



Case Study

ONIONS WITHOUT TEARS

Classification of flavour strength opens up a new market for mild onions to UK producers

SUMMARY

Around 100,000 tonnes of imported 'mild' onions are sold in the UK every year – but soon UK growers will be able to compete for this £30m market, following a successful research project by the Horticulture LINK programme (HortLINK).

By developing a scientific test for onion strength, researchers demonstrated that mild onions could be produced in the UK. So-called 'mild' onions from major exporting countries such as Spain and Chile were found to be often stronger than normal UK brown onions. A trademark has been registered to expand the market for a new and consistent mild/sweet onion.

The £700,000 LINK project enabled leading growers and supermarkets to collaborate with scientific experts from the University of Liverpool and Horticultural Research International. Researchers aimed to understand, measure and control variation in onion flavour. As a result, they have been able to devise a standard measurement scale for the first time.

Onions can now be classified by means of a simple, repeatable test instead of relying on variable results from tasting panels. Increased understanding about mild onion varieties is expected to provide essential information to boost UK production. Growers should be able to replace an increasing proportion of imports, and sales of onions should receive a boost through increased consumer confidence in the accuracy of labelling.

QUOTE

David O'Connor
Allium & Brassica Centre Ltd:

'LINK really brings the consumer of the research together with the provider of the research at the outset, so the whole thing is guided to a useful conclusion. Co-ordination is the key to ensuring that the science stays on course.'

'The whole basis of a flavour market in onions has hung on this LINK project. LINK made it possible to get the commitment and financial input to sort out a long-standing issue that has big implications for UK producers. It also helped raise our profile with major supermarkets and now the results are available to most of the big retail players.'

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PROFILE

British onion producers are among the most sophisticated in the world. Major investment in production, drying and storage has transformed product quality in recent years. However, imports still account for about 40% of total consumption and have a particular hold on the market for mild onions, often eaten raw in salads. Half of all imports – around 100,000 tonnes, mainly from Spain and Chile – are designated ‘mild’, based on historical assumptions.

Researchers set out to provide vital information to support production of high quality, mild onions in the UK. Experts from the Allium and Brassica Centre Ltd and Horticulture Research International joined scientists from the University of Liverpool, leading producers and supermarkets Sainsbury’s and Safeway for the three-and-a-half year project, part of the Horticultural LINK programme (HortLINK).

The first task was to devise an objective test to measure strength and pungency. Scientists found good correlation with pyruvic acid – the end result of a reaction with flavour precursors that mix with enzymes when an onion is cut, releasing volatile compounds. Results from tasting panels showed a clear relationship between perceptions of pungency and pyruvate levels. The test is already used in the United States with mild and sweet onions. HortLINK results established that the test could be used across the whole range of flavour strengths.

Marketplace trials sampled Spanish onions being sold as ‘mild’ in supermarkets. The pyruvate test showed that many of these onions were in fact far stronger than UK-produced cooking onions. Consumer trials in Safeway supermarkets established that there was no difference in sales when labelling was changed from ‘mild’ to ‘large’. The findings confirm that high quality large onions produced in the UK can be substituted for imported varieties, and that mild onions can be grown just as successfully in the British climate. Guidelines are now being developed for growers.

Researchers went on to investigate how flavour variation could be controlled. They discovered that plant genotype is an important factor in determining pungency. Low pungency genotypes adapted for the UK were less pungent than imported counterparts. A very mild genetic line was found and is being grown in the UK in small quantities. The trademark ‘Supasweet’ has been registered to prepare the market for sweet onions that could be grown here during the summer season and imported for the rest of the year.

The project is expected to have major benefits for retailers as well as onion producers. Supasweet onions are being made available to a wide range of supermarkets including Waitrose, Tesco, Marks and Spencer, Budgen and Co-op in addition to Safeway and Sainsbury’s.

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A big push will take place towards industry-wide acceptance of standards. Onions can now be tested and labelled with confidence, making it possible to promote sales of genuinely mild onions. Estimates suggest that more than 50% of the 100,000 tonnes of Spanish imports could be replaced by domestic production. A comparison with the US market shows how overall consumption could be increased. Very mild onions account for 25% of the crop in the US, where annual consumption is higher than the current UK level of 8 kg per head.

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