

PLANET FOOD

September 2001

TOMATOES

EDITORIAL – September 2001

To date my tomato growing exercises have been singularly unsuccessful. I am learning that growing tomatoes outside, in the UK, is not so easy. In my first attempt I planted the seeds straight into my vegetable garden. Some of them became quite bushy plants and even produced tomatoes. But the few that did grow ran out of time and never managed to go from green to red.

Had I written this column even a few weeks ago, I would have been crowing about the abundance of tomatoes weighing down my plants this year. I had to put in extra bamboo sticks to support them. Then the first tomato turned red. I triumphantly rushed inside holding it aloft. Cut it into four pieces to share with my husband and children. And tasted it. It was rather bland and tasteless – no better than most shop tomatoes. A friend had given me some small tomato plants grown in her greenhouse but I don't know what variety they were.

Even so, an abundance of home-grown tomatoes would have been appreciated – used for soup and perhaps even to make Hugh's tomato ketchup (see recipes). But further disaster – they have been smitten by blight. Almost all of the ripening crop have been taken over by the pervasive fungus. I now discover that this is difficult to avoid. But I'm not going to give in – next year I will be looking for delicious tasting tomatoes that are blight resistant!

Having three boys means that feeding them with lots of tomatoes is extra important. Research shows that the likelihood of getting prostate cancer (a male disease) in later life is substantially reduced with a high intake of lycopene, which is found in tomatoes. In fact I read an article, only in the last week or so, saying that people already suffering from prostate cancer might actually have their condition improved by high doses of lycopene (administered in tablets).

This month I am going to look at why most tomatoes we buy look the same and don't really taste of much, as well as why blight is a problem for home growers, why some tomatoes we grow could be illegal and what GM tomatoes we might be buying in the future.

THE TOMATO BUSINESS

Nearly all UK tomatoes are grown in heated glass-houses – the UK climate is not hot enough for outside production. In sustainability terms, there is clearly an issue about the amount of energy used to produce tomatoes here versus importing them from warmer climes (think of the fuel needed to fly organic cherry tomatoes from Mexico!).

The industry point out that between 1976 and 1996 they have managed to reduce the amount of fuel used per kilo of tomato fruit by nearly 60%. This is almost entirely down to a dramatic increase in yield.

Another dramatic change in commercial tomato growing in the last ten years is that there has been a major reduction in the amount of chemicals applied. All UK growers now use biological controls to combat pests – this means introducing predators for insects such as whitefly and aphids, rather than chemical sprays.

Plant diseases are not a big problem in the tightly controlled greenhouse environment. Blight (see below) is rare and powdery mildew is combated primarily through resistant varieties. So more and more tomato producers are going chemical free and some are making the bigger leap into organic production (see Cantelo Nurseries).

Commercial growers tend to use a hydroponics system, growing the tomatoes in Rockwool, which most of us have come across as roof insulation. An alternative approach is the 'nutrient film

technique', which involves growing plants up wires (as with other methods) with their roots trailing in channels fed by a continuously flowing 'nutrient-rich' solution. Basically these systems enable the grower to have complete control over all the factors that make tomatoes grow.

But even commercial growers will admit that the focus on maximising yields does not do a lot for the taste of tomatoes. Although the British and Dutch do grow a number of different varieties, their overriding objective is to get as many tomatoes as possible from each plant. In Spain yield is important but because they have a large export market they also focus on extending the shelf life of their produce. These priorities are essentially dictated by the supermarkets who now sell around 75% of fresh tomatoes in the UK. And growers are not able to get more money for better-tasting tomatoes.

Simon Hickmott of [Future Foods](#) says that his motto for good tasting tomatoes is 'Grow them mean keep them keen'. He recommends giving them a minimal amount of water if you want to intensify the flavour, but this is not the recipe for high yields and is unlikely to catch on with commercial growers!

DOES ANYONE KNOW WHICH TOMATO VARIETIES ARE RESISTANT TO BLIGHT?

Surprisingly there is very little that can be done to prevent blight attacking your tomatoes and little research has been done about resistant varieties.

Pauline Pears, Editor in Chief of the forthcoming *Encyclopaedia of Organic Gardening* and Senior Advisor at **HDRA**, says that Bordeaux mixture is allowed under organic standards under the restricted section – commercial producers can use it with permission. But she points out it is preventative rather than curative and not recommended by HDRA – most gardeners are not going to want to have copper in their vegetable patch. Organic potato growers use resistant varieties to this blight, but Pauline says that she would like to hear from anyone who thinks they have found any blight-resistant tomato varieties. Post your response on the *BBC Message Board*.

The main reasons this problem has not yet been addressed is because it has only surfaced fairly recently and is not an issue for commercial growers. Pauline has answered gardeners' questions for years and says that questions on tomato blight were few and far between until 3 years ago. She says this may be down to the warm wet weather conditions. Greenhouse tomatoes are less susceptible, but because the disease is airborne, it can blow in through the door!

The blight over-winters in potato tubers. When an infected tuber grows the new shoots will be diseased, and act as an initial source of infection to start the cycle off again the disease is transmitted. If your potato crop gets blight, cut the tops off and put it, well covered, on the compost heap – it requires living tissue to survive. But don't put the tubers on the heap as they may re-grow. To cut down on early infection next season, make sure you do your best to harvest every tuber, never dump unwanted tubers or save tubers from a blighted crop to plant next year.

Blight is worst for people on allotments because of their proximity to other growers and hygiene can be poor. Apparently city dwellers are likely to have an easier time of it because they are less likely to be close to potato growers. (For more information on potato blight see [HDRA's](#) fact sheet on their website)

ILLEGAL TOMATOES – THE NATIONAL LIST

Both Simon Hickmott of **Future Foods** and Pauline Pears of the **Henry Doubleday Association** (HDRA) are in agreement that the lack of diversity, in the shops, is probably the biggest issue with tomatoes. For the most part this is because the commercial growers are focused on increasing yields rather than offering consumers lots of different tomato varieties. But farmers markets are a good alternative to supermarkets if you want to find some more unusual varieties.

Although there is a far greater choice for gardeners planning to grow tomatoes than for shoppers trying to buy them, surprisingly this choice is actually limited by Government legislation. As with other mainstream fruit and vegetables, tomatoes come under the *Plant Varieties and Seeds Act of 1964*. This states that any seed variety sold in the UK has to be on the so-called National List, which

specifies that they have to be distinct from other varieties. Seeds should be uniform to each other and stable so they will grow the same year after year.

The system does have its advantages but the trouble is that the Government do not pay for seeds to be checked against the criteria – that is down to the grower. So if demand for a particular variety is limited to a few hundred packets of seeds, the income is not enough to pay for the annual tests. If a seed is not on the National List it is, in theory, illegal to sell it, but this is not something that is policed.

Future Foods admit that they do sell unlisted varieties, such as the *Black Prince*. This is a very thin-skinned tomato, which is really only suitable for people who grow their own produce because it is almost impossible to transport without damaging the fruit. Simon Hickmott says that he had great difficulty bringing it to the Future Foods Open Day at the end of August. But I tasted it (see picture below) and thought it was worth the effort.

Interestingly the *Litchi tomato* also sold by Future Foods is exempt from registration because it does not fall within the categories of what is termed a crop – it is a different species (and genus) from most tomatoes. The fruit is small and red with a prickly calyx but Simon is using selective breeding to reduce the thorniness and increase the size of the fruit.

HDRA's Heritage Seed Library is an excellent source of diverse varieties for the amateur grower. Currently there are 106 varieties in red, white, orange, green and yellow, from tiny to huge and from delicious to bland.

GM TOMATOES

Fresh GM tomatoes with a longer shelf life are already available in the US, but in the UK they have only been sold as tomato puree. The tomatoes, used for this, had increased pectin levels, making the fruit denser. The result was a thicker paste, which required less energy in processing. When there was a public outcry over GM food, this tomato puree was taken off the shelves. In some ways this was a pity because it had been introduced in an exemplary fashion, with labelling, an explanation of the technology and a benefit to the consumer in the form of a cost saving. At one point sales exceeded non-GM tomato puree.

Tomatoes with built in pest resistance are being tested and, perhaps most controversially, frost-resistant tomatoes, have been genetically engineered using genes from the flounder fish. But it is widely accepted that the public is unlikely to accept transferring animal genes to plants, in a hurry.

One concern about GM tomatoes is that they could cross-pollinate with potatoes, which belong to the same plant family. Plant experts point out that this would not be possible. More likely, perhaps, varieties developed in laboratories may spread their seed through human excreta. Scientists at one laboratory were photographed eating GM product and then chastised because the tomato seeds could 'escape' via the sewage system. Their stunt to prove the safety of the produce back-fired (not literally) because they had to explain that they were not actually eating GM tomatoes and were therefore shown to be trying to dupe the public!

Who knows where this will all lead? One report from Xinhua celebrated the fact that Chinese scientists have developed a tomato plant reminiscent of Jack & the Bean Stalk. It grows to 10 metres – and fruits as early as February! Meanwhile, in Wuhan, also in China, they have produced tomatoes smaller than ping-pong balls that last 10 times longer than ordinary tomatoes.

This article is largely drawn from 'The New Foods Guide', written by John Elkington and Julia Hailes and published by Gollancz 1999

NEWLY CONVERTED

Interview with Alan Turner from Cantelo Nurseries, near Yeovil, Somerset / Tel: 01935 850207

"We thought our nursery might be suitable for organic, did some research and caught the bug"

Cantelo Nurseries has been growing fresh vegetables for more than 50 years. But they started the switch to organics only three years ago, and this is their first year with fully organic status. Alan Turner says that when they started the move to organic tomatoes, only about 1-2% of tomatoes sold in the UK were organic and almost all of those were imported. He guesses that the market is now about 5% organic and growing. And Cantelo Nurseries is one of the two main English suppliers.

With seven acres under glass the conversion was no small task. Alan says that they had to learn a lot for themselves. The biggest change was moving from a hydroponic system to earth. But he points out that because of the age of the nursery they still employ some people who remember growing tomatoes in soil.

Up to now people have not been convinced that it is worth paying the premium for organic tomatoes because they have not been impressed with the taste. Cantelo Nurseries hopes to change this. Getting a good flavour is a top priority for them – most of what they grow is on the vine and they select varieties for taste. Alan says that the same variety does taste different when grown in soil, but the improvement was not immediate when they switched systems – it has been a gradual process.

With the larger tomatoes it has been difficult getting a good taste and a high yield. Cantelo have only found one big variety that has a decent performance and taste. In general the switch to organic has reduced yields by about 30%. But this has not meant a similar increase in energy used per kilo of produce – because they are not pushing the plants and putting everything into maximising yield, the greenhouses do not need to be so warm.

Another benefit of having relinquished insecticides at Cantelo is that they now use bumble bees for pollination. At the end of many tomato rows are small cardboard box bee hives and the company have become experts on bee husbandry.

Although Cantelo is a big supplier to both Waitrose and Tesco, they also sell at local farmers markets – they do an average of two a week. Alan points out that this is good for PR and is very useful in getting feedback. They use the markets for taste trials and finding out what people want.

TOMATO CONTACTS

CANTELO NURSERIES are a family business dedicated to the production of fresh vegetables. Cantelo Nurseries Ltd, Chilton Cantelo, Yeovil, Somerset BA22 8BE / Tel: 01935 850207

FUTURE FOODS is a mail order company selling unusual species of fruit and vegetables. Simon Hickmott, 01934 713623 / enquiries@futurefoods.com / www.futurefoods.com

HENRY DOUBLEDAY RESEARCH ASSOCIATION (HDRA) is dedicated to developing and improving organic techniques of fruit and vegetable growing. Tel: 02476 303517 / www.hdra.org.uk

HERITAGE SEED LIBRARY – see HDRA

HORTICULTURAL RESEARCH INTERNATIONAL (HRI)
Contact details: HRI, Wellesbourne, Warwick CV35 9EF / Tel: 01789 470382, www.hri.ac.uk

SOIL ASSOCIATION Tel: 0117 914 2402 / www.soilassociation.org

TOMATO GROWERS ASSOCIATION are the trade body for tomato growers.