

IELTS PRACTICE TASK 1

In Pursuit of the Perfect Tomato

For supermarket shoppers, the tomato symbolises what has been lost in terms of taste and texture, in exchange for being able to buy cheap vegetables and fruit all year round. But a fight-back for flavour is under way – and its scientific champion is Harry Klee, horticulture professor at the University of Florida in the USA. 'The big problem with the modern commercial tomato is that growers are not paid for flavour, they're paid for yield and extended shelf life,' says Klee. He thinks that the answer is to 'put together an integrated system that starts with the consumer and what they want. We have come up with a recipe to breed a really great tomato, but a lot of work will be needed to get it into the commercial system, which has other priorities.'

Klee's research started with what are sometimes called heritage tomatoes, which date back to the period before mass commercialisation, and compared these with modern varieties. He found that, in general, the loss of flavour coincided with the intensive breeding that began in the second half of the twentieth century. 'Since flavour started going down, yields of tomatoes have gone up by three hundred per cent,' says Klee. Biochemical analysis of the best-flavoured varieties – with input from many tasting panels – identified sixty-eight flavour-associated compounds. Most important are 'volatiles', many of which also contribute strongly to the enticing smell of freshly-picked tomatoes. Some chemicals, such as cis-3-hexanal, which scientists had previously thought important for taste were not, while others such as geranial, which had been regarded as marginal contributors, were actually key.

At the same time, scientists are discovering the genetics of tomato flavour, appearance and durability. One particular mutation, favoured because it gives ripe tomatoes a beautifully even scarlet surface, turns out to reduce the biosynthesis of flavouring compounds. Now the Florida researchers have bred a tomato which is half-way between the great-tasting tomatoes of the past and modern commercial lines. 'People love the taste of this hybrid and it is easier to grow,' Klee says. 'I'd say we have a hundred per cent of the flavour of old varieties and eighty per cent of the performance of modern ones – but we need a hundred per cent of the performance before commercial growers will take them up.'

Although Klee worked for a large chemical company until 1995, developing genetically modified (GM) crops, he does not see a

Questions 1–8

Complete the summary below.

Choose **NO MORE THAN TWO**

WORDS from the passage for each answer.

Summary

Professor Harry Klee of the University of Florida recognises that today's mass-produced tomatoes, although cheap and available throughout the year, are lacking in both flavour and

1 He identifies the reason for this as the fact that growers are encouraged to grow tomatoes that have a high yield and will have a long

2 in the supermarket. His solution to this problem is a new approach to tomato growing that has

3 preferences as its starting point. Klee compared modern tomatoes with so-called **4** varieties and found the latter more flavoursome. He put the blame for the loss of flavour on intensive breeding techniques.

Klee found that compounds known as volatiles gave tomatoes a distinctive **5** as well as a good flavour and that a chemical called

6 was more important in this respect than had been previously thought. Klee's team have now produced what he calls a **7** tomato that combines the qualities of old and new varieties. It tastes good but cannot yet compete on yield. Klee thinks that **8** tomatoes are unlikely to be developed, however, predicting that traditional breeding techniques will eventually produce a tomato that is both tasty and commercially viable.

role for GM technology in breeding better tomatoes, because of public resistance and because it would be too costly and time-consuming to obtain regulatory approval. 'We can do it through conventional breeding, using modern genetics and flavour chemistry,' he says.	
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