researchers say it is questionable whether these bars warrant the healthy image they have gained.

• *Cereal bars — Are they healthy or is it hype?* Vince Mitchell and Pari Boustani, Manchester School of Management, University of Manchester Institute of Science & Technology (061-236 3311)



## McDONALD'S BOWS TO RECYCLING PRESSURE

Consumer pressure in the United States has led McDonald's to announce a nationwide plan to recycle its polystyrene fast food containers.

Environmentalists in the US say the plan, which requires customers to dump their used containers and packaging into special recycling bins, is in response to the McToxic public awareness campaign which encourages consumers to mail used plastic fast food containers to McDonald's corporate offices.

In the UK McDonald's say they are operating a pilot scheme in the Nottingham area to test consumer acceptance of a similar recycling plan. But until a collection and recycling infrastructure is set up, all the packaging still ends up in the dustbin.



# THE APPLES BITE BACK

Neil Sinden, of the environmental group Common Ground, laments the lack of apple varieties available this autumn.

British orchards have undergone dramatic changes in recent years — competition from overseas fruit producers and conflict between home producers over how to deal with this competition have resulted in a declining share of the domestic market and the grubbing-up of around two-thirds of orchard land in England and Wales over the last 30 years. Until 1988 orchard replanting grants available from the Ministry of Agriculture were only available for a limited range of varieties. With the decline in orchards we have suffered a reduction in the range and diversity of home-grown apples and other tree fruit, available in grocers and supermarkets.

Working with nature over hundreds of years we have created a great diversity of edible fruits — 6,000 varieties of apple are recorded in Britain's National Apple Register. Now a mere four varieties of apple dominate our commercial orchards. Just two of these — Cox's Orange Pippin and Bramley (both excellent apples in their own right) — account for over 75 per cent of the apples produced in this country.

Not so long ago orchards growing fruit for local needs were common throughout the country, from Cornwall to the Carse of Gowrie. Over 200 varieties of fruit could be found in a single orchard. The range of varieties was selected to provide fresh fruit from August through to March, or even later, the following year. There were ideal varieties for every dish, for pies, purée, mincemeat and of course cider.

Ignoring the dazzling variety of native apples, pears, plums and cherries still to be found growing in old orchards

around the country, the supermarkets seem to have succumbed to the exotic allure of the kiwi and kumquat. While we're spoilt for choice when it comes to tropical produce, does this have to be at the expense of home-grown fruit? The supermarkets and European

plus details of where they can be obtained. The local greengrocer should now have no excuse for not stocking your favourite varieties.

The successful campaign to save the National Fruit Collections at Brogdale, has

assist in the reintroduction of old varieties into modern, commercial orchards and help identify established varieties with pest and disease resistance suitable for organic growers.

The Campaign for Real Ale is also seeking to support and encourage the use of traditional cider apple and perry pear varieties. Over 70 per cent of the British-made cider based on

imported apple concentrate and 'cull' dessert fruit (which fails to meet market standards).

Marks and Spencer is promoting a four-month 'Old Fashioned English Apple' season, featuring a dozen varieties of apples. Some, such as Ashmead's Kernel and Blenheim Orange, date back nearly 300 years. Other varieties were developed towards the end of the last century but are now hard to find.

The maintenance and enhancement of diversity is important for many reasons — cultural, ecological, culinary and economic. Creating and meeting a demand for a wide range of home-grown varieties through a high street outlet or farm shop is likely to become increasingly profitable in the future.

• Contact Common Ground at 45 Shelton Street, London WC2H 9HJ (Tel: 071-379 3109).

Some dessert apple varieties poised for a comeback:

**James Grieve** — a hardy Scottish apple with a crisp flavour, much grown in the north.

**Egremont Russet** — thought to have originated in England. At its best it has a rich, dry and nutty flavour. The most widely grown russet in commercial orchards.

**Charles Ross** — a dual purpose variety (raised from a Cox's Orange Pippin and Peasgood's Nonesuch cross). Sweet and juicy.

**Lord Lambourne** — has a crisp, mildly sweet flavour. The only twentieth century variety in this list.

**Ribstone Pippin** — an apple from Yorkshire with a rich, sweet flavour, much

favoured in the nineteenth century. Its vitamin C content is almost four times that of a Golden Delicious.

**Blenheim Orange** — a dual purpose apple with a dry, nutty flavour discovered at Woodstock, near Blenheim in Oxfordshire in 1740. It has 67 synonyms including Woodstock Pippin and Renet Blengeinskii (as it is known in the USSR).

**Rosemary Russet** — an early nineteenth century variety of unknown origin with a delicate, sweet and sour flavour. Considered one of the best tasting russets.

**Ashmead's Kernel** — a good keeper with a sweet, aromatic flavour raised by Dr Ashmead from Gloucester in 1700.

Commission regulations appear more concerned with uniformity, size, and appearance rather than taste, variety and seasonality. The poor keeping qualities of some, particularly early-season, varieties do not suit the supermarkets' requirements for a long shelf-life. The Worcester Pearmain, for example, is at its best soon after picking — a pleasure currently denied most people.

The future however does show signs of hope, with several initiatives underway. Common Ground's campaign to save old orchards and local varieties of fruit has succeeded in drawing attention to their value for the cook, conservationist and consumer. The British Independent Fruit Growers Association recently produced a wallchart, listing 40 apple varieties still grown commercially in this country,

preserved a living archive and invaluable genetic resource of over 2,300 varieties of apple, 500 pears, 350 plums, 220 cherries and 44 cobnuts and filberts — as well as a number of varieties of medlar and quince. Research at Brogdale could

## APPLE DAY, THE APPLE MARKET, COVENT GARDEN PIAZZA 21 OCTOBER 1990

On Apple Day, organised by conservation group Common Ground, stalls in the area known as 'the Apple Market' in Covent Garden will be occupied by specialist fruit growers, tree nurseries, juice and cider makers and others involved with the use and cultivation of tree fruits, as well as horticultural societies, schools, wild life and other groups. Participants include the Dorset Apple Juice Company, Scotts Nurseries and

Crapes Fruit Farm. There will also be a one-off 'Apple Roadshow' to which people are invited to bring fruit from their unnamed garden trees for identification by experts (for a small fee). For two weeks prior to Apple Day there will be a display of regional apples, daily apple tastings and an exhibition of photographs by James Ravilious of West Country orchards in a marquee on the Piazza in Covent Garden (9 - 21 October).



# It's a fishy business

**'Plenty more fish in the sea' the old saying has it — but today it's no longer true, with fish stocks in serious decline. With pollution of our seas, should we still be recommending consumers to eat more fish? Sue Dibb investigates and asks whether fish farming is the answer.**

**I**n 1983 the United Nations Food and Agriculture Organisation reported that over-fishing had depleted 11 major oceanic fisheries — six in the Atlantic and five in the Pacific. Fishing fleets using sophisticated technology and fuelled by cheap oil had to a large extent replaced smaller boats. Fish had less and less chance of escaping their nets.

Once the seas around Britain were the richest source of marine life in western Europe. Now despite ten years of quotas aimed at conserving fish supplies, many fish species are facing near extinction.

Over-fishing in the 1970s was responsible for the extinction of the common skate in the Irish Sea, and the virtual extinction of North Sea herring. Now haddock and cod are both under threat with no guarantee that quotas will protect them. Scots fishermen have been found to exceed haddock quotas by 30 per cent — the surplus fish are simply thrown back into the sea, dead.

In 1987 the UK exceeded its quotas on 11 species of fish. The worst-hit stocks were North Sea mackerel where the total catch was almost 14 times the UK allotted quota. Despite threatened legal action by the EC, it was reported that even this massive overfishing would probably be 'excused' by the Commission. In 1989, 372 offences against fisheries protection legislation were brought to court in the UK, but average fines were less than £2,000.

The European Community's 100,000 strong fishing fleet has doubled its capacity in the past 20 years and is now, experts say, up to 40 per cent too large. Fierce battles rage over the dwindling fish stocks. Owners of

British boats now numbering 10,000 say they have lost out to European competition. Despite investment in modernisation, many smaller fishermen are facing bankruptcy as they chase smaller and smaller catches.

Not only are the numbers of fish declining but so is their size. Danish factory ships have been accused of sweeping up immature cod and herring for fish meal, while factory ships supplying Scotland's fish meal factories have been blamed for the disappearance of sand eels off the Shetland Isles.

The EC has proposed the use of larger mesh nets,



to catch only the older fish and preserve a more valuable harvest for the future. But UK fishermen have reacted strongly against the proposal and it is likely that Minister John Gummer will argue that the measures are too stringent.

The need for long-term conservation and a level of fishing which would produce a sustainable yield is generally accepted by European nations. Yet most are reluctant to make the short-term sacrifices. There is now talk of paying fishermen not to fish — but this has not found favour with the UK government.

## Pollution of the seas

Over-fishing is not the only threat to fish stocks. Pollution of seas and rivers may in severe situations poison fish and shellfish. At lower levels toxins can accumulate throughout the food chain, including fish themselves.

The North Sea is one of the worst polluted seas in

the world. DDT, PCBs, zinc, lead, copper, chromium, nickel and mercury all find their way into the sea from rivers and pipelines but also from industrial waste and sewage sludge dumped from ships. The heaviest dumping occurs at the mouth of the Rhine and off the north Brittany coast.

A German government report in 1980 described pollution in some areas as alarming, especially in coastal regions. And in 1984 a Scientific Conference for the Protection of the North Sea suggested that it was not only coastal areas but the open sea that was directly endangered. 'Ill or parasitised fishes, birds and other sea animals are becoming increasingly common' their report concluded.

In 1986 The Netherlands Institute for Fishery Investigations reported that 40 per cent of a sample of 20,000 flounder, dab and plaice had cancerous tumours or bacterial skin diseases from chemical contamination and were unfit for eating. The Dutch government issued health warnings. In a survey the same year the Germans found 42 per cent of its fish were diseased.

Despite these reports our own Ministry of Agriculture says there is no cause for worry. They claim that their regular surveys do not show the same extent of disease. However external disease in flounder from the Inner Thames Estuary was found in 15 per cent of fish in 1987. The fish were caught downstream from two major sewage treatment works, which process significant amounts of industrial waste.

MAFF's Directorate of Fisheries Research in Lowestoft is responsible for monitoring levels of metals, organochlorine pesticides, PCB residues, and also radioactivity in fish and shellfish off the coast of England and Wales. Their most up-to-date information available dates back to 1984, despite an assurance in 1987 that reports would be prepared annually.

In their 1987 report they conclude that there is considerable variation of contamination around the coasts of England and Wales. 'Whilst the results obtained do not in general terms give any cause for concern, it is apparent that levels of certain contaminants have been, and in some cases still are, relatively



Once the seas around Britain were the richest source of marine life in western Europe. Now despite ten years of quotas aimed at conserving fish supplies, many fish species are facing near extinction.

The North Sea is one of the worst polluted seas in the world. DDT, PCBs, zinc, lead, copper, chromium, nickel and mercury all find their way into the sea from rivers and pipelines but also from industrial waste and sewage sludge dumped from ships.

Out of 26 medicines used in fish farming, only one-third have a product licence.

The most toxic chemical used in fish farming is the organophosphorus pesticide Aquaguard, previously known as Nuvan. This is widely used to control sea lice which proliferate in the conditions in which farmed salmon are kept.

high in a few areas. Concentrations of some organochlorine pesticides and PCB residues remain above normal in some North Sea areas, but levels are generally lower than those previously reported.'

Critics, though, question what may be considered 'normal' levels and there have been criticisms of the way in which MAFF publishes its results. For example they sometimes omit levels of contamination considered so high that they would 'distort the overall sample' from their calculations.

In addition to this type of pollution the UK discharges more radioactivity into the sea than any other nation. Sellafield has made the Irish Sea the most radioactive sea in the world.

Shellfish beds and fish can also be contaminated with viruses from sewage disposal. Viruses can live up to 17 months in the sea. Untreated sewage is pumped straight into the sea at many outlets around the UK and a further 30 per cent of UK sewage sludge is dumped by boat at sea.

In 1987 an attempt to declare the North Sea a specially protected area failed. Whilst the pollution will continue, the UK has agreed to ensure that pollution levels do not rise above those of 1987. Incineration of toxic wastes at sea is to be phased out by 1994 and the overall volume of toxic substances and agricultural chemicals discharged into the sea halved by 1995.

Earlier this year the government warned that people should not eat shellfish caught along a 200 mile stretch of the east coast following the growth of toxic algal blooms. A subsequent investigation by the Commons Environment Committee of MPs called on the government to create a single authority to protect the public. The Committee felt the conflicting advice given by the Department of Health and the Ministry of Agriculture had led to much public confusion. The

committee was also critical of the Department of Environment's 'complacent' position on nutrients which feed toxic algae blooms.

## Fish farming — the real answer?

Fish farming has been one of the world's big growth industries over the last decade. Five years ago there were only a handful of fish farms in Scotland, now there are more than 350, making Scottish fish farming second in size only to Norway.

The industry is becoming increasingly dominated by large, multinational companies including Unilever and Booker McConnell. But far from bringing great local wealth, poor planning has resulted in over-production and a slump in the market. This has brought financial loss and bankruptcy, particularly to small operators.

These days you are unlikely to find wild salmon on the menu. Some restaurateurs say farmed salmon is tasteless and fatty and are calling for clear labelling on menus. Inferior fish have been blamed on cost cutting by salmon farmers. Others dispute these criticisms, claiming that farming has made salmon far more accessible to the pockets of ordinary people.

But there are growing worries about the environmental impact of fish farming. The industry has been allowed to develop without adequate planning controls and without proper regulations to minimise environmental damage. Many developments, including large scale farms, escape planning controls because they are deemed 'agricultural' projects which are exempt.

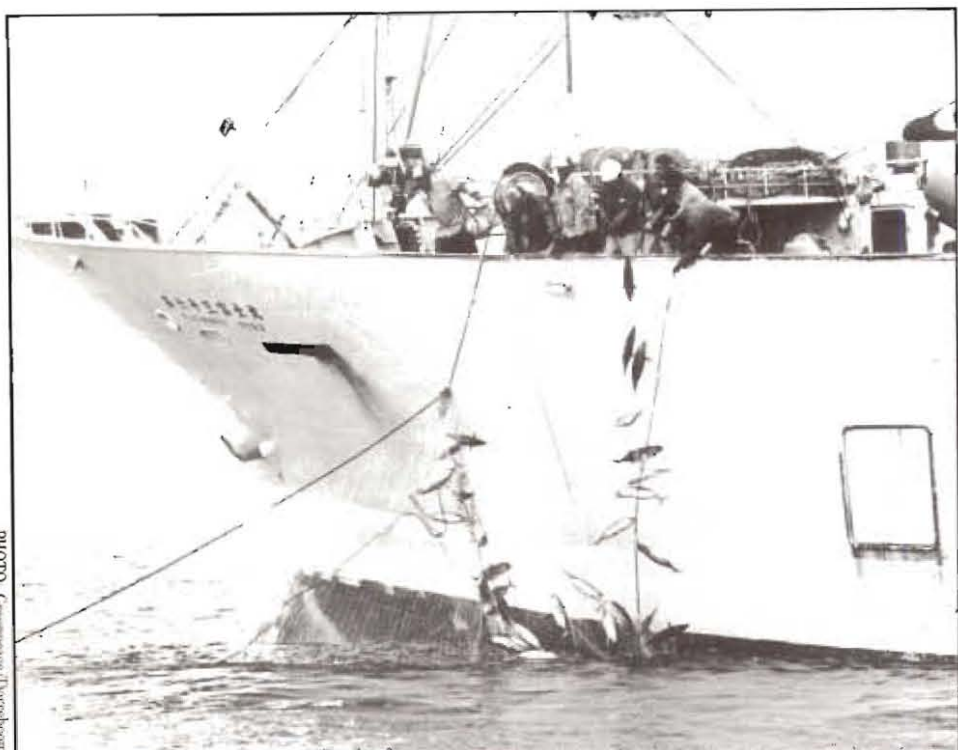
Groups such as the Marine Conservation Society say that fish farming upsets the ecological balance in many lochs and causes sea bed pollution; and seals and birds that are attracted to the fish pens to feed are often shot.

Diseased flounder caught in the North Sea



PHOTO: Greenpeace/Fickler





Japanese driftnetter catching tuna in the Pacific

The fish farming industry is regulated by the Crown Estates Commission (CEC) which issues leases for sea bed sites on which fish cages are moored. Decisions on whether to issue or renew licences are made in secret, and under the Crown Estates Act (1961) the CEC is required to maximise financial yields. Thus commercial pressures are heavily at odds with the needs of conservation.

Farmed fish are reared in off-shore cages and under such conditions are liable to suffer from infections of the pancreas, furunculosis (an ulceration of the flesh which makes the fish worthless), bacterial kidney disease and infestations of sea lice. Anglers argue that fish farms act as a breeding ground for diseases which are then passed on to wild fish.

To control these diseases antibiotic and antibacterial drugs are regularly used — ministry tests last year found residues of 11 different sulphonamides (antibacterial drugs) in farmed trout. Norwegian studies have found that antibiotics can persist in marine sediments beneath fish cages for up to six months after treatment.

But the most toxic chemical used in fish farming is the organophosphorus pesticide Aquaguard, previously known as Nuvan. This is widely used to control sea lice which proliferate in the conditions in which farmed salmon are kept. However Aquaguard is also highly toxic to other forms of marine life, including crabs and lobsters, particularly at the larval stage.

Dichlorvos, Aquaguard's active ingredient, has the highest acute toxicity of all the 22 dangerous substances listed on the Department of the Environment's 'Red List'. Nuvan was used on salmon farms for over ten years without a product licence approving its safety — a loophole in the Medicines Act (1968) allows vets to prescribe any product, whether licenced or not. And Aquaguard/Nuvan is not alone — out of 26 medicines

used in fish farming, only one-third have a product licence.

In 1989 the Ministry of Agriculture granted Nuvan a temporary product licence under the new name of Aquaguard. This was extended for a further two years this summer. Data supplied in support of the licence and official advice given to MAFF by the Veterinary Products Committee are not publicly available. Despite MAFF's statement that alternatives to Aquaguard must be developed as soon as possible, the industry still claims that if Dichlorvos were banned, the entire farmed salmon industry would be wiped out.

Another substance under review is canthaxanthin, the colouring added to over 90 per cent of salmon and trout fish feed to ensure that fish look an appetising pink colour. Farmed fish lack the diet of crustacea and algae which provide natural flesh colouration in wild salmon and trout. Canthaxanthin doesn't have to be declared on the label, but at high intake levels, it is known to cause deposits in the eye retina reducing vision in low light. After re-evaluating the safety data, the government's Committee on Toxicity decided earlier this year that it could not set a safe level for this dye. Whilst canthaxanthin has been banned from direct use in food, its use in fish and chicken feed (to colour eggs) is still under review. Despite known alternatives, the fish farming industry is fighting hard to maintain the use of the dye.

All those involved in fish farming and its regulation need to address these consumer and environmental concerns. As with other forms of intensive animal production consumers are increasingly unwilling to accept unpalatable facts about animal welfare, environmental damage and risks to human health. This is the challenge that fish farming will need to meet, if it is to become a solution to fish stock depletion.

## Fish dinners

Fish does not just end up on your, or your cat's, dinner plate. Almost 30 per cent of the world catch, some 20 million tonnes annually is used for feeding pigs or chickens or even farmed fish. Fish is also used as a fertiliser and in the preparation of fish oil.

## Painting a grim picture

A highly toxic pollutant from paint used to prevent boat hulls becoming fouled with algae, limpets, barnacles and other creatures is also threatening marine life. Tributyltin (TBT) is responsible for turning female whelks hermaphrodite. This prevents them from reproducing and the result is that the whelk population is, in many areas, in serious decline. Even low concentrations found well away from harbours can cause these abnormalities.

Forty-five species of marine animals worldwide are thought to be affected, including farmed salmon which can accumulate TBT. Several countries including the UK have restricted the use of TBT but nowhere is it banned. Alternatives are being developed — so there are no excuses for preventing TBT's outright ban.



# The Corpor

**Health visitors in mother and baby clinics often give out weaning and feeding pamphlets, including company literature, by the handful. Is this honest health education or are NHS professionals becoming sales reps for the big babyfood companies? Tim Lobstein investigates.**

**P**arents are often unsure about what their baby requires, and need to turn to someone for advice. Friends, family, neighbours perhaps? Or should it be a health professional, the health visitor at the local clinic? Which of these sources can provide a new parent with good quality, unbiased information?

The NHS should, of course, be a source of helpful, unbiased information that puts the baby's needs uppermost. But starved of funds, health authorities have had to cut back 'non-essential' services. Many no longer produce their own leaflets on health education matters — such as how to feed new babies, when to start a baby on solids, how to cope with problem feeders or make healthy snacks for toddlers.

Eager to fill this gap, the food industry hasn't hesitated to produce attractive leaflets in their thousands to send to health centres across the country.

But do these leaflets reflect good nutrition and health education in an unbiased form, or do they carry images and messages designed primarily to promote their own products?

A survey by health educator April Brett\* found a total of 90 leaflets relating to nutrition and health in

just one district health authority's clinics. Of these, virtually two-thirds (59) were produced by food companies or food industry bodies (see table).

Some leaflets concerned specific health problems or special diets, but Ms Brett identified 49 leaflets and booklets that offered general advice for the public; 28 of these were commercially produced and 21 non-commercial.

Specific information about amounts of nutrients was rarely offered unless it made a commercial point; Ribena, for example, compared the amount of vitamin C in its product with that found in various foods, including runner beans and mashed banana.

The study found that all leaflets about feeding young babies mentioned commercial foods as a possible first food — but only the company-produced leaflets gave named brands (their own). Four of the company leaflets did not mention that fresh or 'family'

## COMMERCIAL LEAFLETS FOUND IN ONE DISTRICT'S CLINICS

<b>Cow &amp; Gate</b>	Growing up with Cow & Gate Weaning to Family Meals Pure Juice Recipes for All Milk-Free Recipes for You and Your Baby	<b>National Dairy Council</b>	Dairy Industry Today Facts About Soft Cheese Champion Cheese
<b>Milupa</b>	Menu Suggestions The New Generation of Baby Foods Infant Feeding Difficulties	<b>Dairy Products Advisory Service</b>	Starting Solids Snack Surprises Recipes for Teatime Between Meal Snacks The Wheel of Food and Good Health Keeping Trim Looking Forward to Retirement Your Diet in Pregnancy Fresh Milk 6 months - 5 years Calcium: How Much Do You Need?
<b>Farleys</b>	Weaning Guide	<b>Ready Brek</b>	Good Food for Healthy Children Feeding the Problem Eater The Overweight Child
<b>Heinz</b>	Baby Foods Infant Nutrition Baby's Mixed Feeding Your Guide to Good Diet Vegetable Meals Guide to Feeding (antenatal) When Baby Comes Too (travelling) Baby's Holiday (guidelines) Cooking the Slimway	<b>Marmite</b>	Savoury Snacks for Schoolkids
<b>Robinson's</b>	When Baby is Ready for Solids Moving on to Family Mealtimes Understanding Nutrition for Babies Nutritional Information for Health Visitors (professional) Nutrition Information (professional) Holidays with Your Baby	<b>Flora</b>	Eating for a Healthy Heart Food Choices No 3 Flora Fat Finder
<b>Ribena</b>	After Milk What Next Pregnant? Baby's Drinks (two versions)	<b>Smith Kline French</b>	Eating Your Way to a Long and Healthy Retirement Easy when You Know How
<b>National Dairy Council</b>	Oh What a Lovely Mess Feeding the Younger School Child Take Something Simple Children: Good Things to Eat Michael the Milkbotle Facts About Cream	<b>Food and Drink Federation</b>	Common Sense about Food Care in the Kitchen
		<b>Butter Information Council</b>	Fats in the Diet
		<b>Outline</b>	An Outline of Weight Control for the Young Child An Outline of Weight Control for the Teenage Girl An Outline of Weight Control for Men

Source: April Brett, 1989\*



# ate Clinic?

foods can be used for weaning; several (all company-produced) leaflets made no mention of mashing or sieving foods but did describe opening jars and tins.

The majority of infant feeding leaflets were aimed at women as mothers. Men were ignored. Most of the social images were of fairly wealthy families. Black and ethnic minorities were acknowledged, though few concessions were made to traditional diets.

The general tone of commercially-produced leaflets was one of reassurance and authority: products were 'specially formulated' according to 'nutritional expertise' in order that what you bought was 'all that your baby needs.' These attempts to create scientific legitimacy for selling a product are less a form of health education, more about health dis-education. Rather than empowering the reader to understand what they should do, the messages mystify the issue – just buy the products and all will be well.

Health visitors themselves realise that the leaflets are far from ideal. But as professionals they like to give their clients material to take home. As one professional put it, 'I know it's advertising but I don't think it matters as long as mums have something'.

Besides the direct messages and the subtle images which commercial leaflets convey, there is another process here which has wider implications. When health visitors hand out these leaflets, aren't they implicitly adding their professional endorsement and the authority of the clinic? Certainly the companies hope this will happen.

Or might the reverse also happen? Perhaps the commercial, vested interests inherent in many of the leaflets rub off onto the clinics and their professional

staff. Clients of the service may start to see clinics and health professionals as mere extensions of the food industry.

A look at the professional worker's organisation, such as the Health Visitors Association, shows further evidence of industry – health service collaboration. Robinsons baby foods have long provided free diaries

and various services – such as a travel agency – for health visitors. Wyeth, makers of formula milk, offer prizes and support for trainee health visitors. And the Milk Marketing Board have just launched – with the HVA – a luxury leather filofax for health visitors' daily reference.

Concerns at the health service's loss of independence are further compounded by leaflets produced by the Health Education Authority (HEA). These show – as part of the HEA's policy of collaborating with industry – nutrition and health information alongside brand and product information. Far from the companies appearing respectable, the HEA gives itself the appearance of having become a cheap marketing agency!

Despite severe economic pressures, several health authorities have managed to resist the temptation to allow commercial literature into their clinics. Among the first and most widely publicised, West Lambeth introduced a comprehensive infant feeding policy in 1987 (see *London Food News*, Autumn 1987). Leaflets from commercial

sources, the authority declared, would not be displayed unless approved by a special monitoring group, which included health visitors and dietitians. Other practices, such as distributing free samples and Bounty Bags were also discontinued.

\* *Nutrition Education or Product Promotion: An Investigation of Nutrition Education Leaflets Used in One District Health Authority.* MSc thesis by April Rose Brett, Leeds Polytechnic and Hull University, 1989.

## Assessing commercial sponsorship

**C**uts in public finance have provided new opportunities for commercial sponsorship and the field of health education is no exception. But much commercially produced material has been found by health campaigners to be biased, misleading or inaccurate with some little more than advertising.

Some of the most worrying types of commercial health education materials are leaflets about baby and infant feeding which we examine here in greater detail. Yet there may be a growing problem with other types of material such as is increasingly available to schools.

In the health services, under the new GP contract where doctors are paid for the specific services they provide for patients, including providing preventive health education, there is likely to be a new, expanding need for materials which give advice on healthy eating. Commercial leaflets, posters and videos will fill this need if no other material is easily available. Recent research by the Coronary Prevention Group found that over half (57 per cent) of the types of materials used by primary health care workers already comes from commercial sources.

The government-funded Health Education Authority (HEA) has for some time had to find commercial sponsorship for its health education campaigns. This autumn its 'Food for the Heart' campaign aims to persuade all adults to cut down their fat consumption, but relies on substantial sponsorship from more than twenty food retailers, manufacturers and trade bodies.

Now The Food Commission is supporting a move by consumer and health organisations to seek a wider assessment of the problem. One solution would be some kind of accreditation scheme to prevent the most blatant kinds of product promotion. Another is for independent sources to provide more materials, but without the funding, commercial organisations will increasingly step in to fill the gap.

## IS THIS HEALTH EDUCATION MATERIAL?

**'Farley's Farex. The recommended first solid food, suitable after 3 months.'**

**'... two weeks after introduction to solids your baby could be eating half the contents of Cow & Gate 80g trial size Stage 1 Baby Meal Main Course...'**

**'At first baby needs only one or two teaspoonfuls per day made up according to the instructions on our packets.'** (Robinsons)

**'There's a lot of protein and good nourishment in Milupa Infant Dinners.'**

**Heinz made an effort: 'Tins or jars of baby food can be useful but don't let them replace fresh food altogether. Try not to use tins or jars at more than one meal a day.'**



# Food hygiene in schools

**The Food Safety Bill received Royal Assent in June 1990 and comes into effect from January 1991. People who handle food commercially will need training in food hygiene and everyone in the food chain will be held responsible for food safety'. But, asks home economist Jenny Ridgwell, what is happening to food hygiene in the classroom?**

**E**ducation is undergoing reform. All pupils aged five to sixteen will study technology, and food must be one of the materials used in the design process. That means that for the first time, primary pupils will be preparing food as part of their curriculum. It's a great opportunity for better understanding of health and nutrition and a chance to deliver the food hygiene message.

But what kind of message will pupils get? And who is advising the teachers and keeping them up to date on food matters? What sort of facilities are available for school children to prepare food? Who is responsible for providing guidance?

The majority of state schools are controlled by local education authorities. The Health and Safety at Work Act, 1974, applies to schools and imposes a duty on employers to provide 'approved codes of practice'. This makes local authorities responsible for issuing guidelines, but a trawl of forty local education authorities produced only two sets of safety guidelines concerned with food handling in school classrooms. One local authority inspector told me that food hygiene was 'common sense'. When asked what his 'common sense' policy was on the use of raw eggs by pupils to prepare such dishes as chocolate mousse or mayonnaise, I was met with silence. The June 1990 edition of Food Safety Directory issued by MAFF states 'All consumers are advised to avoid eating raw eggs or uncooked foods made from them'. Schools need a network to distribute the latest information on food hygiene issues, so that those on the shop floor can rely on more than 'common sense'.

What are school food preparation areas like? In secondary schools, food preparation is carried out in properly designed home economics rooms. Although food investigations may be carried out in science lessons, the Department of Education and Science safety guidelines advise that 'Eating and drinking in the laboratory should be forbidden'. To me, the preparation of mayonnaise in a science lab is a muddled message — it may demonstrate emulsification but it reinforces the idea that food is made in an environment used for chemical experiments

and culture growing.

What about food preparation areas in primary schools? In the past children have often prepared food in back corridors using battered tables and borrowed equipment. They often wash up in sinks used for paintbrushes and pottery — or worse, the school cloakrooms. Government leaflets advise consumers to store perishable food at the correct temperature in a refrigerator. Many primary schools are lucky if they possess one refrigerator which is usually kept in the staff commonroom. Teachers may not appreciate pupils wandering in with plates of food, and disturbing their well earned peace! So, food will get left in warm classrooms then taken home and eaten after school, giving bacteria plenty of time to multiply. The whole process is fraught with confusion.

## So what can be done?

Environmental Health Officers (EHOs) will be responsible for training food handlers and those involved in the 'food chain'. The Food Safety Bill will stretch their resources and make enormous demands on their staff. At present EHOs are not responsible for work undertaken in the school classroom but the new curriculum could change that. The Institution of Environmental Health Officers has already been alerted to the fact that some local education authorities are allowing students to prepare and sell food through mini-enterprises which are subject to various statutory controls. The example was given of students selling ice-cream which had not been prepared with correct temperature controls or sterilisation procedures. Their

Principal EHO, Janine Avery, voices the Institution's worries:

'Such practices are of concern to the Institution as our members are responsible for enforcing much of this legislation, particularly with respect to food hygiene and health and safety matters. Adequate training and supervision is essential for any students undertaking such work, not only for their own safety, but for the safety of others. I believe that this problem should be tackled nationally and I trust that suitable guidance will be provided in due course.'

The Richmond Committee reported to the government on the microbiological safety of food and made the following recommendations:

- 'Improved arrangements for informing the public and media on food safety matters.'
- 'A structured programme for training in food hygiene for those involved in food handling at all levels.'

Opportunities exist to provide guidance at a national level on safe food handling for school pupils. Such pupils are already 'food handlers', and their teachers are part of the 'food chain' which ought to be supported by the extra £30 million a year of promised government funding.

Food hygiene education should be regarded as a holistic process — it concerns everyone. If Britain has the expertise to prepare statutory guidance for the Food Safety Bill, these resources should also be directed at designing an educational food handling programme for the consumers and food handlers of tomorrow.

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# FEEDBACK

## Bun fight

Dear Food Magazine  
Vegetarians and non-pork eaters may be concerned to know that McDonald's uses lard in its buns.

I wrote to McDonald's head office suggesting that the company warns their customers about this fact. I received a reply from the Senior Vice President along with a 30 page booklet on the nutritional constituents of their products. I wrote back suggesting a simpler method, because they cannot expect their customers to read all the information enclosed in the booklet before having their quick meal.

I hope the Food Commission will pursue this issue and try to put pressure on fast food restaurants to label their products or, at least, have a colour code for food suitable for vegetarians.

Thank you for your concern and efforts.

Sana Janakat,  
Nutrition Research Unit,  
London NW1.

*Editors' reply:* McDonald's also use beef fat for their deep-fried french fries. They claim this is to provide 'the unique taste our customers the world over have come to expect' but over in the US of A the chain is introducing a vegetable oil alternative. They are also introducing non-fat muffins, low-fat yoghurt and milkshakes with 80 per cent less fat — in their US outlets.

Our data show the following information on fast food buns:

- Burger King — includes animal fat
- Kentucky Fried Chicken — depends on supplier, so may include animal fat
- McDonald's — includes lard (pork fat)
- Wimpy — contract specifies vegetable fat, but some store managers may buy in other buns
- Taco Bell tortillas — may include lard

For more on animal products in fast foods, get our book *Fast Food Facts*.

## Green top

Dear Food Magazine  
This morning with astonished disgust I received from my milk-supplier a copy of the enclosed leaflet.

As a thinking person interested in preventive medicine I have for 14 years gone out of my way to get hold of non-heat-treated milk, for its fresh natural qualities. By now my family can immediately detect the deadened, elderly, de-natured stuff, even in a cup of tea. Indeed the pasteurised product has little in common with the lovely fresh creamy substance provided from a licensed farm.

What isn't full of organisms? The air is dense with them, ditto our mattresses and clothes. Life is synonymous with bugs and bacteria. Avoidance of dirt whether by boiling, bleaching, antibiotics or irradiation — based on fear rather than objectivity — is ultimately counter-productive.

Come off the coke and canteen coffee, bureaucrats, and drink a glass of green-top!

S J Ellis, Wimborne Minster, Dorset.

Dear Customer

Recent changes in legislation require us to label our milk bottles with the following statement:-

**'This milk has not been heat-treated and may therefore contain organisms harmful to health.'**

We would like to point out that this does not indicate any change in our milk production and bottling methods, and our dairy continues to be tested weekly by the Milk Marketing Board.

## UNCLE BOB'S AGONY COLUMN

**Public analyst Bob Stevens answers common questions about food composition.**

### Sulphites in food

*I read in The Food Magazine, Issue 10, that sulphites are used to preserve wine. Are they used on fresh vegetables? I ask because the carrots I buy are orange but turn brown as soon as I clean them.*

Sulphites are different forms of sulphur dioxide, permitted in certain foods as E220, E221, E222, E223, E224, E226 and E227. The principle applications among 50 or so listed in the

Preservatives Regulations, 1989, are:

Soft drinks and beer	up to 70 mg/kg ready to drink
Cider and perry	up to 200 mg/kg
Most fruit juices	up to 50 mg/kg (it need not be declared below 10 mg/kg)
Dried fruit	up to 2,000 mg/kg
Wine	up to 200 mg/kg

If present, they must always be declared in the list of ingredients on prepacked foods as, for example, 'preservative, sulphur dioxide' or 'preservative, E221'.

Raw vegetables are not allowed to contain sulphur dioxide. The effect you have noted with carrots is an enzymatic effect. When you scrub them, you break down a lot of the plant cells releasing enzymes which react with the pigments in the carrots. The colour change you describe has nothing to do with any chemical treatment. Some types of apple go brown almost as soon as you slice them, for a similar reason.



### Aluminium in tooth paste.

*Having worried about aluminium in water, in saucepans and in cans of beer and soft drinks, I now hear there is aluminium in toothpaste. Is this so and how much?*

There is not likely to be any available aluminium in normal toothpaste. The polishing effect is partly due to the use of a mild abrasive such as silica; I am not aware of a toothpaste using carborundum (aluminium oxide) for this purpose. Your concern presumably stems from the suspected link (not yet shown to be

causal) with alzheimers disease. We should not lose sight of the fact that aluminium, in its oxide form, is the most abundant metal in the earth's crust. Our species would not have evolved as it had without some mechanism for coping with the metal in its natural state.

It is also worth noting that little toothpaste is actually ingested in normal use. If it were, the presence of percentage levels of fluoride compounds used in many brands would be unacceptable.



# BOOK REVIEWS

**THE BIO-REVOLUTION:**  
*Cornucopia or Pandora's Box*  
Pluto Press, 1990

**MIRACLE OR MENACE:**  
*Biotechnology and the Third World*  
Panos Publications Ltd, 1990, £6.95.

We are living through the dawn of a new industrial revolution — the genetic engineering or biotechnology revolution. There is therefore a need for dialogue between the public and scientists at every step of the development of the new technology. The Athene Trust conference, of which *The Bio-Revolution* is a record, was a valuable contribution to this process, because it succeeded in bringing together many of the important scientists and campaigners in this field.

The book is divided into five main sections, on animal welfare, BST, the environment, ethics and philosophy and public participation. One of the issues discussed is the use of growth hormone genes to create oversized animals for commercial reasons: most of the contributors were strongly opposed to such applications, since the effects on animal welfare are unpredictable. Both the section on animal welfare and on ethics contain interesting discussions of the morality of creating and using genetically engineered animals. However, perhaps the greatest controversy arises in the discussion of the use of BST (bovine growth hormone) to increase milk yield in cows.

The only weakness of the book is the section on the environment, which should have been more substantial. This minor fault notwithstanding, the book is an excellent introduction to the issues surrounding genetic engineering, which also deserves to be read by those who have an acquaintance with the subject.

The Panos dossier, *Miracle or menace*, is another good introduction to biotechnology, focusing specifically on its applications and drawbacks in the third world. Its main strength is its clarity of presentation, including simple exposition of some of the basic technical information needed to understand the subject. The material is well organised and readable, and

throughout the book, many examples are given of the possible benefits of biotechnology for the third world, in order to counter the one-sided, negative view which is often given. This approach begins to feel like a list of 'maybes' and 'perhappes' after a while, but this is probably inevitable at the current stage of development of the technology. However, the book does demonstrate a lack of awareness of the need for third world countries to reduce dependence on cash crops rather than 'improve' them through biotechnology.

The drawbacks of biotechnology are presented, correctly, as arising from its control by the first world and particularly by transnational companies. Examples given are the relative under-development of medical products for third world needs, due to the lack of a market rich enough to pay for them; substitution of cash crops by tissue culture technologies; the plunder of genetic resources from third world countries; and, generally, the development of technologies and products which are not appropriate to the needs of poor farmers. As the book emphasises, the solution to these problems lies in development of appropriate biotechnology by the South, in cooperation with publicly funded biotechnology in the North — and in consultation with those who will use the technology (ie farmers).

David King

**BREAKING THE PESTICIDE HABIT: Alternatives to 12 hazardous pesticides**  
Terry Gips, International Organisation of Consumers Unions, 1990, \$20.00.

This book sets out the case for alternatives to current pesticide use. It uses practical examples of how such alternatives could entirely replace the 'Dirty Dozen' pesticides. These are the 12 pesticides whose toxicity causes particular concern to the international environmental and consumer groups represented by the Pesticide Action network (PAN). PAN was established to campaign for the restriction in use of such chemicals and their ultimate withdrawal throughout the world.

Originally published by the

International Alliance for Sustainable Agriculture in 1987, the book's republication today by IOCU shows the recognition of its potential value in educating a wider audience about the dangers of uncontrolled pesticide use and the existence of alternatives. Over half the book is specifically devoted to the 'Dirty Dozen' and the non-chemical alternatives to their use. However, other chapters are more general, for example setting out the dangers of exclusive reliance on chemical pest control and outlining techniques for their reduction. Elsewhere the actions taken by groups such as PAN to encourage more sustainable and safer agricultural policies are discussed.

The book is readily accessible to non-scientific readers, who will welcome its heavy use of case studies. These back up its claim that chemical pest control is frequently unnecessary and can create greater problems than it solves. Since many of the 'Dirty Dozen' are already banned from use in Britain it is of less use as a practical guide to reducing pesticide use here, although its general policies are still applicable. However, it serves as another reminder that our failure to control pesticide exports continues to exact a terrible price in countries where there are no usage controls. Furthermore such pesticide-affected produce is still exported back into Britain.

Pete Snell

**GREEN DEVELOPMENT**  
W M Adams, £30.00 hardback,  
Routledge, 11 New Fetter Lane,  
London EC4, 1990, ISBN 0 415 00443 8

**AFTER THE GREEN REVOLUTION**  
G R Conway & E B Barbier, £8.95,  
Earthscan, 3 Endsleigh St, London  
WC1, 1990, ISBN 1 85383 035 6

Now that we all claim to be committed to green politics irrespective of our red, blue or yellow starting points, it has become necessary to distinguish between deep green, light green and what the Dulux manufacturers call a hint of green, to avoid the semantic vacuum into which the much abused word has fallen. These two books pose the

distinctions well.

In agriculture, deep green means sustainable agriculture usually allied to the concept of 'development' — and this is where the problems start. Bill Adams surveys the field from the vantage point of a Cambridge academic whilst Gordon Conway and Edward Barbier, working from the International Institute for Environment and Development, have more of a 'hands on' approach to the issues. Gordon Conway is in fact now in charge of the Ford Foundation's work in Nepal, India and Sri Lanka.

Bill Adams provides an extremely useful description of the 'greening' of development agencies and the debates surrounding them over the past 20 years. But the book is more a summary of the problems than a stab at some answers. After 200 pages the reader is certainly clearer about all the different meanings attached to 'development', 'sustainable' and 'green' but no nearer to a scientifically usable set of definitions that can take the debate forward. It is disappointing for example that Adams settles for definitions proposed in the Brundtland Report: 'Sustainable development' is 'development which meets the needs of the



present without compromising the ability of future generations to meet their own needs.'

This definition is entirely anthropocentric, oddly teleological and



# BOOK REVIEWS

smacks of having your cake and eating it. But more important, it offers no possibility of evaluating a project for sustainability except when it becomes unsustainable. We need to know whether snakes are poisonous *before* they bite; the fact that we will of course know afterwards may be scientifically interesting but is hardly useful. The Brundtland fudge is the predictable formulation of those who know they are living a privileged and unsustainable lifestyle and need to obscure this reality with a hint of green. Anything more might be too uncomfortable.

Despite capitalism, despite stalinism and despite 'the green revolution', more than half the world's food is still grown by sustainable methods. These involve a great deal of manual labour and the diligent returning to the land of everything that comes from the land. Self-sufficient peasants know all about sustainable agriculture because it is the central objective of their lives; their daily toil is quite self consciously for themselves, their children, their children's children and the future unborn.

The 'green revolution' has succeeded in destroying sustainable agriculture in many parts of the third world, replacing it with an agriculture dependent on chemical fertilisers, chemical sprays, mechanised irrigation and infertile F1 hybrid seeds. So today its first world protagonists (and beneficiaries) are busy claiming scientific ignorance of the insidious trade-off between sustainability and increasing yields. Instead they claim that 'more research is needed' — the classic subterfuge of all scientists confronted with the results of their shortsighted policies.

The green revolution had two aims. One was to make peasants dependent on external bought-in inputs so they were forced to produce an agricultural surplus for the market. The other was to use that surplus to feed expanding cities full of landless peasants, who could only survive by selling their labour. It was about turning free peasants into dependent workers for industrial labour. This global project to make everyone a waged worker was quite nicely garnished, to carry many

well-meaning liberals along with it. The realisation that the green revolution was not all it appeared to be came very slowly — many good people are still reluctant to see it as a total dead end. However, it is progress if the Ford Foundation now accepts that increased yields are rarely sustainable, and a move in the right direction if 'sustainability' can now be added to the litany of development truisms.

As for useful definitions, let me fill the vacuum with my own, hopefully fertile cryptogram: Sustainable agriculture has an energy input/output ratio of not less than 1:10 and a labour productivity of not more than 1:100 measured in energy terms.

Robin Jenkins

## A HEALTHY START

Lesley Forrest, Andre Deutsch, 105 Great Russell St, London WC1, £4.99, 1990. ISBN 0 233 98568 9

## FEED YOUR CHILD SAFELY

Caroline Bunker, Ebury Press, 20 Vauxhall Bridge Rd, London SW1, £5.99, 1990, ISBN 0 85223 877 0

## FEED YOUR CHILDREN WELL

Simon & Joanne Blackley, Penguin Books, 27 Wrights Lane, London W8, £3.99, 1990, ISBN 0 14 046843 9

## SAFE FOOD HANDBOOK

eds: Joan & Derek Taylor, Ebury Press, (as above), £6.99, 1990, ISBN 0 85223 823 1

There is nothing like a series of scares to get parents worried about what to feed their children — and nothing like a sharp-eyed commercial publisher to see a gap in the market for books to placate those fears.

Helena Rubinstein is credited with saying that she didn't sell cosmetics, she sold hope. Publishers, it seems, sell sedatives.

Of the four books here, one (*A Healthy*



*Start*) doesn't attempt to look at broader food issues but launches straight into a series of recipes for people with time to cook for their babies. It includes a lot of nice simple ideas, especially for nutritious weaning foods.

If you want a bit more nutritional awareness thrown in, but not too much, try *Feed Your Child Safely*. This is two-thirds recipes (a good proportion vegetarian) and one third overview of some of the problems with modern food, with some tips for healthier eating.

The third, *Feed Your Children Well*, reverses the proportions, with the first two-thirds of the book devoted to a more detailed appraisal of the commercial world of food production and food quality. This draws on the authors' work in Neal's Yard wholefood stores in Covent Garden,

supplemented by a careful reading of the Food

Commission's publications! There is a tendency towards the assertive (eg 'Your example will be the most significant factor in shaping your child's food choices') but it is rewarding — and perhaps a sign of the times — to see Penguin Books promoting a book rooted in the wholefood movement, as part of their mainstream titles list.

Lastly comes a book with only a handful of recipes and a great mass of information on the state of food in the



UK. *The Safe Food Handbook* derives much of its thinking from the Food Commission and its friends, and is the main publication of Parents for Safe Food, founded late last year. The book has less to do with turning inwards to your own kitchen and more

to do with surviving in the supermarket. An A to Z Buyer's Guide takes up half the book, with tips on comparing products, reading labels and looking behind the images that food companies sell. This is the least sedative of all four books, turning readers' anxiety about feeding their children into anger about what they are being sold by the food industry.

Tim Lobstein





# MARKET PLACE

## BACK ISSUES

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- ★ BST — what's in our milk?
- ★ Do we need added bran?
- ★ Taking the lid off canned meat

### Issue 2

- ★ Hidden hazards in healthy foods
- ★ A hard look at ice cream
- ★ Homeless and hungry

### Issue 3

- ★ Fast food secrets
- ★ School dinners
- ★ The cost of healthy food

### Issue 4

- ★ Baby foods — read the label
- ★ The not-so-healthy cereal bars
- ★ Supermarkets' green policies

### Issue 5

- ★ The 'premium' sausages rip-off
- ★ Alcohol in gripe water
- ★ Aluminium in baby milks

### Issue 6

- ★ Microwave hygiene hazards
- ★ Fruit drinks less than 50% juice
- ★ Vitamin enriched junk food

### Issue 7

- ★ Fish missing from fish fingers
- ★ 'Low alcohol' confusion
- ★ Hazards for cocoa workers

### Issue 8

- ★ Guide to butter substitutes
- ★ Catering in HM prisons
- ★ Germaine Greer on sex and food

### Issue 9

- ★ Children's TV food advertising
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- ★ Fish scraps sold as steak

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If you missed any of this essential reading then don't hesitate to order a back issue — just use the order form on the opposite page.

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# WHAT THE JOURNALS SAY

*Beef anxieties, salmonella on the increase, blood cholesterol arguments and vitamin pills — Eric Brunner reviews the medical press.*

## PSYCHIATRISTS' ANXIETY OVER BSE

Ninety nine per cent of psychiatrists questioned at the Maudsley Hospital in South London believe there is some risk of transmission of the cattle disease BSE to humans through eating infected beef. The small survey suggests that official pronouncements have failed to reassure doctors, as well as the general public. Less than a third of the 70 respondents felt that the public had been fully informed about the possible dangers of eating infected beef. Suggestions for measures to eradicate BSE and give full reassurance included the screening of animals in herds that contained an infected cow, slaughter of the offspring of BSE cows, and research on transmission from cows to non-human primates. Four per cent of respondents were vegetarians.

Howard R and Castle D, Concern about bovine spongiform encephalopathy (letter), *The Lancet* 1990, vol 336, p316.

## SALMONELLA ENTERITIDIS EPIDEMIC CONTINUES

Figures from the Communicable Disease Surveillance Centre show that reported salmonella infections

rose from 981 in May and early June 1989, to 1192 for the same period this year. Three quarters of the total were for salmonella enteritidis. It seems that the slaughter of millions of hens and the banishment of raw egg from many if not most kitchens has had little effect.

Minerva, *British Medical Journal*, 1990, vol 301, p132.

## BLOOD CHOLESTEROL TESTING

A draft official report recommends that the best policy for cholesterol testing is one based on doctors screening patients who visit them for other reasons. This 'opportunistic' approach lies somewhere between a public health, population-based perspective to heart disease prevention, and one based on identifying and treating only those at high risk. It is most likely the result of a political compromise between the two main currents represented on the Standing Medical Advisory Committee (SMAC).

Though SMAC was asked in 1988 to look only at cholesterol testing, its first recommendation is for a national campaign on diet and smoking (exercise is not mentioned). It then argues for opportunistic testing to identify those who have not altered their diet and

blood cholesterol, and others whose blood cholesterol is high for genetic reasons (about one in 500 people) or does not respond to diet change. Cholesterol-lowering drugs could then be prescribed.

SMAC's conclusions are based on an economic analysis, questioned by some, which estimated that a screening programme among all 40-69 year olds would cost £271 million a year, or £3128 for each year of life saved. This compares favourably with cervical and breast cancer screening. The 'opportunistic' approach recommended by SMAC would be cheaper, but fewer lives saved. One critic described the assumption that less than an hour of diet counselling was needed to achieve a 5-15% reduction in blood cholesterol as 'heroic'. The report does not address concerns about the problems of mass drug treatment — perhaps for five per cent of the population. £250 million for cholesterol-lowering drugs compared with some £4 million for 'Look After Your Heart' does not produce balanced preventive health care.

SMAC, *Blood Cholesterol Testing* Dept. of Health, Alexander Fleming House (071-407 5522). The consultation period ends on 31 October.

## SCREENING PROBLEMS SERIOUS

Screening people for their blood cholesterol levels can be dangerously inaccurate. Analysis of 14,600 measurements using cholesterol screening found high rates of misclassification into 'danger' or 'safe' categories.

A single blood cholesterol measurement can misclassify almost 30 per cent of middle-aged men into a 'danger' zone above 6.9 mmol/l. A 'safe' reading may occur when the true cholesterol level is rising. As far as cholesterol is concerned, screening tackles the problem once it has already developed, rather than preventing it at earlier age.

Thompson SG and Pocock SJ. The variability of serum cholesterol measurements: implications for screening and monitoring. *J Clin Epidemiol* 1990, vol 43, pp783-9.

## SUPPLEMENTARY INFORMATION

The US slimming industry sold an astounding \$33 billion of pills, supplements and services in 1989. Many of its customers have suffered at the hands of 'weight loss professionals', but now a subcommittee of the House of Representatives is conducting hearings on what it calls the industry's deceptive and risky practices. (*News, British Medical Journal*, 1990, vol 300, pp 1481-82).

In Britain Hoffman La Roche has launched its vitamin information service to provide 'advice' to those concerned to take the right pill. There is still a gap to be closed between popular beliefs about the value of vitamin C and the common cold, and the conventional medical view that healthy people eating a healthy diet do not need such supplements. Toxic effects are possible from very high doses of vitamins A, D and B6, so some care is needed. Research is continuing on the use of vitamins at the start of pregnancy to reduce the risk of birth defects and also to test whether the antioxidant vitamins A, C and E may protect against certain types of cancer.

Truswell S, Who should take vitamin supplements? *British Medical Journal*, 1990, vol. 301, pages 135-6.

## IMMUNITY AFTER BREAST-FEEDING

Researchers from the University of Alberta have found that breast-feeding in the first few weeks can enhance the immune response of babies to vaccines when the babies are seven or even twelve months old.

Antibody levels in response to routine 'flu vaccines were significantly higher in breast-fed babies compared with formula-fed babies at seven months and at twelve months. The findings are strong evidence that breast-feeding enhances active immune responses for at least the first year of life. Health workers evaluating the effectiveness of vaccination programmes should take the baby's early feeding method into account.

Pabst HF and Spady DW Effect of breast-feeding on antibody response to conjugate vaccine. *The Lancet*, 1990, vol 336, p269-70.

## COMING SOON IN THE FOOD MAGAZINE!

Future issues of The Food Magazine will include:

- ★ New evidence on pesticides
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