

**LIVING
EARTH**

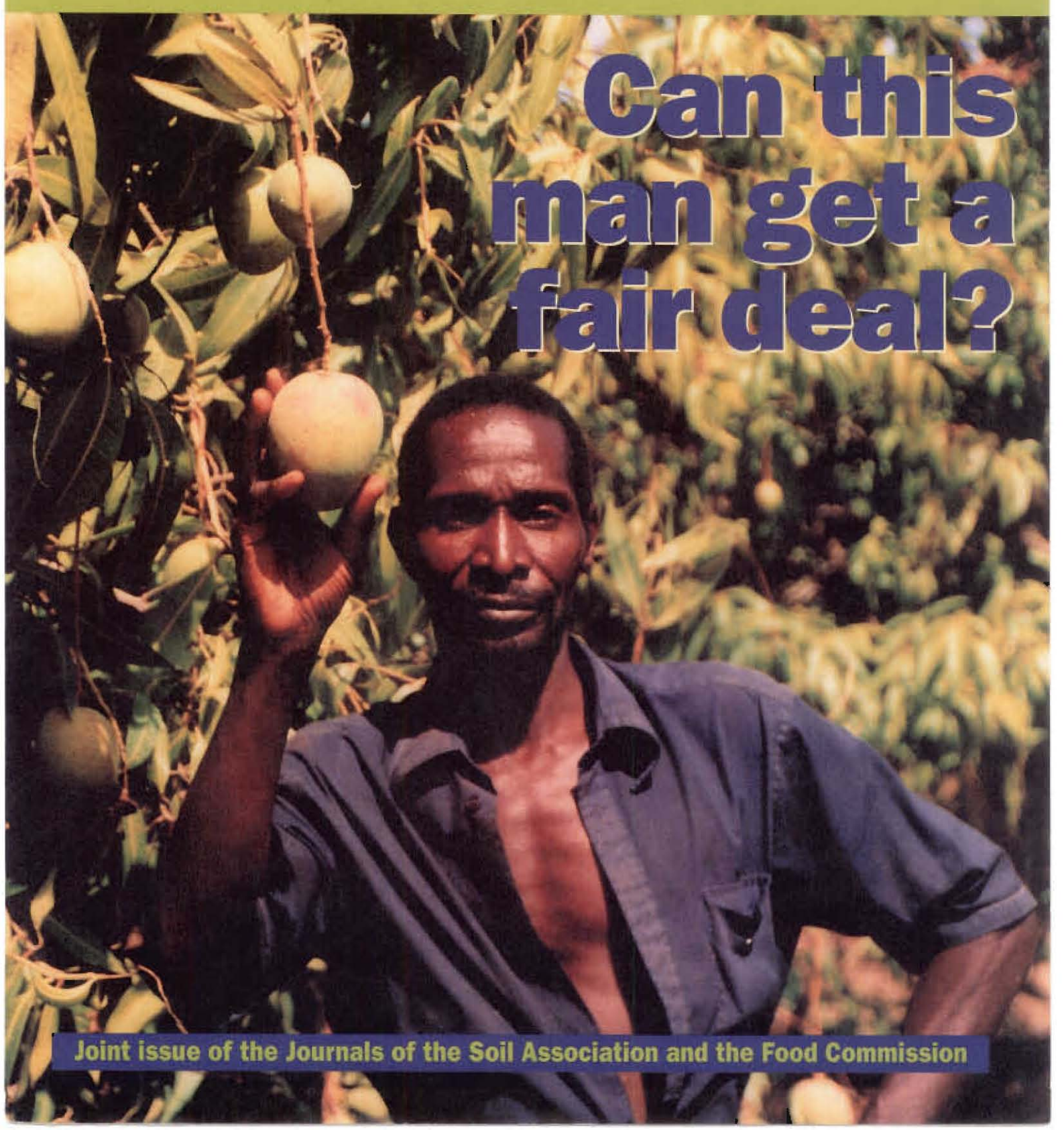


THE
FOOD
MAGAZINE

No. 182 ♦ May 1994

£3.50

Issue 25 Volume 3 ♦ May 1994

A photograph of a man with dark skin and a beard, wearing a blue button-down shirt, holding a round, light-colored fruit (possibly a peach or apple) in his right hand. He is standing in front of a dense field of similar trees with many fruits hanging from the branches. The background is slightly out of focus, showing more of the orchard.

**Can this
man get a
fair deal?**

Joint issue of the Journals of the Soil Association and the Food Commission



The Soil Association exists 'to research, develop and promote sustainable relationships between the soil, plants, animals, people and the biosphere, in order to produce healthy food and other products while protecting and enhancing the environment'.

The Soil Association's Symbol Scheme is run by SAOMCo Ltd and licenses commercial food production to the highest organic standards and acts as a consumer guarantee of organic quality.

Soil Association Officers

President George McRobie
Secretary Francis Blake
Chairman Charlotte Mitchell*
Treasurer Craig Sams*

Soil Association Council

Helen Browning* David Marlow
James Burrows* John Montague
Dougall Campbell Hugh Raven*
Tracey Clunies-Ross* Charlotte Russell
Alan Debenham Lizzie Vann
Henrietta Green Nic Lampkin
Cindy Milburn

* Management Committee

Staff

General Manager & Accountant Alison Ollis
Policy Director Patrick Holden
Membership Administrator Stephanie Jones
CSA Education and Project Organiser
Eric Booth
Bookshop Manager Ann Cahill
Administration Assistant Carol Dale
Research/Development Consultant
Dr Mark Redman

SAOMCo Ltd

Chairman Roger Cadbury
Symbol Director Francis Blake
Non-executive Director Helen Browning
Non-executive Director Dougall Campbell
Technical Director John Dalby
Forestry development Officer
Dr Dorothy Jackson
Forestry Officer Ian Rowland
Symbol Dept. Administrator Caroline Fitzgibbons
Administration Assistant Lena Hadden
Symbol Dept. Administrator Sally Sonnen

— THE — FOOD COMMISSION

The Food Commission is Britain's leading consumer watchdog on food. We are independent of 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.

The Food Commission Research Charity aims to relieve ill health and advance public education through research, education and the promotion of better quality food.

Co-directors Sue Dibb and Tim Lobstein
Information Officer: Mary Whiting
Subscriptions and Admin Manager:
Ian Tokele

Food Irradiation Campaign officer and EEC network co-ordinator: Martine Drake

editorial

Shopping is political

Choosing one politician from another has occupied the headlines this spring. But choosing what we eat has become more of a political act than ever, while choosing a political party has become less. Why? Because of the GATT deal signed in Marrakesh for one thing.

From BST in your milk (see page 6) to the price of mango jam (page 11), the GATT deal will alter quite fundamentally the control we have over our food standards and the world's food supply. Under the GATT deal the UK may not turn away hormone-treated beef, irradiated poultry, BST-produced milk, dolphin-unfriendly tuna – it would be illegal under the GATT regulations.

Similarly, a co-operative growing mangoes in Burkino Faso cannot seek governmental support for the export of its jam as that would be an illegal subsidy. With our politicians reduced to the role of traffic wardens, checking that GATT's regulations are obeyed, there remains only one effective way to vote – with our purses.

Fairly traded food is a growing market in the UK. On pages 11-13 we look at the food products which guarantee a fair return for their producers and thus help maintain communities and protect environments.

Images of happy cows are used to sell us milk and dairy products. But, says Colin Spencer on page 5, the life of a modern dairy cow is far from a happy one with mastitis and lameness common complaints of the overworked dairy cow. And BST is threatening to increase their milk supply to even higher levels. Shoppers with a conscience should buy organic argues Mark Redman of the Soil Association. And on page 9 we provide a directory of where you find organic dairy products.

Happy shopping!

Advertising policy

The promotion of commercial products in this magazine is undertaken by the Soil Association, not the Food Commission. For details on how to advertise, or comments on the advertisements, please contact the Soil Association on 0272 290661.

Living Earth (formerly Mother Earth, the Journal of the Soil Association, and the Soil Association Quarterly Review) is published every three months by the Soil Association Ltd, 86-88 Colston Street, Bristol, Avon BS1 5BB, tel: 0272-290661, fax: 0272-252504. This edition May 1994, the 50th year of publication, issue no. 182.

The Food Magazine is published quarterly by The Food Commission (UK) Ltd, Third Floor, 5-11 Worship Street, London EC2A 2BH, tel: 071-628 7774, fax: 071-628 0817. This edition May 1994, the 6th year of publication, issue no. 25. ISSN 0953-5047

■ This edition has been edited by Tim Lobstein and Sue Dibb. ■ Editorial advice

from Charlotte Mitchell. ■ Typesetting and design by Sarah Dobinson of Artworkers, 1a Berry Place, Sebastian Street, London EC1V 0JD. ■ Printed by Spider Web, 14-20 Sussex Way, London N7 6RS. ■ Inside pages printed on recycled paper, cover printed on conservation grade paper. ■ Retail distribution by Central Books, 99 Wallis Road, London E9 5LN. ■ Unless otherwise indicated all items are the joint copyright © the Soil Association Ltd and the Food Commission (UK) Ltd 1994 and are not to be reproduced without written permission from both bodies.

■ The views expressed in this magazine are not necessarily those of either the Food Commission or the Soil Association.

contents

News

| | |
|---------------------------------|----|
| Organics boost sperm count | 3 |
| MAFF suppresses organic report | 3 |
| Consumers trust pressure groups | 3 |
| Slimming ads break code | 4 |
| SA launches Woodmark | 4 |
| News in brief | 10 |

Special Milk Feature

| | |
|---------------------------------------|-----|
| Colin Spencer on the modern dairy cow | 5 |
| BST latest | 6-7 |
| Organic dairy farming is best | 8 |
| Guide to organic dairy products | 9 |

Checkout

| | |
|--|-------|
| Fair exchange is no robbery – Special feature on ethical trading | 11-13 |
| Fortified future – adding pills to junk | 14-15 |
| Loopy labels | 16 |
| Loopy labels extra – the banned colourings | 17 |

Nutrition

| | |
|--------------------------|-------|
| An A-C-E diet for health | 19-21 |
|--------------------------|-------|

Genetic Engineering

| | |
|------------------|----|
| The soup of life | 23 |
|------------------|----|

National Food Alliance News

| | |
|--|----|
| | 24 |
|--|----|

Letter from the Yemen

| | |
|--|----|
| | 25 |
|--|----|

Books

| | |
|--|----|
| | 26 |
|--|----|

Events

| | |
|--|----|
| | 27 |
|--|----|

Classified

| | |
|--|----|
| | 27 |
|--|----|

Backbites

| | |
|--|----|
| | 28 |
|--|----|

■ Cover picture: Fruit growing cooperative member in Burkino Faso (Photo: TWIN)

Secret report favours organics

A scientific analysis of the nutritional quality of fruits and vegetables grown organically has been suppressed for four years by the Ministry of Agriculture, Fisheries and Food. The research document, obtained by *Living Earth and the Food Magazine*, shows higher levels of vitamins and minerals in some organic crops compared with non-organic.

A two year research programme at the Campden Food and Drink Research Association looked at thirty samples each of fruits and vegetables bought in health food stores and

supermarkets. The results were submitted to MAFF in 1990. Although the research had been funded by a MAFF grant from public funds, and although the researchers called for further testing of crops grown in controlled conditions, the report was never published and the grant was not renewed. The report had initially been marked confidential and had then been made 'available to the food industry' and a single copy put in the MAFF library.

The researchers found significant nutritional differences between

organic and non-organic produce, along with great variability between samples of each fruit and vegetable tested. Organic apples and tomatoes tended to be richer in vitamins than non-organic, while carrots and cabbage showed few significant differences. Non-organic potatoes showed better vitamin levels but, after the higher water levels in the organic produce were accounted for, the organic potatoes showed superior mineral levels (see table).

A previous study undertaken by Swedish laboratories in the 1970s* showed reduced water content, reduced nitrate levels and increased vitamin C in organic potatoes. Rabbits and hens showed higher survival rates and improved fertility among animals reared with organic feed*. Hens eggs showed larger yolks and less white albumen.

* Summaries of these two research projects are given in *Food Quality: Concepts and Methodology* (colloquium proceedings), Elm Farm Research Centre, 1992.

Organic food may double sperm rates

A Danish study of organic farmers and others who live mainly on organic foods found that the men had sperm counts nearly double those of the national average. A study by the Department of Occupational Medicine at Aarhus tested men attending a national organic farming meeting during February. The number of sperm cells alive and able to fertilize an ovum are normally 50-55 million per millilitre but the organic men were able to produce an average almost twice as high, said a spokesperson for the ecology group Landsforeningen Økologisk Jordbrug. Average sperm counts in western Europe have been decreasing during the century. It is now estimated that one in six couples are experiencing infertility, with a third of these cases caused by the male partner's low sperm counts.

■ More details from the Soil Association: also from Jens Peter Bonde, Aarhus Dept of Occupational Medicine, tel (86) 12 55 55; and Kristian Andersen, Danish National Board of Organic Farming, tel (30) 63 04 72.

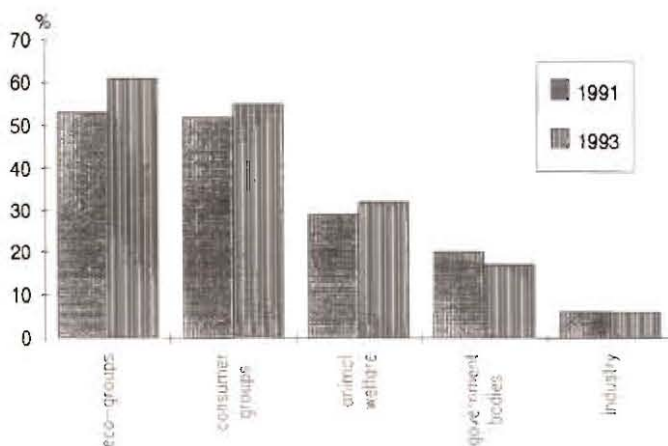
Nutritional differences between organic and non-organic produce

Thirty samples of each sort of produce were tested for vitamin C, sugars, iron and potassium. Tomatoes and carrots were tested for carotenes (vitamin A), and potatoes tested for calcium. Figures given below are for nutrients that differed significantly (97.5% probability).

| | Organic per 100g | Non-organic per 100g |
|-----------------------------------|----------------------------|-------------------------|
| Apples | | |
| Sugars (total) | 8.8g | 9.5g |
| Vitamin C | 21.6mg | 19.3mg |
| Apples after dehydration | | |
| Sugars (total) | 63.4g | 70.0g |
| Tomatoes | | |
| Vitamin C | 21.8mg | 18.0mg |
| Vitamin A | 4.7mg | 3.5mg |
| Tomatoes after dehydration | | |
| Vitamin C | 349mg | 288mg |
| Vitamin A | 7.3mg | 5.5mg |
| Carrots | | |
| Glucose | 0.9g | 1.3g |
| Potassium | 269mg | 217mg |
| Carrots after dehydration | | |
| Sugars (total) | 42.8g | 52.8g |
| Cabbage - both methods | no significant differences | |
| Potatoes | | |
| Sugars (total) | 0.7g | 0.8g |
| Vitamin C | 13.5mg | 17.8mg |
| Potassium | 329mg | 370mg |
| Zinc | 310µg | 260µg |
| Potatoes after dehydration | | |
| Sucrose | 1.0g | 2.4g |
| Fructose | 1.2g | 0.7g |
| Glucose | 2.0g | 1.2g |
| Iron | 5.7mg | 4.7mg |
| Calcium | 64.0mg | 56.4mg |
| Zinc | 1810µg | 1350µg |

■ Source: *Analytical Survey of the Nutritional Composition of Organically Grown Fruit and Vegetables*, Pither & Hall, Technical Memorandum 597, Campden Research Station 1990. MAFF project no 4350 (unpublished).

Consumers trust pressure groups, not industry



Environmental and consumer groups are seen as the most reliable sources of information on biotechnology for members of the public, according to a report submitted to the European Commission. The standing of such groups has risen since a similar study two years earlier. A staggering 83% of the 13,000 interviewees in 14 countries did not trust government or public authorities and 94% did not trust industry.

■ *Biotechnology And Genetic Engineering: What Consumers Think About It In 1993*, Eurobarometer Report 13.9, INRA Europe, for EC DG XII E/1, October 1993.

ASA slams slimming ads

The Advertising Standards Authority have reported that two out of three adverts for slimming products flout its code of practice. In a survey of 124 adverts for 31 different products advertised during January in national and regional newspapers and women's magazines, only 11 products did not present problems under the Code. The ASA acknowledges that slimming products are an area of potential consumer vulnerability and that this level of failure to follow the code is substantially higher than for other areas.

The Food Commission, which has been running a campaign against bogus slimming claims, has welcomed the ASA report, but points out that the ASA's acknowledgement indicates their failure as a regulatory body to control misleading slimming adverts. The Food Commission has found that many of the worst breaches of the code are committed by per-

sistent offenders, often advertising 'miracle' slimming products.

The advertising code, which is drawn up by the advertising industry and has no legal status, states that publishers should submit slimming product adverts, together with full substantiation for claims, for approval before adverts are run. 'The ASA is currently running its own advertising campaign aimed at reassuring the public that it is keeping "tabs on ads", yet for slimming products the system is clearly not working,' says Sue Dibb of the Food Commission. 'The ASA appears to refuse to act effectively against offending publishers and advertisers.'

The ASA is currently reviewing its codes of practice and for the first time is consulting with consumer and public interest organisations. The National Food Alliance is preparing a submission which will include recommendations for effective sanctions.

Nader hits at GATT

US campaigner Ralph Nader has called for a 3-year moratorium on GATT and the World Trade Organisation to give a trade and environment committee time to rewrite the rules and to 'democratise' GATT dispute procedures. Nader has warned that the present deal could undermine bans on hormone-treated beef, controls on food irradiation, meat inspection and nutrition labelling rules. 'Nothing is more likely to pull down present US consumer and environmental protections and derail future advances than the proposed trade deal,' he said.

Peanut allergy

The death of Sarah Reading after eating peanuts in a lemon meringue in Debenhams has led to further calls for better food labelling. Sarah's father has formed a campaign to tighten up the labelling laws. Send a stamped self-addressed envelope to David Reading, 8 Wey Close, Ash, Aldershot, Hants GU12 6LY (tel 0252 318723).

Eco-groups call for EU action

An alliance of European ecological and consumer groups has called on the European Commission to increase their activity on sustainable consumerism. The conference report urges the EC's Consumer Policy Service (CPS) department to make sustainability a major part of the EU's response to the Rio Declaration on the environment. The conference also called for greater liaison between the CPS and both European eco-groups and groups from outside the EU, especially in developing countries.

■ *Sustainable Consumption, Environment and Development, Proceedings of the 4th meeting of the European Ecological Consumers Co-ordination* by Martine Drake and Tim Lang, March 1994. Available price £2 (postage stamps accepted) from Martine Drake, c/o The Food Commission, 3rd Floor, 5-11 Worship Street, London EC2A 2BH.



WOODMARK

Royal backing for Soil Association's Woodmark

The Soil Association's recently launched 'Woodmark' timber certification scheme has been endorsed by HRH Prince Charles who has praised the SA's initiative in promoting responsible forestry against powerful vested interests.

Speaking at WWF's 'A Future for Forests' seminar last month, Prince Charles said 'I think the example of the Soil Association in certifying organic timber is quite instructive. This relatively small organisation recognised the need to certify the production of organic farms in 1973.

The Symbol Scheme was established to the kind of scepticism and muted hostility which brave people who try to do something new usually encounter. Less than twenty years later, it was the Soil Association to whom the UK government and even the European Union turned to draw up their own certification schemes. It was therefore no surprise to me to find that the Soil Association is once again taking a leading role in timber certification and labelling'.

Putting his words into practice, Prince Charles has asked the Soil Association to certify woodlands in the Duchy of Cornwall. He also announced that all Royal Households will only purchase independently certified timber.

Pengelli Forest first holder of SA's Woodmark

The first certification under the SA's Woodmark label was announced at WWF's A Future for Forests Seminar. Dorothy Jackson, coordinator of the scheme said, 'More than two years of research, consultation and field testing have now born fruit with the certification of the Pengelli Forest, managed by the Dyfed Wildlife Trust. Certification of Dartington Home Woods is in progress, and six other British and European certifications are in the pipeline.'

Manufacturers and specifiers are now actively looking for sources of independently certified timber. British woodland owners are invited to register with the SA's Woodmark scheme, thereby gaining access to this new market, adding value to their timber and publicising their woodland management skills. Costs are very reasonable, and existing organic Symbol holders are eligible for substantial discounts.

Rival scheme lacks credibility

The UK forest industry's body (FICGB), caused some confusion and irritation at WWF's Forest Seminar when it announced a rival Woodmark label which does not require certification but merely states that the timber has been felled under British government licence.

The Soil Association's Woodmark scheme is independent, international in scope, and based on defined criteria for environmental protection and social benefits developed by consulting with all sectors. FICGB were invited to comment on the SA's scheme last year.

FICGB's choice of name for their advertising label, the apparent haste with which the idea was put together and the lack of any consultation, suggest a deliberate attempt to 'spoil' the SA's Woodmark.

'We are willing to work with all sectors to achieve independent timber certification that is credible with consumers,' said Dorothy Jackson of the SA's Woodmark scheme, 'and have requested a meeting with the Forestry Commission to discuss options.'

Images of happy cows are used to sell us milk and dairy products. But, in our special feature on milk production, we look at some of the realities of modern dairy farming. Here Colin Spencer argues that the life of a modern dairy cow is far from contented.

Overleaf we ask why, despite overwhelming consumer opposition, the milk-boosting hormone, BST may soon be adding to our daily pinta? And on pages 8-9 Mark Redman puts the case for organically produced milk, butter, cheese and yoghurts, together with a directory of where to find organic dairy products.

Cows in clover?

We tend to have a cosy picture of cows ambling around in daisy-studded clover chewing contentedly. It is a picture that both the National Dairy Council and the advertisers wish us to have so that we will continue to consume huge amounts of dairy products, unshaken in our belief that they are good for us. The reality is a shocking contrast to this pastoral idyll.

Consider this fact alone: After giving birth to a calf, a cow will naturally give 7 litres of milk per day. But under today's system she can give anything from 25 to 40 litres. Professor John Webster of the Department of Animal Husbandry at the University of Bristol says that 'the dairy cow is the most hard working of all our farm animals. If we were to work as hard as the dairy cow we would have to jog about six hours a day, every day of the year'. So there is little contentment in cows chewing the cud. They are more likely to be voracious eaters as they will lose sleep and rest in an unremitting attempt to consume enough to keep up with the great yield from their mammary glands that is expected of them by modern farming methods.

Today's cow has been selectively bred to give more milk and more beef. Eighty per cent of our beef comes from the dairy herd. Supplying the vast burger industry with its enormous hunger for beef mince, rests upon the exhausted, sick and weary dairy cow, who long before her natural span of 40 years is sent to the slaughterers aged six to eight years. Her metabolism has been so wracked by overwork that she is likely to be sterile and almost inevitably has fallen prey to diseases, such as mastitis – an infection of the mammary glands. The average incidence of mastitis is thirty-five cases in every hundred cows – an absurdly high figure which world-wide costs the industry \$1000 million a year. Twenty-five per cent of cows suffer from lameness each year, caused, Professor Webster believes, by the abnormal size

of the udder which throws the back legs out and forces the weight of the cow onto the outside of their hooves.

Why should we inflict so much hard labour on this creature? Do we need all this milk? Last year we had surplus milk, butter and beef with 92,000 tonnes of skimmed milk powder, 168,000 tonnes of butter and 641,000 tonnes of beef held in EC surplus costing the taxpayer vast sums in storage costs. Meanwhile both the meat and dairy industry continue still to get the largest subsidies from the EC each year.

Well, Mrs Thatcher said it was a funny old world. But in my opinion this is the action of a sick and lunatic world.



When successive nutritional reports have told us we eat too much saturated fat, we still pay subsidies to farmers to continue to produce it, deliberately treating animals with indifference and inhumanity to do so.

'What fat?' the Dairy Council will cry. 'Look at the rise in the consumption of skimmed milk'. True. But where does all the fat go from skimming that milk? Into real ice cream, creamy yoghurts, convenience puddings, cakes and frozen desserts – sales of which continue to climb. Ninety per cent of the animal fat in our diet comes

from one source only – the dairy cow.

We are told, of course, by the Dairy Council and others that milk contains valuable calcium which is vital to our health especially to our children while they are growing up. True – up to a point. But the milk advocates can never explain away the health of two-thirds of the world that is lactose intolerant and cannot digest milk. The two nations that consume the most milk, New Zealand and the USA have the highest incidence of osteoporosis, the explanation being that a diet high in protein will cause calcium to be lost in the urine. Hence, with our western diet (which is still too high in protein) you will probably lose the benefit from the calcium in

the dairy products anyway.

Please let us try and look at the dairy industry and the plight of the cow with new eyes. Do we really need to do this to her? And in case you think me biased, let me give the last word to Dinah Williams, a dairy farmer and former president of the English Guernsey Cattle Society who in a letter to *Farmers Weekly* (23.7.93) sums up the intensively-managed cows life today as 'a tale of exploitation and cruelty'.

■ Colin Spencer is a food writer who made *Daisy's Torment*, for Channel 4's *Food File*.

Milking a cash cow

Despite European milk lakes and continuing consumer resistance, the genetically engineered milk-boosting hormone Bovine Somatotropin (BST) is likely to be given EC approval by the end of 1994. BST has become a test case in Europe for commercial interests versus economic, social and animal welfare interests. Tim Lobstein reports on recent developments.

Consumers don't like the idea of their milk being tampered with. Farmers and the dairy trade don't like the idea of consumer resistance. But the BST-producing companies have spent a fortune developing the hormone and want to see their investment rewarded. The story of BST is a classic confrontation between the consumers' need to believe they are eating wholesome food made in environmentally-friendly surroundings versus medical science exploited for profit.

Until the end of last year it looked like consumers were winning. The European Commission had suggested a provisional ban on BST until the ending of the milk quota arrangements in March 2000. Then, as we reported in the last issue of the *Living Earth* and *Food Magazine*, the hormone was approved for use in the USA in November and a month later the EU Council of Ministers decided to reject the

Commission's proposed provisional ban.

We now know that the Council of Ministers divided into three groups:

- the UK and Belgium, who wanted BST legalised immediately

- Germany and Luxembourg, who wanted a permanent ban

- all other EU countries, who supported the Commission's proposal.

The compromise position adopted was to continue the ban for twelve months, to the end of 1994.

The Commission had argued that BST encouraged excessive milk production and was not compatible with the milk quota arrangements. Although the pharmaceutical companies had previously complained that BST should be treated like any other veterinary product and need not be evaluated on social and economic criteria (the 'fourth hurdle') they have now prepared a point by point rebuttal of the European Commission's arguments. The companies now claim that BST will have little impact on milk production, will not affect smaller farmers adversely, and should have no impact on consumer demand.

The companies are also claiming that the drug will be used as a management tool by farmers wanting to ensure they fulfil their milk quotas. At present, farmers tend to over-produce in order to ensure they do not fall short of their quota, whereas the judicious use of BST could, they argue, be used to 'top-up' production where a shortfall is predicted. However, the product details supplied with the drug in the USA (see opposite page) state that BST should be administered every 14th day from the 9th week after calving until the end of lactation.

BST labelling

Meanwhile the House of Commons European Standing Committee A debated the labelling of BST-produced milk in February, with Elliot Morley for the

Labour party arguing that milk should be labelled and that 'if the labelling cannot be dealt with satisfactorily, BST should not be allowed to be marketed in the European Union.'

In reply, government food minister Nicholas Soames acknowledged the need for consumer choice, but said, 'There is nothing to prevent the voluntary labelling of milk from BST-treated cows should this be demanded by the marketplace... But it is a different matter to require the compulsory labelling of milk and all milk products, regardless of market pressure.' He continued by arguing that such a requirement 'would be unenforceable because manufactured BST is indistinguishable from naturally occurring BST which is found in minute quantities in all milk'.

The fact that irradiated food has to be labelled despite no acceptable tests for checking whether a food has been irradiated is conveniently forgotten. As far as the government is concerned, and to the pharmaceutical industry's delight, labelling of BST-produced milk will not be required.

Breast cancer

Opposition to BST in America has now turned to new concerns that BST-milk will contain substantially higher levels of insulin growth factor (IGF-1) which is linked to human immune responses.

Professor Samuel Epstein of Illinois University points out that IGF-1 is not destroyed by pasteurisation and is absorbed through the gut, especially by infants. IGF-1 is believed to increase cell division in the human breast and encourages malignancies. It has also been associated with colon cancer.

Professor Epstein has submitted his concerns to the US Food and Drug Administration but has not received a reply.

BST CONCERN:

TEN REASONS WHY BST SHOULD NOT BE ALLOWED

The campaigning organisation BST Concern has prepared a ten point list of objections to BST.

For full details send two 25p stamps to BST Concern, c/o Genetics Forum, 3rd Floor, 5-11 Worship Street, London EC2A 2BH.

PST... do you wanna buy some hormones?

The genetically engineered synthetic pig growth hormone Porcine Somatotropin (PST) is to be approved for use in Australia by the country's National Registration Authority.

Pig meat produced using the hormone will not be labelled and excess PST may be present in the meat when consumed. PST-treated meat may be exported to Europe, where PST has not been authorised for use. Attempts to ban PST meat imports to the UK may be declared illegal under GATT rules.

■ Details from the Food Policy Alliance, Level 7, 191-199 Thomas St, Haymarket, NSW 2000, Australia (tel (02) 334 9242, fax (02) 334 9252).

BST producers admit to hazardous side-effects

The manufacturers of the milk-boosting hormone BST are admitting to vets that there are side-effects to their drug which can seriously harm an animal's health.

As a pharmaceutical product now licensed for use in the USA under the trade name Posilac, all packs of the drug have to carry a product information leaflet giving details of administering the product and its possible side effects.

The text, taken from the Posilac leaflet, is shown here. The product admits to increases in ovarian cysts, uterine disorders and retained placentas, and to decreases in gestation periods and calf birth weights in cows treated with Posilac. The manufacturers also admit to the increased risk of mastitis (infected udders) and a general need for increased medication for Posilac-treated cows.

Although BST is not permitted in Europe yet, the US leaflet declares that the product was manufactured in Austria and packaged in the Netherlands.

Reproduction: Use of POSILAC (sterile somatotrope zinc suspension) may result in reduced pregnancy rates in injected cows and an increase in days open for first calf heifers. Use of POSILAC has also been associated with increases in cystic ovaries and disorders of the uterus during the treatment period. Cows injected with POSILAC may have small decreases in gestation length and birth weight of calves and may have increased twinning rates. Also, the incidence of retained placenta may be higher following subsequent calving. Use of POSILAC should be preceded by implementation of a comprehensive and ongoing herd reproductive health program.

Mastitis: Cows injected with POSILAC are at an increased risk for clinical mastitis (visibly abnormal milk). The number of cows affected with clinical mastitis and the number of cases per cow may increase. In addition, the risk of subclinical mastitis (milk not visibly abnormal) is increased. In some herds, use of POSILAC has been associated with increases in somatic cell counts. Mastitis management practices should be thoroughly evaluated prior to initiating use of POSILAC.

Studies indicated that cows injected with POSILAC had increased numbers of enlarged hocks and lesions (e.g. lacerations, enlargements, calluses) of the knee (carpal region), and second lactation or older cows had more disorders of the front region. However, results of these studies did not indicate that POSILAC increased lameness.

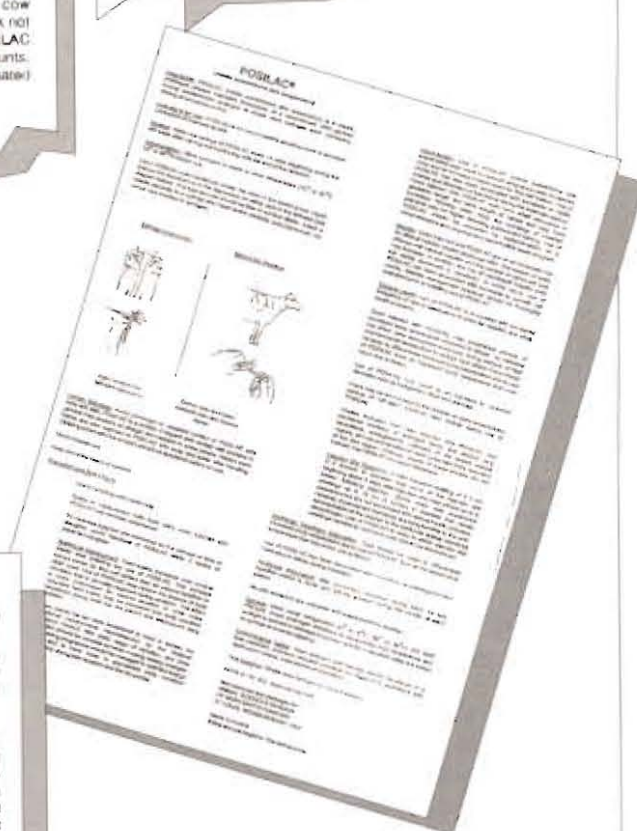
Injection Site Reactions: A mild transient swelling of 3-5 cm (1-2 inches) in diameter may occur at the injection site beginning about 3 days after injection and may persist up to 6 weeks following injection. Some cows may experience swellings up to 10 cm (4 inches) in diameter that remain permanent but are not associated with animal health problems. However, if permanent lumps are objectionable to the user, administration of the product to the particular animal should be discontinued. Use of POSILAC in cows in which injection site swellings repeatedly open and drain should be discontinued.

General Health: Use of POSILAC is associated with increased frequency of use of medication in cows for mastitis and other health problems.

Cows injected with POSILAC may experience periods of increased body temperature unrelated to illness. To minimize this effect, take appropriate measures during periods of high environmental temperature to reduce heat stress. Care should be taken to differentiate increased body temperature due to use of POSILAC from an increased body temperature that may occur due to illness.

Use of POSILAC may result in an increase in digestive disorders such as indigestion, bloat and diarrhea.

There may be an increase in the number of cows experiencing periods of "off-feed" (reduced feed intake) during use of POSILAC.



Organic milk for a pain-free pinta

The only real assurance of enjoying animal welfare-friendly butter or a pain-free pinta is to buy organic says Mark Redman of the Soil Association.

As any casual observer peering over a hedge will note, dairy farming seems to have changed relatively little over the years. At first glance the average dairy cow appears to live a contented existence. There is certainly no obvious welfare problem – cows are not crammed into tiny battery cages like the egg-laying hen, or subjected to routine mutilation such as tail-docking in pigs – but as Colin Spencer's article illustrates, the well-being of many cows on modern intensive dairy farms is being compromised. How can you as an informed and concerned consumer react? Can you ever again enjoy the taste of rich, creamy butter melting slowly over a dish of potatoes?

Well, the only real assurance of enjoying animal welfare-friendly butter or a pain-free pinta is to buy organic. The organic dairy market is still relatively young and up until about five years ago most interested consumers would have had difficulty in defining organic milk, let alone actually buying any. The situation is improving. As our Product Guide illustrates there are now a wide range of organic dairy foods available from a number of easily accessible sources. However, it is fair to say that consumers' understanding of the animal welfare benefits of organic milk production is still vague.

Superficially it might appear that the organic conversion of a dairy herd is simply a matter of abandoning an array of agro-chemical and veterinary inputs, and then pressing on as otherwise normal. In practice, organic milk production requires the adoption of a fundamentally different approach to the management of grazed land and the feeding, rearing, housing and health of the dairy cow. The welfare implications of individual management changes can be subtle, but when combined as a whole they represent a significant improvement in the quality of life for the organic dairy cow.

Before considering these welfare benefits in a little more detail, it is important to set organic milk production in a broader context.

Firstly, it does not contribute to the milk surpluses Colin Spencer describes. Milk production from the organic dairy herd is some 20-30 per cent less than equivalent conventional herds. Secondly,

manures from livestock, such as dairy cows, are essential for providing the 'nutrient currency' that underpins the biological sustainability of organic farming. No muck, no magic (so's to speak).

Feeding

To achieve and sustain the high yields pursued on many modern intensive dairy farms, cows' diets are supplemented with high energy, high protein concentrated feeds containing materials that the cow would never normally eat. This can lead to acute metabolic disorders such as ketosis and laminitis which cause severe and enduring pain.

The organic dairy cow, however, is fed in a way that is more suited to her physiology. This means ensuring that the majority (60 per cent) of the diet consists of fresh green forage, while unnatural feeding practices, such as feeding recycled animal protein (the cause of the UK's BSE epidemic), animal manures, fishmeal and sawdust are strictly prohibited. Organically-grown forage is also less likely to cause 'staggers' (magnesium deficiency) and other mineral imbalances.

Rearing

The modern dairy cow has been described as 'an exploited mother' since in the interests of maximum milk production her new calf is usually removed from her at one day old. The welfare

implications of this are potentially very disturbing and were recently highlighted in a report by Compassion in World Farming (CIWF). Organic farmers go a long way towards reducing this problem by allowing calves to suckle from their mothers as long as possible. Where this is not practical, many successful organic dairy herds use 'nurse' cows to rear the calves until weaning at about nine weeks old.

Housing

The conditions under which animals are kept on an organic farm must conform to the highest welfare standards. Permanent housing and tethering are strictly forbidden. This is not only because of the moral obligation to treat all animals as sentient beings, but also as a positive step towards ensuring the health and vitality of farm animals; a healthy and 'happy' animal is usually also a productive animal.

Organic cows and calves must therefore be housed in a way which ensures comfortable conditions, appropriate social behaviour and good hygiene. All stock must have sufficient room to stand naturally, lie down easily, turn around, groom themselves, assume all natural postures, make all natural movements and walk about freely. So-called 'loose housing' on deep, clean straw is most preferred for cows and calves rather than restrictive cubicles.



The isolation of calves into separate pens is also severely restricted on the organic farm, unlike the modern conventional dairy unit where calves are often housed in small individual pens for many weeks, isolated from their mothers and unable to play with their peers.

Animal health

An important objective on any organic livestock farm is the avoidance of reliance upon the routine and/or prophylactic use of conventional veterinary medicines. Instead, good animal health and the prevention of disease is promoted by the pursuit of high animal welfare standards: appropriate feeding and housing systems; good preventive management and stockmanship; and the use of a wide range of alternative treatments and 'complementary' medicines (eg herbal and homeopathic remedies). This approach to animal health is highly effective and most established organic dairy herds, for example, only suffer very low levels of mastitis.

Organic farmers are, however, still expected to seek conventional veterinary advice and treatment when serious animal health problems are anticipated or arise. Animal welfare is paramount and veterinary treatment must never be withheld where there is a risk of a serious health breakdown leading to a farm animal facing suffering or loss of life. Examples of appropriate treatment permitted by UKROFS include the use of wormers where individual animals are showing signs of carrying an unacceptable worm burden, and the use of vaccines where there is a known farm problem with specific diseases which cannot be controlled by any other means.

Welfare standards

Organic milk production in the UK is founded upon a number of basic principles which are embodied within the UKROFS Standards for Organic Production. In many cases these represent minimum production standards, since the majority of producers operate to Soil Association standards* which are rather more developed than the basic UKROFS standards.

A good example of this are the Soil Association's animal welfare standards which have been widely supported by animal welfare organisations because of their clear and detailed description of 'recommended', 'permitted' and 'prohibited' husbandry practices and overall enhancement of the welfare benefits of organic livestock husbandry.

* For full details of organic standards, contact the Soil Association at 86 Colston Street, Bristol BS1 5BB (0272 290551).

Where To Buy Organic Dairy Produce

Organic dairy produce is now available in many supermarkets, health and wholefood shops. Here we give a summary of the products' availability. As individual store managers have the final decision on which products to stock, it is always worthwhile approaching the store manager to demonstrate that there is a demand for organic produce.

Milk

The Farmers' Dairy Company:

- Organic semi-skimmed milk
- Organic wholemilk

available in Safeway, Gateway & Waitrose currently available in Safeway and Waitrose. Also stocked in health food shops around London

Path Hill Farm:

- Unpasteurised organic whole milk

available from Path Hill Farm Shop, Whitchurch, Nr Reading, Oxon (Tel: 0734 842392)

Rew Valley Dairies:

- Bottled organic whole milk

available from local shops on the Isle of Wight

Supermarket own label:

- Organic whole and semi-skimmed milk

available from Tesco, Sainsbury's & Asda

Yoghurt

The Farmers' Dairy Company:

- Organic natural yoghurt

available from Waitrose and healthfood shops around London.

Yeo Valley Farms:

- Organic natural and fruit yogurts

available in Asda, Tesco, Co-op, Holland & Barrett

Rachel's Dairy:

- Organic wholemilk and low fat yoghurts
- A full range of yoghurts, including Greek style and fruit yogurt, are also available in selected health and wholefood shops

available in Safeway and Somerfield stores

Rocombe Farm:

- Frozen organic plain and flavoured yoghurts

available through selected retail outlets (Tel: 0803 293996 for nearest stockist)

Supermarket own label:

- Organic natural and fruit yoghurts
- Organic natural fromage fraise

available in Sainsbury's and Tesco. sold in Safeway

Cheese

The Farmers' Dairy Company:

- Somerset farmhouse organic mature cheddar

available in Safeway, Waitrose and some whole food shops

'Penbryn':

- An organic cheese

sold through selected wholefood shops and Choice Organics delivering along the M4 corridor into London (Tel: 0531 631185)

Welsh Organic Foods:

- Tregaron organic farmhouse cheddar
- Pencarreg organic brie
- All cheeses, including Pencarreg Blue organic soft blue cheese and Tyn Grug, an organic cheddar made in traditional farmhouse rounds (widely available from July 1994) are sold nationally through specialist/organic outlets and by mail order (Tel: 0570 422772)

available in Safeway

available from Safeway and Sainsbury's

'Cornflower':

- A range of Danish organic cheeses, including full fat soft, blue-veined soft and hard cheeses

available from Safeway and Gateway and some wholefood stores.

Rachel's Dairy:

- Organic cottage cheese

available in selected health and wholefood shops

Cream

The Farmers' Dairy Company:

- Organic double cream

available in Safeway and London health food shops

Rachel's Dairy:

- Organic cream

available in selected health and wholefood shops

Butter

Rachel's Dairy:

- Organic butter and buttermilk

available in selected health and wholefood shops

Supermarket own label:

- Organic butter

available in Safeway

Ice Cream

Rocombe Farm:

- Organic ice cream in many flavours

sold in Harrods, Selfridges, Harvey Nichols, Fortnum & Masons, and Cullen's supermarkets in the London area and selected wholefood shops throughout the country (Tel: 0803 293996 for nearest stockist)

Compiled by Caroline FitzGibbons for the Soil Association

EC to allow patents on human genes

A draft Directive from the European Commission will allow human genetic material outside of human bodies to be patented, and will allow the development of genetically engineered animals with severe handicaps for use in laboratories and as farm animals. Human genes inserted into animals have already led to new potential food sources, including 'humanised' milk from cows. EC proposals will encourage faster exploitation of new animal strains, with fewer restrictions on animal welfare grounds. Farmers could only breed from patented animals if they paid secondary royalties.

■ More details on the draft Directive from Patent Concern, c/o Genetics Forum, 3rd Floor, 5-11 Worship Street, London EC2A 2BH (tel 071-638 0606) please enclose two 25p stamps.

Indian doctors refuse baby food bribes

Paediatricians in India refused to accept an estimated \$250,000 donation to pay for their annual conference because the money came from an infant formula company. The Asian Conference of Paediatrics and the Indian Academy of Paediatrics joint meeting in February applauded when told 'Not a single penny has been taken from a baby food company'.

UK health workers want tighter baby food laws

The British Paediatric Association and the Health Visitors Association have called on the government to ban all gifts and inducements to health workers by baby milk companies. Their plea comes as draft UK laws to restrict baby milk advertising are finalised for enactment this summer.

EU frozen beef criticised

Fears that stored EU surplus food may be unsafe, following the outcry over the marketing of stored frozen beef dating from 1988, have led to a

critical appraisal of intervention storage controls. The Consumers in Europe Group argues that too little is known about the shelf life of frozen meat, and that the only guidelines put a limit of 2 years on beef stored at 24°C.

EU rules put no limit on the length of time that beef may be kept in intervention, leaving the decisions to individual member states. The rules do require the oldest beef to be sold first, but no indication of age need be given to consumers.

In 1989-90 intervention stocks of beef in the UK were 13m kg. By 1992, following a fall in beef sales due to the recession and the BSE scares, stocks had risen to 164m kg.

■ EU Surplus Food: The Safety and Quality of Intervention Produce, Comments by Consumers in Europe Group (CEG, formerly CECG), available from CEG, 24 Tufton Street, London SW1P 3RB (tel 071-222 2662).

Court overrules FoE on water quality

A high court judge has found against Friends of the Earth's attempt to enforce European Commission legislation restricting the levels of pesticide in drinking water.

The legal limit for pesticides in drinking water was set 14 years ago and the standards were due to be met by 1985. Yet even by 1992 an estimated 14 million consumers in England received water containing pesticide levels above the standards. The government may now face action by the European Commission in the European Court of Justice over their continued breach of EC drinking water laws.

FoE's test case hinged on the government's acceptance of 'undertakings' from the Thames and Anglian water companies. Undertakings were introduced into legislation paving the way to water privatisation, and allow the responsible government department to accept company promises that the companies will 'secure or facilitate' compliance with drinking water standards. FoE argued that the word 'facilitate' amounts to a legal loophole for non-compliance with the standards. The judge accepted Thames Water's argument

that they needed flexibility in their water clean-up programmes and had not broken the law.

■ Details from FoE Liana Stupples, 071-490 0237.

Sowing seeds in schools

The Soil Association campaign, Sowing Seeds in School, launched in March is designed to meet the increasing demand from schools and young people for information about organic food, farming and gardening. One of the most important elements of the campaign is to set up links between schools and local farms, gardens and organic groups.

A school teachers' pack, Food, Farms and Futures - The Organic Option has been produced and a set of activity packs to complement the teachers' pack, a video featuring a star presenter, a set of posters and a slide set are planned. Detailed case studies for use at secondary and GCSE level will also be available.

■ Food, Farms and Futures - The Organic Option is available from the Soil Association bookshop, price £6.00. For more information on how you can contribute or get involved contact Eric Booth at the Soil Association.

Celebrate the organic harvest

October is Organic Harvest month when gardeners, retailers, restaurants, schools, farmers and green organisations will be celebrating all that is wonderful about naturally grown food. Planned events include a major launch event in London to coincide with the 1994 Lady Eve Memorial Lecture, a retail window display competition, and the launch of a number of new Soil Association publications.

'The Soil Association initiated Organic Harvest over a year ago and it is supported by all the main organic bodies,' says Eric Booth who is co-ordinating the event for the Soil Association. 'We are anticipating major national publicity but real success depends on local groups and individuals taking the opportunity to celebrate the organic idea.'

A booklet of ideas and suggestions to encourage local events is being

produced. This will include advice on getting publicity and will list the materials and leaflets available. Local events might include:

- ◆ giving a talk to a school
- ◆ arranging a visit to a farm
- ◆ setting up a stall for a taste test
- ◆ an organic menu in a restaurant
- ◆ organising an Organic Harvest Supper
- ◆ set up an exhibition in the local library
- ◆ conduct a survey of organic produce
- ◆ cook organic breakfasts for commuters

■ For more information contact Eric Booth at the Soil Association

Organics at the House

The Soil Association and the SAFE Alliance hosted a seminar on organic farming and the environment at the House of Commons in February. The seminar was well attended by MPs of all parties and was intended to alert them to the potential of organic farming for environmental protection and surplus control. It was chaired by John Humphries, the presenter of Radio 4's *Today Programme* and speakers included Professor David Bellamy.

Developing its increasing involvement in the agricultural policy debate, the Soil Association will shortly be publishing a policy statement on sustainable CAP reform. According to the Soil Association Policy Director, Patrick Holden: 'There is an urgent need for the integration of agricultural and environmental objectives at the heart of the CAP. We believe that this must begin with a process of review and rationalisation of all existing agri-environmental schemes, and that this process must give full consideration to the strategic significance of organic farming as a policy mechanism.'

In Germany, where organic farmers already receive significant financial assistance from the government, the area under organic production is now as high as eight per cent in some states.

■ A comprehensive set of Briefing Papers from the House of Commons seminar are available price £2.50 from the Soil Association, 86 Colston Street, Bristol BS1 5BB.

■ Details of the Soil Association's forthcoming policy statement on CAP reform can be obtained on 0272 290661.

CHECKOUT

We look at the growing market for fairly traded foods

Fair Trade Foods

Fairly traded food products have arrived. Even the supermarkets have started to put them on their shelves. Checkout looks at the products which have been blazing a trail for fairer trade.

Small producers the world over are at the mercy of global policies and a world market which cares little for their livelihoods and families. Tumbling world commodity prices can overnight make it uneconomic for farmers even to harvest their crops. A pattern of spiralling debt and poverty is repeated throughout the third world fuelled by the policies of bankers and multinational companies.

The answer for many small producers has, with the help of alternative trading organisations, been to gain more control over their own futures. By finding fair trade partners, producers are paid a fair price for their product which means more money to spend on the necessities of life – health, education and housing. And it means that people in developing countries have more influence over the international trade process.

'World markets, which set one producer against another, create uncertainty' says Pauline Tiffen of Twin Trading. 'Small producers need greater stability. That's why fair trade

is much more than securing a fair price. It's about structures of trade, control and investment and about building partnerships. Our goal has been to ensure that the farmers and producers we work in partnership with are able to change how they trade for the better. This may mean cutting out the middlemen, adding more value or making products less dependent on seasonality.'

Twin Trading is one of a number of organisations including Oxfam Trading, Traidcraft and Equal Exchange Trading that has sought to provide partnerships with third world producers by opening up markets in the UK. However, fair trade in the 90s has come a long way from the 'buying out of charity' mentality.

Lorna Young, Sales Director of Cafédirect coffee, is quick to point out: 'From the beginning Cafédirect was developed as a product that could compete on taste, quality and price alongside top brands, rather than a niche product, sold to people who wanted to be charitable.'

'We're not ramming a message down people's throats – we want

people to buy a product because they like it,' says Pauline Tiffen. But the message does get through. By providing information about a product – where it comes from and who produces it – a link develops between consumers and producers.

Fair trade products have traditionally been available through Oxfam shops, church groups and mail order such as Traidcraft. But the newer interest of supermarkets offers real opportunities to expand beyond the 'ethical consumer' market. Major retailers consider it good for their image to be associated with fair trade products and opinion polls show that consumers do feel more positively about stores that embrace the fair trade concept.

Alternative trading organisations are confident that fairly traded products will become a major force in the British marketplace over the next two or three years. A survey conducted for Christian Aid in 1993 found that 86 per cent of consumers welcomed fairly traded products, with 73 per cent prepared to pay more for them.

Although there is little disagreement about the merits of fair trade, setting standards has proved to be not so easy.

The Fairtrade Foundation was set up three years ago by Oxfam, Christian Aid, CAFOD, World Development Movement, New Consumer and Traidcraft Exchange with the aim of developing a certification scheme for products that meet 'fair trade' criteria. Agreeing standards has taken longer than first envisaged but the Fairtrade logo has now appeared on products for the first time this year and more products are planned.

Suppliers are assessed on a number of criteria including worker representation, employment conditions, fair contracts, workers health and safety and welfare. Environmental issues are also important with increasing emphasis on organic production. The Fairtrade Foundation has asked the Soil Association to help them develop assessment and certification protocols for assuring the integrity of fair trade products. While the cost of any certification is likely to be expensive, the possibility of combining organic and fair trade inspections could help to alleviate this.

Overleaf we look at some of the top selling fairly-traded foods available in the UK.



Photo: TWM

Shopping for fair trade

For over a decade small scale imports of fairly-traded foods have been imported into Britain. Now the market is beginning to expand. Here we look at some of the best selling ethically produced foods.

Coffee

Cafédirect has been the biggest marketing success of fairtrade products, now sold in over 1,000 supermarket outlets including Safeways, Sainsbury's, Tesco, Waitrose, Asda and Co-ops. At a time when unfair trading is forcing millions of families dependent on growing coffee to abandon their land, Cafédirect benefits its growers in Costa Rica, Peru, Mexico and Nicaragua by paying them up to double the market rate for

their coffee.

Set up by Equal Exchange Trading, Oxfam Trading, Traidcraft and Twin Trading, Cafédirect buys direct from farmers and cuts out people in the middle, so providing a fairer return. Producers get 43p from every 8oz pack of coffee sold which compares favourably with conventionally traded coffee, whose growers typically get only 13p from a £1.65 jar of instant coffee. And there is nothing 'worthy' about Cafédirect — it's a quality prod-

uct made of 100 per cent arabica beans which are specially blended, roasted and ground for the UK market.

As a result of the success of Cafédirect, growers have tangible benefits. In Costa Rica a scholarship fund is in operation, a woman's activity programme has been set up to develop new skills and there has been investment in new products to reduce the dependency on coffee. In Mexico a meal-a-day programme for children and the provision of health-care at village level have been funded. In Peru the farmers grow Cafédirect coffee instead of coca, the plant from which cocaine is derived.

Chocolate

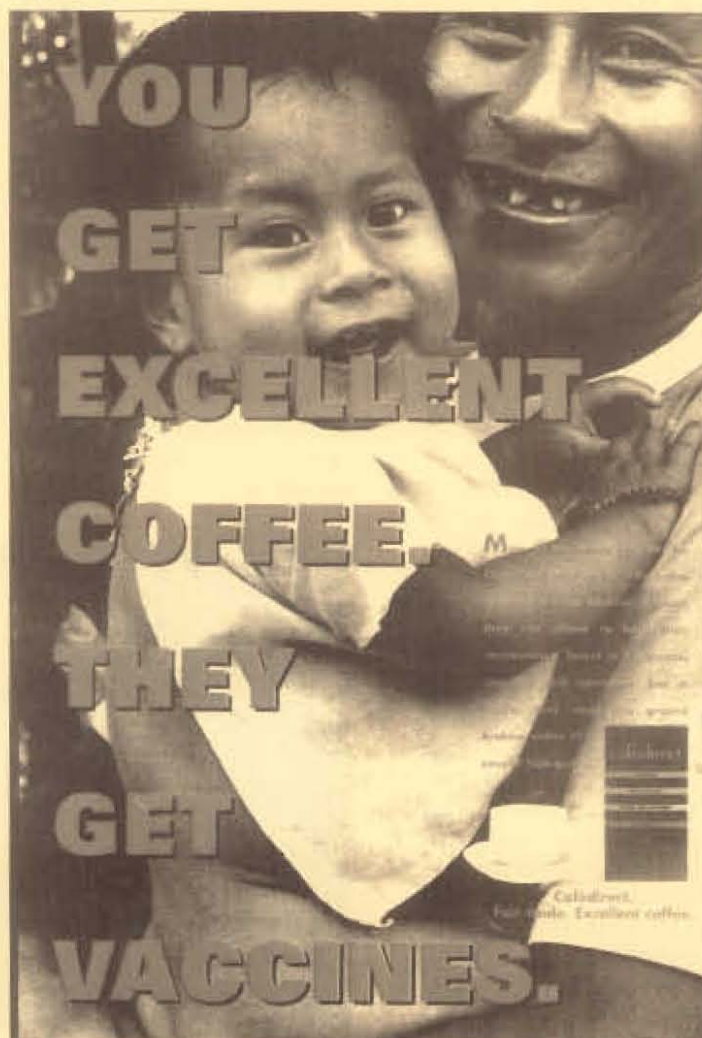
There are a number of fair trade chocolate products available in the UK.

Mascao chocolate is made in Switzerland from fairtraded Bolivian cocoa and muscovado sugar from the island of Negros in the Philippines. Links have been established with El Ceibo — the central organisation of peasant farmers' cooperatives in the Alto Beni area, north-east of La Paz in Bolivia. With technical assistance and advice El Ceibo have managed to break the monopoly of local transportation which was keeping local food prices artificially high. Now their own transport takes the cocoa to La Paz and returns with food to supply local shops.

Mascao chocolate is available in four different types: Mascao dark (min 65% cocoa solids), milk, nut and praline (min 35% cocoa solids) as well as cocoa powder.

Available through Oxfam Trading, Traidcraft and Equal Exchange Trading.

Green and Black's Maya Gold Chocolate was the first product to carry the Fairtrade Foundation's seal





of approval. The chocolate is made with organic ingredients including 70% cocoa solids grown to organic standards by the Maya Indians of Belize in Central America. The Mayan people's livelihoods were threatened in the 1980s when the price of cocoa crashed by over 50 per cent to 22 pence a pound. Farmers found it was simply no longer worth their investment of time, labour and money, even to harvest the crop.

Green and Black's now pay farmers 48p a pound for cocoa beans – about twice the world market price – and have guaranteed to buy their total production for three years. Growers now have security of income and an incentive to remain on their land, protecting it from loggers or large companies wishing to buy up rain forest land for intensive farming. Biodiversity and wildlife are also encouraged by paying a premium to growers who plant extra indigenous trees.

Green and Black's is available in supermarkets, health food stores and Oxfam shops.

Nuts

In the Peruvian rainforests, Brazil nuts are collected by forest gatherers. Harvesting is seasonal and hard work, sometimes taking thirteen days just to transport the nuts to town. Here local buyers traditionally dictated prices and played collectors off against each other to keep prices down. Now communities of forest gatherers are working with Candela – a non-profit marketing organisation promoting fair trade. Forest gatherers receive a fairer price for their work, and are able to protect their non-cultivated environment as well as improve

conditions and their standard of living.

Twin Trading is also working with Candela to import pecan nuts from the semi-desert coastal region of Peru. Again by cutting out the middlemen small holders and their families receive a fairer return.

Peruvian Brazil and pecan nuts are available through Oxfam shops, Traidcraft and Equal Exchange. Pecan nut butter is available from Equal Exchange Trading.

Almonds are being imported from the Hebron area of the West Bank in Palestine. Small farmers have faced political and economic difficulties which have denied them access to international markets. Now, through alternative trading organisations they are able to get better prices while developing exporting expertise.

Almonds are available through Oxfam and Traidcraft; Almond butter through Equal Exchange wholesalers.

Barrita sesame snack bar

In Nicaragua rural unemployment has risen to over 50 percent. Barrita sesame snack bars are the successful result of a Belgian project in Nicaragua which has given financial, marketing and technical support to former unemployed banana workers, who now grow sesame. The bars also contain raw cane sugar from Nicaragua.

Available through Oxfam shops, Traidcraft and Equal Exchange

Honey

Mexican honey

Twin Trading are importing certified organic honey from the highlands of Guerrero, one of the poorest Mexican states. Here 200 beekeepers belong to a farmers' union which jointly markets its members' produce.

Traditionally beekeepers sell their honey to local traders for cash but joining the union gives the farmers more control over the marketing of their product.

The organic honey is available under the BHC label in selected supermarkets. Mexican Light Tropical Honey plus an Orange Blossom Honey is sold under the Equal Exchange label in wholefood stores around the country.

Organic forest honey

Soil Association approved organic is also imported from producer co-operatives in Zambia and Tanzania by Tropical Forest Products. These dark African honeys are collected from wild hives by forest dwellers.

Organic forest honey is available through Oxfam, Equal Exchange and in Safeways under the Hawkswood label.

Guava and Mango Jams

Twin Trading are working with co-operatives which produce fresh fruit and vegetables in Burkino Faso, one of the poorest countries in Africa, to help establish a European market for exotic jam among health and specialist food markets. Twin Trading are helping the co-operative to add value to its products by producing guava and mango jams. Processing offers further employment opportunities for men and women and the potential for a less seasonal economic cycle and the reduction of overhead costs.

The jams are available through Oxfam, Traidcraft and shortly through Equal Exchange's wholefood network.

Finding fair trade foods

A Traidcraft catalogue can be ordered by phoning 091-491 1001.

All the Equal Exchange goods can be ordered by healthfood stores from Equal Exchange distributors listed below. Equal Exchange Trading regularly add new products to their list. For up to date details contact: Equal Exchange Trading on 031-667 0905.

Equal Exchange Distributors:

Arjuna, Cambridge (0223 64845)
Community Foods, London (081 450 9411)
Daily Bread, Northampton (0604 21531)
Essential Trading, Bristol (0272 583550)
Galloway Wholefoods, Lockerbie (also supply N Ireland) (0576 204322)
Green City Wholefoods, Glasgow (041 554 7633)
Highland Wholefoods, Inverness (0463 712393)
Infinity Foods, Brighton (0273 424060)
Leicester Wholefoods, Leicester (0533 512525)
Rainbow Wholefoods, Norwich (0603 630484)
Suma Wholefoods, Halifax (0422 345513)
Wholesome Trucking, London (071 733 2614)



■ Researched and written by Sue Dibb.

Junk with added vitamins

Chalk in your bread? Scrap iron in your breakfast cereals? Now added minerals and vitamins are becoming commonplace even in products that have little else to recommend them. Checkout investigates.

Putting iodine in salt to help prevent goitre has few opponents. Adding vitamins A and D to margarine so it replaces the nutrients given by butter is also widely accepted – and is required by law – although some might argue that it legitimates the substitution of good quality food with bad. And adding chalk to bread, along with iron and vitamins B1 and B3, is also written into law – although sometimes questioned as to its justification.

Adding vitamins and minerals to breakfast cereals (including 'elemental iron' from, it is claimed, the scrap iron industry) is entirely voluntary. Not all cereals are fortified, and even those that are can be very different – Kellogg's Special K has up to 200% of the levels found in their Cornflakes.

Now manufacturers are adding vitamins to soft drinks, canned pasta, instant desserts, corn snacks, chewing gum and ice lollies. The products, many of them aimed at children, seek a sales advantage by offering an image of improved health compared

with their non-fortified counterparts. Health workers fear that parents may offer less resistance to the purchase of 'enriched' snacks and drinks, encouraging fatty, sweet and salty foods.

Furthermore, there are potential problems of adding high levels of selected nutrients to the diet, while leaving other nutrients at low levels. For example a daily diet which included a lot of fortified products (see 'Distorted Diets') would supply very high levels of sugar and several essential nutrients while leaving dietary fibre and other essential nutrients at low levels. Little research has been undertaken on the implications of such distortions in diet, sustained over a period of time, perhaps during a child's early growth and development.

And in addition, vitamins may be added without any quantity being declared: vitamin C, for example, is often added to help prevent brightly coloured food from fading during a long shelf life. We found undeclared quantities of vitamin C in products ranging from Wall's sausages to burger buns. We also found vitamins B2 (riboflavin) and pro-vitamin A (beta carotene) used as colourings in many foods, from instant soups to breakfast cereals and diet Tango.

Although we welcome the use of vitamins instead of other, less nutritious forms of anti-oxidant additives, we are concerned that the overall nutrition may become imbalanced through such an emphasis on a limited range of nutrients.

Adding vitamin pills to a poor diet will not transform the diet into a

healthy one. Vitamins are not the only component which needs to be addressed: dietary fibre and other nutrients are also linked to health. As the World Health Organisation pointed out in 1991, the strong links between a lower risk of diseases such as cancer and cardiovascular disease and a diet rich in fruit and vegetables cannot be assumed to be due entirely to the vitamins the diet contains.

The WHO stressed the protective effects of a pattern of eating which included high levels of fruit and vegetables and which was also high in dietary fibre and complex carbohydrates, and low in saturated fats and sugars. Adding vitamins to a bad diet may only serve to perpetuate unhealthy eating patterns.

High sugar, low fibre & distorted nutrients

Fortification can lead to excessive intakes of some nutrients while others remain at low levels. A child consuming the following fortified foods in one day would give the vitamin levels shown, along with all the calories and excessive sugar, while leaving other essential nutrients – and dietary fibre – at very low levels.

| | Amount | Proportion of recommended daily needs* for 10 year old child |
|--|---------------------|--|
| 3-4oz (100g) Kellogg's Start (dry) | | |
| 2 small cartons Ribena | | |
| 1 can HP Mutant Turtles pasta | | |
| Half pint Birds Instant Whip (+ water) | Calories 1244 Kcals | 67% |
| 1-2oz (50g) Supa Krunchie corn snacks | Sugar 175g | 350% |
| 1 Mr Men ice lolly | Fibre 4.3g | 29% |
| 3 pieces Nale chewing gum | Vitamin A 1417µg | 283% |
| | Vitamin B1 2730µg | 390% |
| | Vitamin B2 3180µg | 318% |
| | Vitamin B3 41.6mg | 347% |
| | Vitamin B6 3300µg | 330% |
| | Vitamin B12 3.37µg | 421% |
| | Vitamin C 310mg | 1550% |
| | Folic acid 327µg | 218% |
| | Iron 32.0mg | 367% |
| | Zinc 20.5mg | 269% |
| | Magnesium 85.5mg | 43% |
| | Calcium 148mg | 27% |

* the Dept of Health's Reference Nutrient Intakes, sufficient for 97% of the population of that age.

Pills or food?

New research from an 8-year study of 30,000 Finns and Americans found that beta-carotene and vitamin E pills did not improve the incidence of cancer and heart disease, apart from vitamin E appearing to improve prostate cancer levels. The report found those taking beta carotene had 18% worse lung cancer rates.

As our feature on pages 19-21 shows, there are several linked components in food in addition to the anti-oxidant vitamins which may contribute to the generally improved rates of cancer and heart disease found among people eating diets rich in fruit and vegetables.

Better controls down under

The Australian National Food Authority is proposing tighter food fortification rules following a 12-year review of present standards.

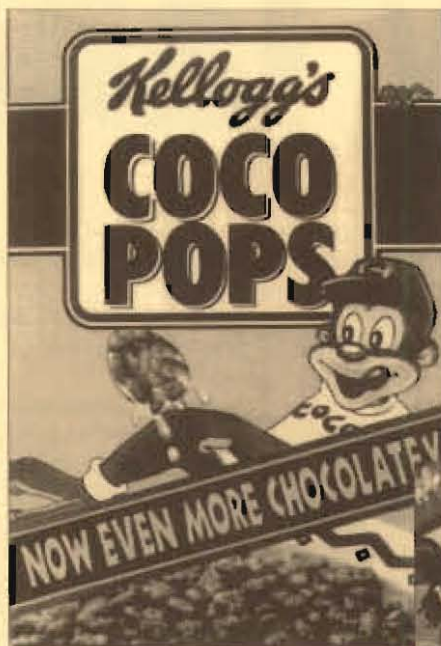
Their proposals adopt the general principle that vitamin and mineral additions to food should only act to restore the nutrients lost during processing. The levels would not be allowed to exceed those that would be found in the 'original' food (which would need to be defined).

In addition, two exceptions to this principle are suggested: first where the food commonly substitutes for another food (such as margarine being used as a substitute for butter) then the substitute can be fortified to make it nutritionally equivalent to the 'original' food.

Secondly, nutrients may be added at higher levels where there is an identified public health need (such as iodine in salt, and perhaps even folic acid in foods for women likely to become pregnant).

The Food Commission would like to see similar restrictions on the fortification of food enacted in the UK – and we call on the Food Advisory Committee to review the whole issue of fortified foods.

In addition, and subject to frequent review, the Food Commission would like to encourage manufacturers in their use of certain anti-oxidant vitamins in place of the anti-oxidant additives which have been used previously in the food industry, such as the notorious BHA and BHT (E320 and E321).



■ Written and researched by Tim Lobstein

Loopy labels

Our reliable readers and sharp-eyed shoppers have sent us another batch of barmy brands



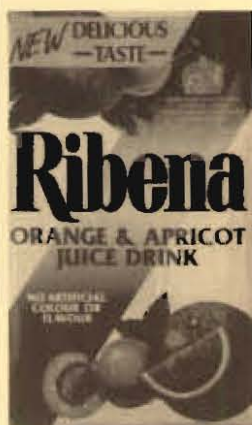
A basty shopper in Marks and Sparks might fail to spot the differences between these two loaves of St Michael's speciality bread. One sells for 75p and one 'stoneground wholemeal' for 79p. Both boast of their seeds and both have a healthy-looking dark texture. The one at 79p says it weighs 400 grams and the other looks a little bit smaller and says nothing about its weight.

No statement of weight? Isn't that illegal? The law says that if loaves are over 300 grams then they have to be either 400g or multiples (800g, 1200g etc). If under 300g they can be whatever they like, and not declare the weight.

So, dear reader, we weighed the two loaves. In their wrappers, we found the 400g loaf to be 420g, while

the smaller loaf was a miserly 265g. Much less bread for your money. Furthermore the bigger loaf boasts wholemeal flour and butter among its ingredients, whereas the smaller contains brown and white flour, hydrogenated (artificially hardened) fat, emulsifiers and flour improver.

We also found an estimated 10% extra water in the cheaper, smaller loaf, further reducing its nutritional value for money. We hope to look at the amount of water being added to different types of bread in a future issue of the *Food Magazine*.



Little to tell between these two packs, except of course the flavouring juices used – strawberry for one and orange and apricot for the other. Or so it might appear.

After all they both boast that they are free from artificial this and that, don't they...? Well, no, they don't. Not quite. One happily says 'no artificial colour, flavour or sweetener' but the other – the orange and apricot – only says 'no artificial colour or flavour'.

And the real difference is to be found in tiny print on the side. The orange and apricot drink still has most of the sugar (75%) of the strawberry version, but also has two artificial sweeteners added: aspartame and

acesulfame K. The high level of chemicalised sweetness presumably explains the 'NEW DELICIOUS TASTE' being promoted on the front of the pack!

Artificial sweeteners are banned from foods for babies and young children. We feel that Ribena's parent company, SmithKline Beecham, should make it much clearer on the front of the pack that this product is not suitable for young children. We also believe that it is wrong to encourage high levels of sweetness in children's diets, and that this product

will serve to make other, regular juices taste bland by comparison.

We hope to look at the increasing use of artificial sweeteners in regular fruit drinks in a

future issue of the *Food Magazine*.

Min 50% meat, says the declaration on Birds Eye Chicken Breast in Gravy. Yet the ingredients list shows water the largest single ingredient, with chicken second. This is surely illogical, if over half the product is chicken?

The answer may lie in Britain's appalling meat labelling definitions, which allow the word 'meat' to apply to meat with added water. By massaging cuts of meat in a solution of salty water (polyphosphate salts are the most effective) the meat will absorb extra water. Up to 5% can be added without having to declare it, so a product with less than half chicken (46%, say) can actually declare 'minimum 50% meat' on the label.

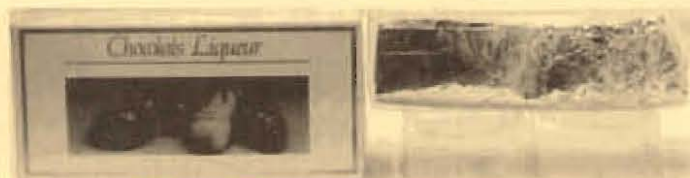
We think it is time full quantitative labelling on products like these, requiring manufacturers to show exactly how much of each ingredient they are selling us.

Once upon a time the British had regulations which required at least 60% meat in products labelled 'meat with gravy', and that otherwise it would have to say 'gravy with meat'. But that was before the government hit on the idea that 'deregulation boosts business'.

More air than chocolates.

Of course, chocolates may be high in fatty calories, but that hardly justifies this blatant attempt to deceive.

Some might say it is half full, and others that it is half empty, but either way the single tray of sweets supported by a false base is clearly intended to mislead purchasers. Lesson: look at the weight before you buy your loved one a load of low-calorie packaging.



Canthaxanthin 7 years of doing nothing

It is over seven years since scientific advisors told the government that the colouring agent canthaxanthin was a possible health hazard and should be banned.

Flamings would be white were it not for the orange-pink colouring of the shellfish they eat. The colour comes from a chemical called canthaxanthin – additive E161(g) – and it has a remarkable ability to stain the body tissue of anyone, or anything, that eats it. For several years it was marketed in capsules as an instant sun-tan pill. It is also widely used in salmon and trout feed to colour the flesh of the fish, and in the feed given to hens to ensure the yolks of their eggs look a nice deep yellow.

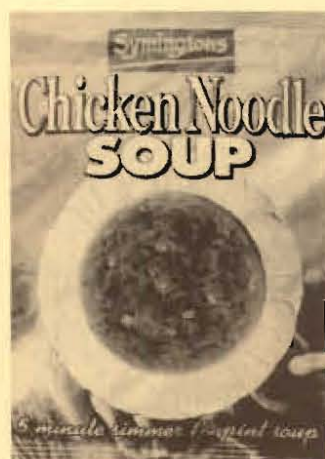
Then researchers found the

chemical might cause yellow patches on the retina of the eye – and government's scientists in the form of the Committee on Toxicity in Food declared that it would be better if the dye was not added to food for humans.

The CoT reported their findings to the government-appointed Food Advisory Committee, whose job is to advise the minister on what regulations should be made. They advised an immediate ban on the suspect chemical in human food, and recommended that fish being fed canthaxanthin should be labelled accordingly.

That was in 1987. Public concern about additives was leading to calls that the government should move away from a complacent 'innocent until proved guilty' approach, which allowed suspect additives to continue to be used until proved a hazard, and instead to give humans rather than industry the benefit of the doubt and to require additives to prove their safety before they could be used.

Responding to those calls, the government did precisely nothing. They circulated the FAC proposals for consultation. Two years later the government was again prompted by



Seven years since a ban was recommended on the colouring in these packets

the FAC and individual MPs in parliament to make a statement.

This time the government responded. The then minister, David Maclean, issued a press release saying he had looked at the FAC proposals and that 'the prohibition on canthaxanthin is accepted.' He promised to act 'within weeks'. He also said that he would urge the EC to ban it, too. That was November 1989.

Two hundred and thirty weeks later (and a change of food minister, too) you can still buy food with added canthaxanthin – quite apart from unlabelled fish and eggs. We found packets of blancmange ('best before the end of July 1995') and packets of soup (dated September 1994) available in our local KwikSave. We also noticed it in some French-bought, German-made Smarties, but not in UK Smarties.

MAFF, the department responsible for introducing the necessary legislation, told us that they had not thought it was worth making the necessary regulations as new colouring



proposals were being discussed at EC level. They felt they should wait for the EC to ratify its Colourings Directive before doing anything.

The draft EC (now EU) Directive does indeed propose to ban canthaxanthin from food (but not animal feed) with the exception of a delicacy known as Saucisses de Strasbourg. The draft Directive was given a second reading by the European Parliament (which, ironically, meets in Strasbourg) this March, and referred back with amendments to the Commission. Several of these amendments have been accepted and a further draft is now to be circulated for agreement.

The Directive is scheduled for final approval before the end of the year. The EU then allows some 18 months for national governments to introduce the required legislation under their own laws. As the blancmange makers Brown & Polson probably realised, it is unlikely that canthaxanthin will be banned in the UK before the end of 1995.

Erythrosine also to go

Another colouring, the red dye erythrosine (E127) is also the target of an EU ban. The Colourings Directive proposes to restrict use of the dye – a suspected carcinogen and mutagen to cocktail and candied cherries only.

A quick look in our local supermarkets showed E127 to be used in several children's foods, such as:

- Dolly Mixture (Trebear Bassett)
- Soft Fruit Boiled Sweets (Payne's)
- St Michael Lollipop (Marks & Spencers)
- Jelly Beans (Haribo's)

Liquorice Allsorts and Fruit Pastilles (Ginni's)

The directive has been through many drafts over at least five years, but in all of them erythrosine, and canthaxanthin too, were to be restricted.

We believe that manufacturers are acting cynically and recklessly by continuing to use chemicals due to be banned from food on health grounds right up to the last moment that it is legal to do so.

We also feel the government has acted negligently by not giving higher priority to consumer interests, using the hollow pretext that they are awaiting European proposals.



Five years since a ban on the colourings in these sweets was proposed

The Nursery Food Book

A lively and practical book exploring all issues relating to food, nutrition, hygiene and multicultural needs, with tips, recipes and sample menus along with cooking, gardening and educational activities involving food. Excellent handbook for nursery nurses and anyone caring for young children. £9.99 including p&p.

Food Adulteration

A penetrating expose of the shocking state of food quality in Britain, revealing the facts on additives, pesticides, food poisoning and irradiation. £5.95 inc p&p.

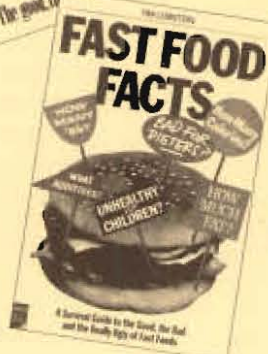
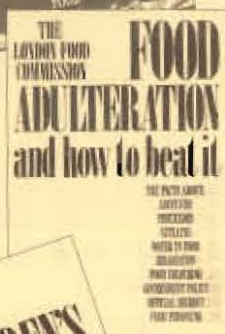
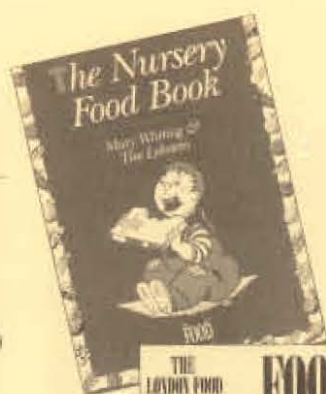
Children's Food

Teething rusks sweeter than a doughnut? Fish fingers less than half fish? Beef burgers made with pork? A book packed with trade secrets and sound advice. £4.75 inc p&p.

Fast Food Facts

Full of useful tables of nutrients and additives, along with a unique look into the secretive world of fast foods. £5.95 inc p&p.

BACK ISSUES OF THE FOOD MAGAZINE now at reduced price only £2 inc p&p. Send for comprehensive index of the news and features for all back issues. Cheques payable to 'The Food Commission'. Send your order to Publications, The Food Commission, 3rd Floor, 5-11 Worship Street, London EC2A 2BH.



Additives - Your Complete Survival Guide

Still the best reference book with comprehensive tables and summaries of the evidence on the safety of each additive. Special price only £3.50 inc p&p.

Food Irradiation

Good food doesn't need irradiating yet the UK has now legalised the process. £6.50 inc p&p.

Food for Health or Wealth

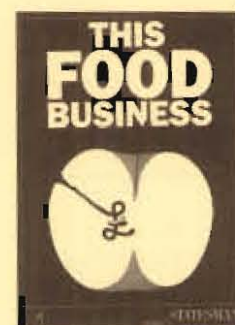
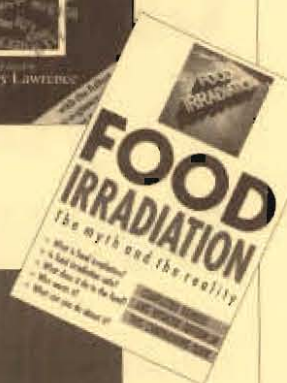
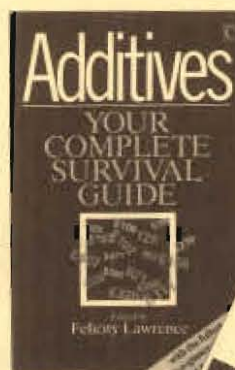
The acclaimed report from the Socialist Health Association. £4.50 inc p&p.

Additives chart

published by Channel 4 £2 inc p&p.

This Food Business

usually £2 but yours **free** with every order.



SUBSCRIBE to the Food Magazine and support the work of the Food Commission. Full details from the Publications dept, address below.

order form

TO: The Food Commission, 3rd Floor, 5-11 Worship Street, London EC2A 2BH.

PLEASE SEND ME

I enclose £

Cheques payable to 'The Food Commission'. Overseas purchasers should send payment in £ sterling, and add £1.00 per book for airmail delivery.

Name

Address:

☐ please also send me my free copy of This Food Business

☐ please send me subscription details for The Food Magazine

☐ please send me details for donating to the registered charity The Food Commission Research Charity

An ACE diet

Antioxidant vitamins and minerals are now thought to protect against cancer, coronary heart disease and maybe many other degenerative diseases. Janette Marshall explains how they work.

The initial suggestion of the value of antioxidant nutrients goes back about thirty years when scientists first made a link between low levels of betacarotene and increased risk of cancer. Since then there has been a huge amount of scientific research into the effects of antioxidants on different types of cancer, coronary heart disease and other disease, and all of it has come to similar conclusions: that people with a high fruit and vegetable intake halve their risk of cancer and heart disease compared with those who eat little fruit and vegetables.

The World Health Organisation recommends that we eat 400g (14oz) of fruit and vegetables a day – that's twice as much as the current UK average. A lot of the evidence for this advice comes from studies of people living in Mediterranean countries who follow their traditional diet and lifestyle and enjoy longer – and healthier – lives than north-

ern Europeans and Americans.

Until recently it was thought they gained their protection solely from eating less fat (especially saturated animal fat), which meant they had lower blood cholesterol levels. However, it has been discovered that it is not quite that simple.

What probably makes the real difference is the amount of fruit and vegetables eaten and the type of fat, which is usually extra-virgin olive oil, containing vitamin E. So, even if a high-fat diet is eaten, the antioxidant nutrients in fruit, vegetables and olive oil are giving protection. So how do they work?

The main antioxidant nutrients are beta carotene, vitamins C and E and the minerals selenium, zinc, manganese and copper. There are also other substances in food and produced within the body that act as antioxidants and they may prove to be just as important. Antioxidant nutrients work together to destroy free radicals.

What are free radicals?

Free radicals are highly reactive molecules that contain one or more 'free' electrons (electrons are usually paired). These free electrons grab electrons from another molecule, forming free-radical compounds which are potentially dangerous to the body. The process also disturbs the chemical balance by making another single unit and setting up a chain reaction leading to the production of more free radicals.

The chemistry of fighting free radicals

The body has evolved a complex system to protect itself against free-radical (or oxidative) damage. Enzymes deactivate free radicals and antioxidants stabilize them. The enzyme superoxide dismutase (SOD for short) removes the superoxide radical, generated in profusion by normal cell functions and very dangerous because in the presence of stray copper and iron it is capable of turning into hydroxyl radical, the most damaging of all free radicals. In removing the superoxide radical SOD makes hydrogen peroxide and oxygen; the toxic hydrogen peroxide is then removed by two other enzymes called catalase and glutathione peroxidase.

Some antioxidants, such as uric acid, are produced in the body, but most of them are nutrients (vitamins and minerals) that cannot be made in the body and must be eaten.

Glutathione is made in the body from three amino acids (glutamate, cysteine and glycine) found in protein foods. In general, dairy products, bread and cereals are low in glutathione. Fresh meat is high and fruits and vegetables contain moderate amounts. Food processing (except freezing) decreases glutathione content. Researchers who have compiled data on the glutathione content of common foods think that the difference between the content of free and processed (mainly canned) fruit and vegetables is significant enough to suggest that people who do not eat much fresh food might be deficient in this antioxidant nutrient which is an important component of an antioxidant enzyme.

In short, the system that defends the body against free radicals depends on a good supply of antioxidant vitamins and minerals.

There's no escape from free radicals because they are a by-product of breathing oxygen and burning food to produce energy to live and work. Free radicals are also produced by cigarette smoke, car exhaust fumes and other pollutants, radiation from the sun, some drugs and pesticides.

If the level of free radicals is in balance with antioxidant nutrients needed to control them then there is no problem, but if antioxidant levels are too low (ie you are not eating enough of the right foods) then free radicals attack the body. They are thought to initiate heart disease by changing cholesterol to allow it to furr up arteries, and to cause cancers by destroying or altering DNA (genetic material) in our cells.

Free radicals are not always harmful – for example, germ-killing cells called phagocytes use free radicals to kill bacteria. However, in many other instances, free radicals are more damaging than helpful. There are at least 50 diseases in which free radicals are possibly indicated.

How antioxidants help prevent heart disease

Heart disease is still the main killer in Britain, with 175,000 people dying of it each year with many others are disabled by it. The evidence that antioxidants (along with a low-fat diet, adequate exercise and not smoking) can prevent heart disease is accumulating, particularly through the link with fruit and vegetables. In Britain there are more incidences of heart disease in areas where consumption of these foods is lowest.

The role of antioxidants explains many things previously left a mystery by the dietary fat theory. To cite a few:

- ◆ very low coronary heart disease (CHD) in countries like France, despite their comparatively high saturated fat intake.
- ◆ The different incidence of CHD between the social classes.
- ◆ A possible explanation of the greater risk of CHD in men than women
- ◆ And partially why there is a greater risk in women after the menopause.

As scientists re-examined the evidence, some missing parts of the jigsaw began to fall into place to reveal the importance of antioxidants.

1 Damage to artery walls usually has to happen before cholesterol can build up, narrow the arteries and so increase the risk of a heart attack. Antioxidants protect against this initial damage.

2 There are two types of cholesterol: the good type, HDL (high density lipoprotein) and the bad, LDL (low density lipoprotein). For LDL to accumulate and silt up the arteries it has first to be changed through a process called oxidation.

3 This modification of LDL is thought to occur locally ie at the site of damage to an artery wall. Oxidized LDL seems to promote the build up of fatty

An ACE diet

plaque in the walls of the arteries. Exactly what triggers the damage to the artery wall in the first place and the oxidation of the LDL remains to be discovered. However, antioxidant nutrients can prevent oxidation of LDL.

How antioxidants help prevent cancer

In Britain, 160,000 people die each year from cancer – the commonest cause of death after heart disease. About one in three cases of cancer is linked to food. Low levels of beta carotene were associated with increased risk of cancer more than ten years ago. At the launch of the worlds largest prospective survey of diet and cancer (the EPIC trial) in 1992, the scientists involved estimated that a huge number of deaths from cancer – about 40,000 a year in England and Wales – could be prevented by a change in diet. Increasing fruit and vegetable intake is known to decrease the risk of many types of cancer including colon, prostate, bladder, rectum, mouth, stomach, cervix and oesophagus.

■ **The Ultimate ACE Diet** by Janette Marshall is published by Vermilion price £7.99. Available in bookshops or by credit card (p&p free) by phoning 0279 427203.



Eating at least five portions of fruit and vegetables a day is the 'Five a Day' message

Five a day

Countries such as the USA and Australia have translated the World Health Organisation's recommendations on increasing fruit and vegetable consumption into successful public health campaigns, encouraging everyone to eat at least five portions of vegetables and fruit a day.

It would be good to see the UK government backing such a positive health campaign. Meanwhile a number of organisations are trying to get the message across:

■ Channel 4's Food File has launched the Take Five Fruit and Vegetable Challenge in its current series. For a free booklet on how you can follow the Take Five Challenge send a self-addressed envelope with a 19p stamp to TAKE FIVE, PO Box 4000, London W3 6XJ or Cardiff CF5 2XT. And watch Food File on 18 May (8.30pm) for the results of the Challenge.

■ The Health Education Authority launched its 'Enjoy Fruit and Veg Campaign' on 1 May. For a campaign pack and more details contact: Karen Ruskin, Health Education Authority, Hamilton House, Mabledon Place, London WC1H 9TX.

■ The World Cancer Research Fund have produced an information booklet, *Why Eat Fruits and Vegetables?* Send a large SAE to: World Cancer Research Fund, 11-12 Buckingham Gate, London SW1E 6LB.

■ The Fresh Fruit and Vegetable Information Bureau have a colourful booklet, *Fresh is Beautiful*. Send a large SAE to: Fresh is Beautiful, 126-128 Cromwell Road, London SW7 4ET.

Good sources of antioxidant nutrients

Vitamins:

- | | |
|--------------|---|
| Betacarotene | Yellow and orange fruits & vegetables, particularly carrots, broccoli, tomatoes, melons, mangoes, apricots, peaches, pumpkin, watercress, prunes. |
| Vitamin C | Fruit and vegetables, particularly citrus fruit, blackcurrants, strawberries, kiwifruits, gooseberries, guava, green leafy vegetables, peppers, potatoes, swede, parsnips. |
| Vitamin E | Vegetable oils, particularly sunflower oils and products made from them, almonds, brazils, hazelnuts, wholegrain breakfast cereal, wholemeal bread, dark green vegetables, wheatgerm. Fruit and vegetables are not very good sources, but the best are apples, bananas, blackcurrants, damsons, asparagus, broccoli, carrots, peas, spinach, parsley, purslane, tomatoes, lettuce, watercress. A little is found in scallops and clams and some oily fish eg mackerel and salmon. |
| Vitamin A | Liver, kidney, dairy products, oily fish, fortified margarine. |

Minerals

- | | |
|-----------|---|
| Zinc | Meat, milk and milk products, bread, cereal, cereal products |
| Manganese | Wholegrain cereals, nuts, tea |
| Selenium | Cereals, especially wholegrain bread, fish, liver, pork, cheese, eggs, walnuts, brazil nuts |
| Copper | Wholegrain cereals, meat, vegetables |

Nutrients in food with antioxidant properties

Antioxidant vitamins

Beta carotene

This is the pigment that gives yellow, orange and red fruit and vegetables their colour. It is also found in dark green leafy vegetables. It is a vitamin A precursor or pro-vitamin A, which means that it can be turned into vitamin A in the body as well as fulfilling its antioxidant role as beta carotene. As an antioxidant, beta carotene works inside the cells of the body, where it can trap and destroy free radicals and singlet oxygen (an active form of oxygen that can lead to free-radical formation and may also be generated by free-radical reactions). This prevents damage to genetic material which might initiate cancer. Other types of carotenoid may also act as antioxidants, and their special areas of activity are being studied.

Vitamin C

Vitamin C is found in fruit and vegetables, mainly citrus fruits and green leafy vegetables, though potatoes are a rich source in the British diet because we eat such a lot of them. It is a water-soluble vitamin and is the most potent antioxidant working in the watery parts of cells and in the fluid in which all cells are bathed.

Vitamin C scavenges free radicals. It is also thought to help regenerate vitamin E after the latter has neutralized free radicals. This allows vitamin E to return to its original state and fight free radicals for longer.

Vitamin E

Vitamin E is found in vegetable oils, nuts, wholemeal bread and cereals, eggs, margarine, sunflower spread, dairy produce and some fruit and green leafy vegetables. It is a fat-soluble vitamin and is the main antioxidant in the fatty parts of cells where it prevents oxidation of polyunsaturates in the cell walls and interacts with particles of harmful cholesterol. If there is enough vitamin E in your body free radicals may be prevented from oxidizing cholesterol and causing damage to arterial walls. Vitamin E inhibits lipid (dietary fat) peroxidation by combining with the oxygen free radical, preventing it from combining with the next fatty acid in the chain.

Vitamin E protects polyunsaturated fats (in vegetable oils, margarines and spreads) against oxidation (the process in which free radicals attack them and turn them into harmful substances) and also seems to protect beta carotene from being oxidized. To be most effective, vitamin E needs vitamin C.

Vitamin A

Vitamin A is not, strictly speaking, an antioxidant (except in the form of beta carotene) but it does have some antioxidant characteristics. For example, it can scavenge singlet oxygen which is involved in free-radical damage. It also enhances the body's immune system, giving protection against disease, and helps

control cell differentiation (cancer is a loss of control over cell differentiation).

Antioxidant minerals

Copper

Copper is a component of the antioxidant enzyme, superoxide dismutase. It is also needed to make caeruloplasmin, a substance that converts ferrous iron into ferric iron. By doing this it stops the ferrous iron being available to produce harmful free radicals.

Manganese

Manganese is also a component of superoxide dismutase that works in a specific part of the cell called the mitochondria, where all the energy reactions take place.

Selenium

Selenium is a component of the enzyme glutathione peroxidase which removes toxic by-products made when free radicals are destroyed by antioxidants.

Zinc

Zinc is also a component of superoxide dismutase and works inside cells breaking down free radicals.

Other antioxidants

Apart from foods rich in ACE nutrients there are also other antioxidant substances, both in food and produced within the body that can help to prevent free radical damage.

Antioxidant enzymes

The body makes these from minerals such as selenium, copper, manganese and zinc and uses them to block chemically induced cancers and inactivate free radicals. Consequently, a diet low in minerals can lower your defences.

Caffeic and ferric acids

These are substances in plants that can block chemical changes that lead to cancer. They work in a similar way to the antioxidant vitamins C and E.

Chemopreventors

These are chemicals found in vegetables that stimulate production of enzymes that can detoxify carcinogens (cancer-causing agents).

Fibre

Fibre protects against large bowel cancer and may be more useful in preventing this disease than antioxidants. In a study of more than 7,000 male health professionals, those who had the highest-fibre diet had the lowest pre-cancerous growths in the colon and rectum. Antioxidant intake didn't alter their risk status. Fibre from starchy food ferments with gut bacteria to produce butyrate, a substance that slows down cell proliferation and therefore protects against cancer. Starchy fibre also leads to faster transit time and

dilution of wastes in the gut. A high-fibre diet might also counteract the harmful effects of oestrogens in hormone-reliant cancers.

Flavonoids

Flavonoids are found in tea (especially green tea), onions and wine. They may act as antioxidants.

Folate

Folate (folic acid) is a member of the B vitamin family and is found in dark green leafy vegetables and cereals. It is thought to protect cells in a pre-cancerous condition by producing substances that can repair free-radical damage.

Garlic and onions

These contain allicin, a sulphur compound that induces production of substances that stimulate antioxidant mechanisms. In trials garlic has had beneficial effects on blood fats and blood pressure and has made blood less likely to coagulate (and cause a heart attack). Huge amounts of fresh garlic – a bulb or two a day – might be needed to obtain these effects; trials use garlic pills.

Lycopenes

This is another type of antioxidant carotene, responsible for the red colour of tomatoes. It is interesting because huge quantities of tomatoes are eaten in a traditional Mediterranean diet.

Phytates

Phytates are found in beans and cereals. These substances can bind with minerals, making them unavailable to the body. While this might be useful in the case of iron, preventing it producing harmful free radicals through oxidation, it is unhelpful when phytates bind up antioxidant nutrients such as copper and zinc.

Plant hormones (phytoestrogens)

are chemically similar to human oestrogens which are thought to reduce the risk of breast cancer.

Plant phenols and indoles

These are responsible for some nasty smells (such as when cabbage is cut and when vegetables rot). In laboratory and animal experiments these substances have stopped or slowed down the activity of free radical-like cancer-causing chemicals. In animal studies, they appear to reduce the incidence of chemically-induced cancers of the breast, lung and stomach.

Retinol (vitamin A) and riboflavin (vitamin B2)

These have been called preventive antioxidant vitamins because they have a general role in keeping cells healthy rather than directly preventing oxidation or trapping free radicals.

Uric acid

Uric acid is a by-product of digesting protein and a troublesome substance if you are prone to gout or kidney stones. However, it might act as an antioxidant outside cells, though this is not yet proven.

GROW THE ORGANIC WAY!

Learn how to be a real gardener!

Do away with chemicals and artificial fertilisers!

Develop your own skills and save money too!

The Soil Association is the oldest and most respected organic organisation. Since 1946 we have been producing reports, research papers, books and pamphlets on all aspects of organic food production.

The latest editions of our ever popular organic gardening booklets have been updated by author, TV presenter and organic gardening expert Bob Flowerdew.

These highly informative guides are a must for the gardener who is concerned for the environment and the quality of food produced.

Buy yours now and make your garden an organic haven for you and for the wildlife!
Only £2.00 each!

- ◆ Garden compost
- ◆ Worm compost
- ◆ Some good companions
- ◆ Make your plants work for you
- ◆ Friend and foe in the garden
- ◆ Gardening on difficult soils
- ◆ The value of weeds

Send for your copies now. Please make cheques payable to the Soil Association, and send your order to the Soil Association bookshop,
86 Colston Street, Bristol BS1 5BB.

Please add 50p postage and packaging for every two booklets ordered up to a maximum of £3.50.



THE SOIL ASSOCIATION

Support organic food and farming

Become a member of the Soil Association and receive * free regional guides to buying organic produce * subscription to the journal *Living Earth* * book catalogue with exclusive organic titles * contact with over 40 local groups

Only £16 per year.

For details write to the Membership Department at the
Soil Association, 86 Colston Street, Bristol BS1 5BB,
or phone 0272 290661.

BAKE ORGANIC... PIZZA



25g (1oz) fresh yeast
1 tsp sugar or honey
140ml (1/4 pt) warm water
250g (8oz) organic strong flour
1/2 tsp salt
1 tbsp olive oil
250g (8oz) sliced tomatoes
1 onion, sliced into rings
3 sticks celery finely diced
250g (8oz) grated mozzarella
Oregano, salt, pepper

- 1 Blend together water, yeast and sugar
- 2 Place flour, salt and oil in bowl
- 3 Mix in yeast mixture to form dough
- 4 Knead for 3 minutes
- 5 Leave to rise for 1 hour
- 6 Knead dough for 3 minutes
- 7 Flatten on to oiled 10" baking tray
- 8 Cover dough with sliced tomatoes, onions, celery and mozzarella
- 9 Season with oregano, salt and pepper
- 10 Bake for 25 minutes at 220°C, 425°F, Mk 7



USE DOVES FARM
ORGANIC FLOUR

RG17 0PF Tel: 0498 684880

RYTON ORGANIC GARDENS

THE NATIONAL ORGANIC FOOD AND WINE FAIR 1994

Saturday 9th
and Sunday 10th
July 1994

10.30am - 6pm

Organised by the Henry Doubleday
Research Association

The opportunity to sample the widest
range of organic foods and wines ever
gathered in one place, with:

- + A superb selection of music and entertainment
- + Cookery demonstrations, talks and information
- + plus The Organic Wine Challenge Award
- + and the Young Organic Cook of the Year Award

Tickets £4 on the day or £3.50 in
advance

For further details contact:
Sally Back, HDRA, Ryton Organic
Gardens, Coventry CV8 3LG
Tel: 0203 303517

Organic HARVEST OCTOBER '94

Spring is sprung so now is the time
to look forward to October and
Organic Harvest.

Gardeners, cooks, shops, consumers, schools, local
groups, media, restaurants, farmers and growers are
invited to join this celebration of all that is best about
naturally produced food.

For your information pack write to the Soil Association, 86
Colston Street, Bristol BS1 5BB.