



Flavour-driven marketing of fruits and vegetables

Market segmentation of consumers in the Netherlands, Germany and the United Kingdom based on preferred tomato flavours

Why?

The consumption of fruits and vegetables is low and declining steadily. An increase in fruit and vegetable consumption could be achieved by developing products that are flavourful and nutritious and meet consumers' wishes.

This study offers insights into preferred tomato flavours, product characteristics and consumer motives.

That's why!

We have identified three flavour groups into which consumers can be classified. These groups differ in

- A preference for tomatoes based on flavour as well as on size (large or small)
- The motives that play a role in the purchase and consumption of fruits and vegetables.

With these insights in mind tomatoes and other products can be developed that correspond with clusters of flavour preferences and other consumption related motives. For this study, a representative group of Dutch, German and British consumers (total n=958) tasted tomatoes and completed an online questionnaire.



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Clarification of consumer motives and product characteristics

Tomato flavour preferences

Consumers had been provided with a selection of large and small tomatoes in a broad range of flavours and asked to rate them at home on a scale of 0 (unpleasant) tot 100 (pleasant). The consumers were then classified according to their preferences.

Tomato flavour model

The flavour characteristics that the tomato should meet, have been determined by correlating flavour characteristics with group preferences. The tomato flavour model can also be used to predict whether, and to what extent, Gourmets and Enthusiasts will perceive the flavour of new cultivars as pleasant.

Involvement with food

The high-scoring consumer likes to cook, enjoys talking about food and devotes a fair amount of time to food and cooking.

Openness to novel fruits and vegetables

The high-scoring consumer enjoys trying out new varieties of fruits and vegetables.

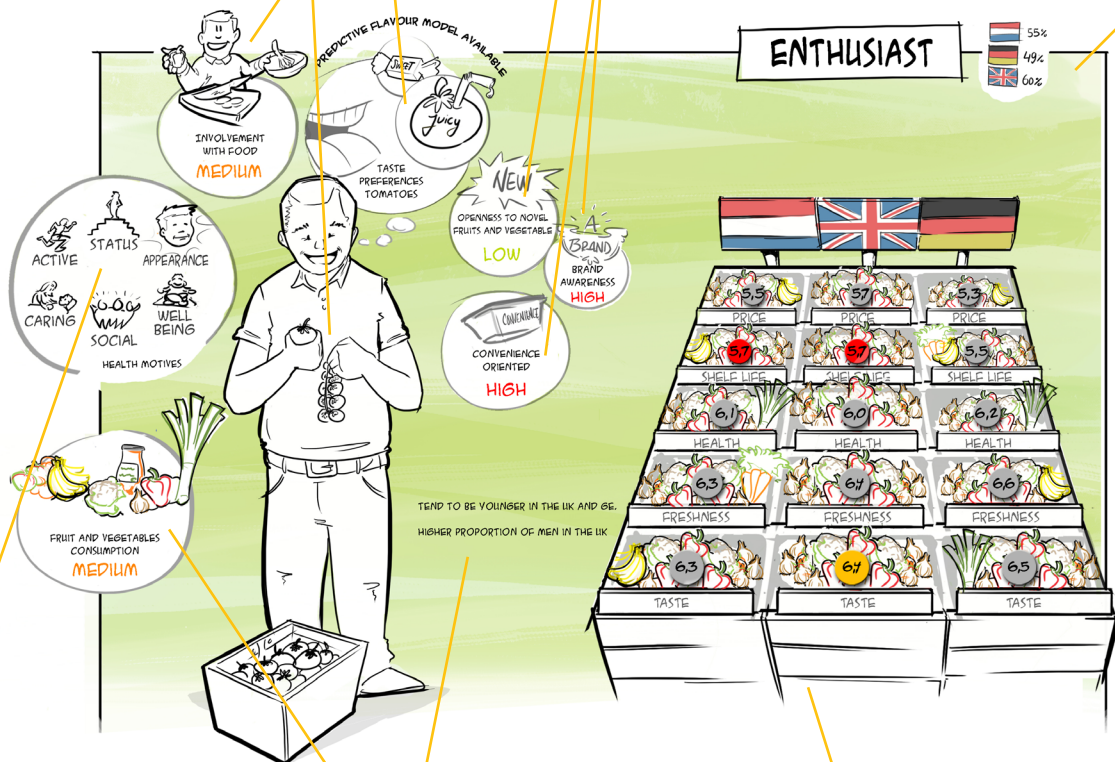
Brand awareness

Has a preference for brand name products.

Focus on convenience

The convenience-oriented consumer prefers food that is easy to buy and prepare.

The **size** of the respective group per country.



Health motives

Important reasons for eating fruits and vegetables are related to health. We can distinguish six motives for pursuing a healthy lifestyle. These motives fall into two groups, social or individual in nature:

Social motives

Caring: to take care of the family
Social: to nurture friendships
Well-being: to feel well

Individual motives

Active: to be physically active
Status: to be successful
Appearance: to look good

Fruit and vegetable intake

Quantities of fruits and vegetables consumed, compared with other flavour groups.

Demographics

Comparison of groups in terms of age, sex, education, work/employment status and income; shown here.

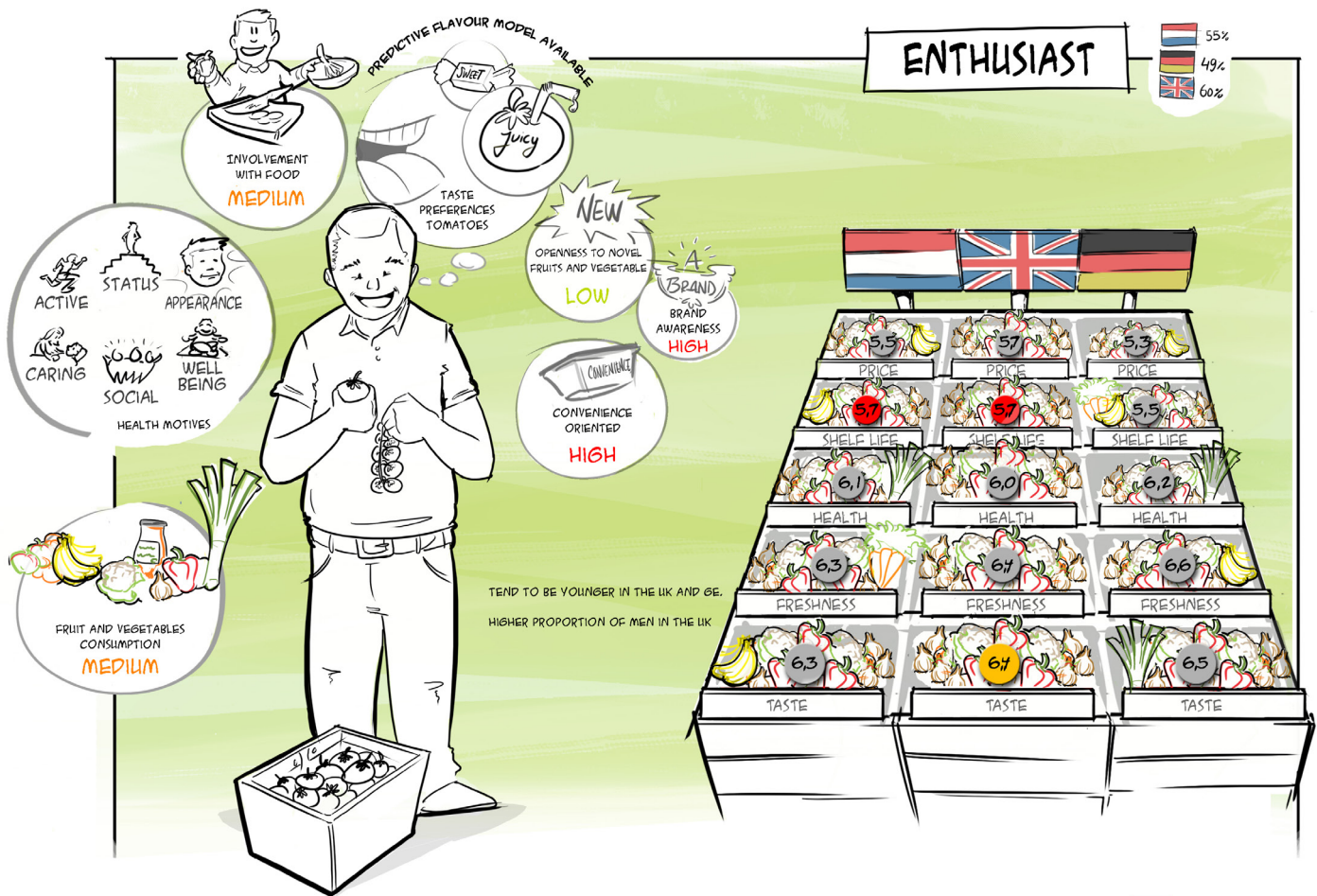
The 5 most important product characteristics:

1. Flavour
2. Freshness
3. Healthiness
4. Shelf life
5. Price

Product characteristics of fruits and vegetables

The vegetable display shows each country's product characteristic rating on a scale from 1 to 7. In all, 17 product characteristics have been scored; the top 5 are listed in the figure above. The ratings are color-coded: a red characteristic is considered significantly more important than an orange or a green one. A grey dot indicates that the difference between flavour groups was not significant.

Three flavour segments



In the Netherlands and Germany and especially in the United Kingdom, Enthusiasts make up the largest group and they like big and small tomatoes. Above all, Enthusiasts want their tomatoes to be juicy, but also sweet.

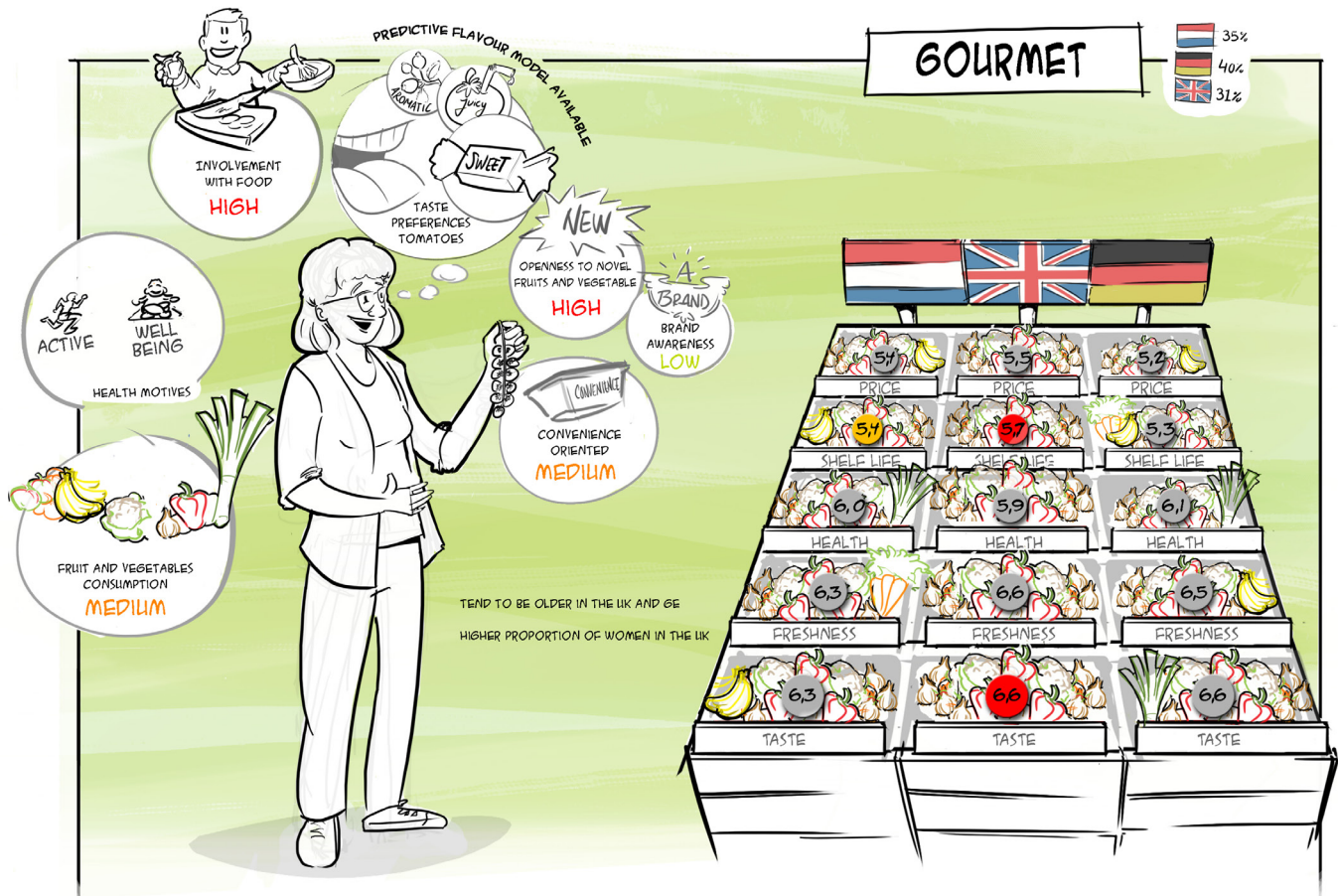
Enthusiasts consume an average amount of mostly as raw fruits and vegetables and fruit juices. The Dutch Enthusiast eats more mid-size to large tomatoes than other Dutch groups.

The Enthusiast is not very interested in new fruit and vegetable products and prefers familiar brands. Convenience is important to this group. Underlying the health reasons for eating greens are both individual and social motives.

In the United Kingdom and Germany, the average Enthusiast is slightly younger than members of other groups, and in the UK, the Enthusiast group numbers more men than other groups. There is no age or sex difference between groups in the Netherlands.

As with other groups, the key product characteristics of fruits and vegetables are flavour, freshness, nutritional value, shelf life and cost. In the Netherlands, shelf life is more important to Enthusiasts than to Gourmets. In the United Kingdom, shelf life is more important to Enthusiasts than to Non-Enthusiasts. Flavour is important to the Enthusiast as well, but in the United Kingdom, flavour is even more important to Gourmets than to Enthusiasts.

Product idea: a big or a small, juicy, slightly sweet, vitamin-rich tomato of a well-known brand, with a long shelf-life, that is easy to eat and prepare and is marketed as a nutritious product that is good for you and others.



Gourmets are a slightly smaller group than Enthusiasts and they only like small tomatoes. To a Gourmet, an important tomato characteristic is that it is sweet, but also juicy and aromatic.

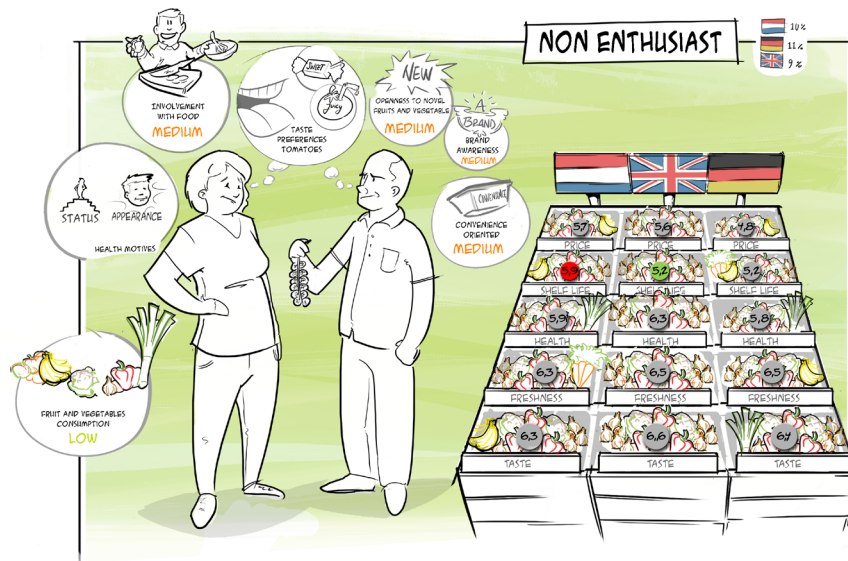
The Gourmet tends to eat an average quantity of fruits and vegetables, especially cooked vegetables. The Gourmet is also involved with food and likes to cook. He/she takes a great interest in novel fruit and vegetable products and brand names are less important. Convenience is less important to the Gourmet than to the Enthusiast.

Underlying the reasons for eating vegetables are individual and social motives: to be physically active and feel well.

The average Gourmet in the United Kingdom and Germany is slightly older than members of other groups; in the United Kingdom the proportion of women in the Gourmet group is higher than in other groups. There is no age or sex difference between groups in the Netherlands.

In the United Kingdom, one fruit and vegetable characteristic that the Gourmet ranks higher than the Enthusiast is flavour. In the Netherlands, shelf life is not quite so important to the Gourmet.

Product idea: a small, sweet, juicy and aromatic tomato, labelled as "new" with a tasty recipe, marketed as a product that will make you feel good and is part of a physically active lifestyle.

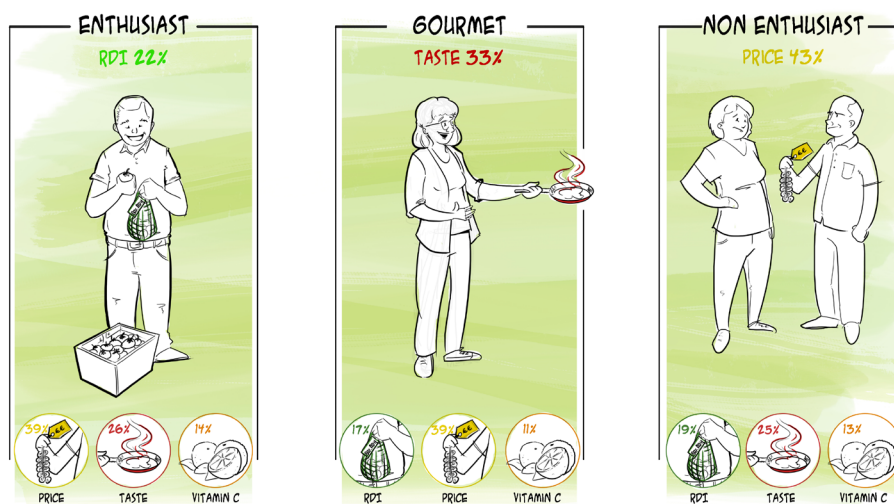


The smallest group, about 10% of consumers, is that of the Non-Enthusiast who dislikes small tomatoes and usually big ones, as well. The Non-Enthusiast eats fewer fruits and vegetables than anyone else. Tomatoes are primarily eaten in cooked dishes and salads. Underlying reasons for eating vegetables are mostly individual motives: to be successful and look good. On other characteristics, the non-Enthusiast scores midway between the Enthusiast and the Gourmet.

To the Non-Enthusiast, the Enthusiast and the Gourmet alike, the most important product characteristics are freshness, nutritional value, shelf life and price. There are virtually no differences between the groups.

Product idea: big tomatoes marketed in the context of a recipe for a cooked dish, that contributes to a feeling of physical attractiveness, because of its low calorie count.

Product selections per flavour group



In a conjoint analysis set-up consumers (n=260 in the Netherlands) were asked to choose between products (tomato, strawberry, sweet pepper) that differed in:

- Purchase price (either € 0.15/500g or by the piece)
- Flavour information ("Sweet Taste", "Selected Flavour" or no information)
- Information about the % RDI of vitamin C per 100 g (20%, 40% or no information).
- Nutrition and health claims ("Natural source of

vitamin C"; with or without: "Vitamin C contributes to strong resistance"; or no information)

For all flavour groups, price was the most important factor, but Non-Enthusiasts scored highest (43%) on the importance of price. Compared with other groups, the Gourmet valued the information "Sweet Taste" and the Enthusiast appreciated the information "Contains 40% of the RDI for vitamin C".

Conclusions

In the Netherlands, Germany and the United Kingdom, consumers fall into three flavour groups based on their tomato flavour preferences:

- **Enthusiasts:** like both big and small tomatoes. They prefer juicy tomatoes.
- **Gourmets:** only like small tomatoes. They prefer sweet tomatoes.
- **Non-Enthusiasts:** do not like small tomatoes.

In addition, the groups differ primarily in their

- Involvement with food
- Openness towards novel F&V products
- Preference for convenience
- Health-related motives
- Preference for certain product characteristics

Application

The results of this study can be applied to product development of fruits and vegetables and used in communicating about them with consumers. This could be done by aligning the group's cluster of flavour preferences, desirable product characteristics and purchase motives.

A product idea is proposed for each group. The tomato flavour model is a useful tool to predict flavour preferences of Enthusiasts and Gourmets in the Netherlands, Germany and the United Kingdom. A source of inspiration for consumer-oriented product development and communication!

We would like to thank our consortium partners



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