



DUTCH TOMATO PRODUCTION DEPENDS ON TECHNOLOGY

‘Horticulture sector is crying out for innovation’

Dutch horticulturalists have conquered the German market with a juicy aromatic tomato called Tasty Tom. But in spite of this success, the fruit and vegetable sector is in trouble: prices are low and competition is stiff. For this reason, horticulturalists in the Netherlands are eager for cutting-edge innovative research.

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In the early 1990s, German consumers went right off Dutch tomatoes, which they described as ‘water bombs’. Dutch tomatoes were being harvested young and green, kept cool for ten days and sold when they had a bit of colour but not much taste. They were not a patch on their Mediterranean competitors. Dutch growers learned their lesson from this period, and their tomatoes are now every bit as sweet as those from Spain, and much less pesticide is being used on them too. And so Dutch tomato growers have won back their biggest export market: of the 657 million kilos of tomatoes imported into Germany last year, 358 million kilos came from the Netherlands. They owed their tastiness to an optimal combination of variety selection, feed, light and temperature. Spain provided no more than a quarter of Germany’s tomatoes in 2009.

According to researcher Nico de Groot of the agricultural economics institute LEI, part of Wageningen UR, Dutch greenhouse horticulture has expanded thanks to a massive focus on technology. ‘How do we get more

cucumbers or tomatoes out of a square metre? The use of substratum, screens, lighting and heating – every avenue has been explored in order to maximize harvests. In the 1980s and 90s this happened at the expense of the quality experienced by the consumer. And they could get away with that in a period when demand outstripped supply. It was only when Spain and Morocco became serious competitors that the market came under pressure.’

There are also emotional factors, says De Groot. ‘If German consumers taking part in tasting sessions were offered a tomato with a Dutch flag on it, they thought it was awful, but if you left the flag off it, it would come out as the best. In any case, within three or four years the growers had gone over to a very wide range of breeds.’

FANCY NAMES

Plant breeders already had some interesting varieties to offer. But whereas the old-fashioned round tomato >

produced 60 kilos per square metre, tomatoes on the vine only produced fifty. Quality went up at the expense of quantity. De Groot: 'But horticulturalists went on experimenting with new varieties. They did some clever marketing, and tomato varieties got fancy names such as Tasty Tom. With this kind of smart branding of a tasty product, with smaller quantities per package, your profits do not have to suffer. You can even earn a premium on them.' What is more, adds LEI researcher Michiel van Galen, 'the growers soon got the hang of the new varieties. More vine tomatoes are grown in the Netherlands now than any other variety, and the harvest per square metre is equal to that of the round tomato.'

During the difficult years the area devoted to tomatoes in the Netherlands shrank from about 2,200 hectares in 1982 to 1,100 hectares in 1996. Since then it has grown, reaching 1,630 hectares in 2009. But it is still not all plain sailing for Dutch tomato growers.

LOW PROFITS

At the request of the Ministry of Agriculture, Nature and Food Quality, the LEI surveyed the competition for Dutch vegetable growers. Besides traditional competitors such as Spain, emerging producers such as Turkey and Morocco seem to be marketing more and more horticultural products internationally. And this is affecting the profits made by Dutch horticulturalists, Van Galen says. 'The prices of cucumbers and peppers in particular

had not been as low as they were in 2009 for fifteen years.'

The sector's problems in the Netherlands can mainly be blamed on falling prices and growing competition, says Van Galen. 'That is why Dutch horticulture is so eager for innovative research at the moment. On topics like new varieties, healthy, cholesterol-lowering vegetables, energy saving, ICT and chain research.'

Together with businesses, Wageningen plant scientists and the top institute TTI Green Genetics are conducting a lot of valuable 'precompetitive' research in fields such as DNA and gene technology. 'This secures a basis for breeding research', says De Groot. 'Wageningen's strength lies precisely in this collaboration with the business world.' For example, there is close collaboration on research on the 'closed greenhouse', a highly energy-efficient closed-cycle climate and energy system, as well as on the development of sustainable new production methods in the *Het Nieuwe Telen* project on innovations in horticulture.

In order to raise production without diminishing quality, Wageningen UR is also doing a lot of research on storage methods. 'There are unavoidable problems with coordination', explains De Groot. 'We have also done research on faster transportation by train or more sustainable transportation by waterways, as an alternative to the truck.'

A lot of logistical research has been done too. When should the grower pick, and how does he coordinate that with his buyer so that he can make use of peak production times to launch attractive special offers. A tomato used to take a week to get from the grower to the consumer via the auction, the trader, the exporter and the shop. Now the same tomato is on the supermarket shelf within one or two days. 'Another important logistical development is tracking and tracing', explains Van Galen. Large retailers demand this so that the transport history of a product is transparent. And packaging provides consumers with information about the sustainability of the product.

GAS PRICES GO ON RISING

The horticulture sector used 70 percent less energy in 2009 than it did in 1980. Currently a tomato grower can produce 60 to 100 kilos of tomatoes per square metre with 20 cubic metres of gas. Ten to twenty years ago he would have used twice as much gas to produce 50 to 60 kilos.

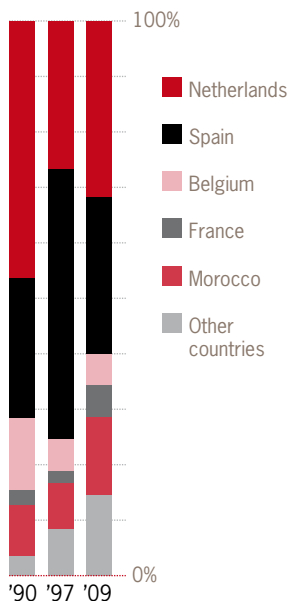
Better and better use is being made of combined heat and power generation, and geothermal and solar heating. A gas-fired generator can produce both heat and electricity. Horticulturists use the heat and some of the electricity, supplying the surplus to the grid. This way modern horticulture produces as much electricity as two medium-sized power stations.

PLEA FOR 'STRONG GOVERNMENT POLICY'

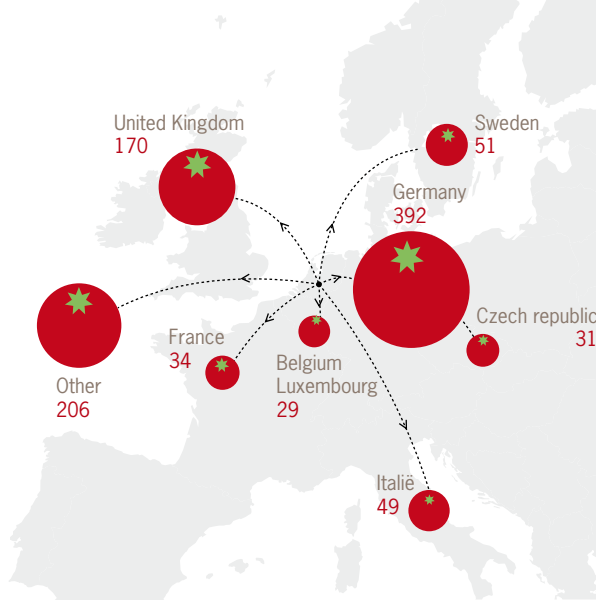
Dutch agrifood organizations have appealed for a 'strong government policy' for the agrifood sector to be part of the new government agreement when the new cabinet is formed. The appeal is a joint initiative by LTO Netherlands, the Dutch Agribusiness Forum, the National Cooperative Council for Agriculture and Horticulture and Wageningen UR. The organizations stress that 'the agrifood cluster, with 600 thousand employees in about 100 thousand companies and an added value of more than 50 billion euros per year' is one of the biggest sectors in the Dutch economy. 'The cluster has a very prominent position internationally, and the Netherlands is the second biggest food exporter in the world', says their letter, which gives examples of ways in which 'the sector distinguishes itself by its modern and targeted approach, which stimulates innovation and entrepreneurship'.

'Tasks we face such as doubling world food production while halving its ecological footprint, contributing to tackling the climate issue, maintaining biodiversity and developing a biobased economy offer unique opportunities for Dutch businesses', claim the signatories. 'The Netherlands will also want to build on its position for tackling issues such as animal health and welfare, and nature and landscape conservation.' The institutions therefore emphasize that any reorganization by the government 'should take into account this special position and the social contribution made by the agrifood sector'.

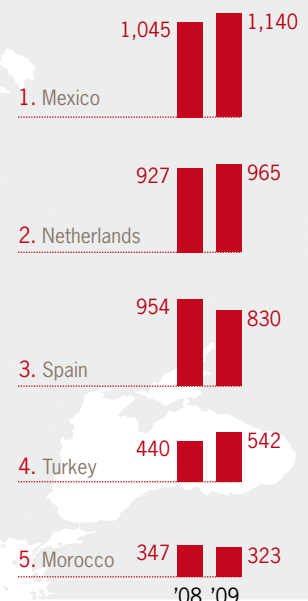
Origins of tomatoes imported to the EU, in percentages



Dutch tomato exports in 2009, in 1,000 tons



Top 5 tomato exporters globally, in millions of kilos



‘Markets are becoming ever more competitive’

But in spite of all the improvements, further research into ways of saving energy is still needed, as gas prices continue to rise. Energy accounts on average for 31 percent of a Dutch horticulturalist’s production costs, and most of that is the gas bill. In 2002 this was only 22 percent. Spanish tomatoes, by contrast, are largely produced in cheap, unheated plastic greenhouses, or in the open air.

NO MORE AUCTIONS

The marketing system has changed radically over the past ten years, too. Tomatoes are hardly ever sold on auction floors any more, but via intermediary organizations or by direct sales. This has sharpened the competition between growers’ associations. De Groot: ‘There is a considerable need for a new working model for the market chain. Growers want to organize and promote their production better and secure their market position. Thanks to growers’ associations, they can now provide large market players with uniform quality and build up more long-term relationships with buyers. And that puts them in a stronger position.’

On the research agenda for the coming years – drawn up with the help of growers’ associations – are both technical and organizational issues. Technical subjects include new robotized growing systems and further energy

savings, through the use of LED lights for example. Van Galen: ‘Great strides have been made on this one, but a lot more can be done. So this research should definitely go ahead, and there should be no economizing here.’

De Groot: ‘We used to talk about the trio of ‘research, extension and education’. Now the focus is on discovery, exploration and research, with the business world much more at the helm and Wageningen collaborating more with other knowledge centres. Markets are becoming ever more competitive and energy more expensive. The logistical challenges are getting bigger all the time. Should you send a truckload of tomatoes down the congested road to Munich every day, or should you move nearer to your market? There are already 100 hectares of Dutch greenhouse horticulture in Greater London. Our horticulturists are a competitive and critical lot, and they will go where the market is. There’s a role for good research there. There is no doubt about it: the sector is crying out for knowledge and innovation.’ ■