Assessing consumer acceptance of organic sausage products without curing agents

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Keywords: market research, food retail, product launch, sales promotion

Abstract:
This paper presents and comments the results of sales experiments on newly developed organic meat products. The main goal of a research study was to examine the issue of consumer acceptance of organic sausage products with no curing agents. The sales experiment lasted over 12 weeks and was run in six supermarkets offering several variants of organic sausages of which three were produced without curing agents and therefore looked different to the variants produced with nitrite. The results allow an analysis of the consumer acceptance for organic meat products produced with and without curing agents as well as a description of the influence of the introduction of organic sausage variants without nitrite on the share of total sales of organic and conventional sausages. Results show a significant increase in sales of organic sausages and even of total sales of sausages and therefore contradict often heard judgements of German market actors that an additional offer of sausages without curing agents would confuse consumers and would lead to a decrease of organic sales.

Introduction and Objectives
There have been ongoing discussions about the use of curing agents in organic meat production in several European countries for many years. One of the main arguments against an abandonment of nitrite additives in organic sausages is that consumers would not accept the different appearance of the sausages (looking pale and sometimes grey) and therefore would not buy them. However, there have not been any publications on the German organic food market up to now backing this argument with hard data. The main aim of the research project "Curing Agents in Organic Meat Products" financed by the Germany Ministry of Consumer Protection was to provide new insights on the theme (Beck et al. 2006). The project consisted of different parts. Besides the analysis of the applicability of substitute technologies for avoiding or reducing the use of nitrite and the legal situation in different countries of the European Union, a survey of organic sausage producers in Germany was carried out to get an overview over the range of organic meat products produced with and without curing additives such as nitrite. A central part of the whole study was the sales experiments of organic sausages of which the main results are reported in this contribution.

The aim of the study part was to test consumer acceptance of sausages produced without curing agents under controlled conditions of a store test in regular shops, where all variants of the same sausages, conventional, organic with nitrite additives, and organic without these additives could be sold. A further aim was to analyse whether the kind of the offer, in self service or in service over the counter, has an

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Archived at http://orgprints.org/9764/
influence on the sales of the different variants as well as to investigate whether the
sales were different between shops in rural and urban areas. Finally, price tests
should show the influence of different price settings on the sales of the sausage
variants.

Methods

To achieve the aim of the empirical study, the analysis took place simultaneously in
six conventional supermarkets over a period of 12 weeks to measure short-term and
middle-term sales impacts and from there, draw conclusions on the consumer
acceptance of the non-use of nitrite in organic sausages. Within the bound of this
store test, three newly developed organic sausage products without nitrite were
launched parallel to the same organic sausages produced with nitrite and the
conventional sausages. Both organic varieties were offered side by side in self-service
as well as with service over the counter. To draw consumers’ attention to the three
new kinds of organic sausage, tasting activities with the assignment of promotion
personnel had been carried out in each shop for one week. Besides the tasting
activities, sales promotion activities with communication material such as displays,
flyers and posters and short time price reductions took place. The six test stores
operated by one particular supermarket chain (tegut) were located in rural and urban
regions, so that a comparison of the consumer acceptance in different areas was also
possible.

Results and Discussion

In the following, the sales developments of the three test products without curing
agents were summarised. That was possible because the compared arithmetic means
of the three products are nearly identical. The test results show a positive sales
development during the first 12 weeks after the product launch of the three nitrite-free
versions of the organic sausages. The short-term incremental sales volume that was
generated in the product launch weeks exceeded all expectations. The averaged
volume of nitrite-free organic sausage variants sold during the week of introduction
was 26 kg. The sales of the conventional as well as the organic variants with nitrite
sank from averaged 70 kg to 65 kg per week and from 45 kg to 40 kg per week
respectively. These results indicate that the launch of the organic nitrite-free sausage
variants caused a total sales increase of around 15 kg and substitution effects of
around 5 kg each for conventional and organic sausages with the use of nitrite.

Table 1 displays the summary of the market shares as a percentage of the total
turnover of the sausages before, during and after the product launch of the new
variants. The total turnover of the 9 sausages in conventional and organic quality with
and without curing agents increased up to 9 percent during the promotion compared to
the weeks before the nitrite-free organic products were launched. The sales of all
observed sausages were even during the next weeks 7 percent higher than before.
The market share of the organic variants with and without nitrite generated a total
market share of 53 percent during the promotional period and 49 percent in the
following weeks which is 12 and 9 percentage points respectively more than in the
period before the new products launch. Another interesting and unexpected result was
that the new pale looking sausages reached a market share of around one third within
the organic range from the first week on.

Table 2 gives an overview on the market shares which were reached in different
regions (urban and rural) and with different forms of service (self-service and service
over the counter). Whereas in the three urban test stores, the market share of the six
sorts of organic sausages amounts to 56 percent of total sausage sales, the corresponding market share in rural areas was 43 percent only. Thus, consumers in urban regions have a significant higher appreciation of organic sausages than in rural regions. However, organic sausages produced without nitrite reached a slightly higher market share (34 percent) on all organic sausages in rural areas than in urban areas (31 percent).

Table 1: Averaged market share of the organic sausages as a percentage of the total turnover of sausages

<table>
<thead>
<tr>
<th></th>
<th>pre product launch period</th>
<th>product launch promotion period</th>
<th>post product launch period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index total turnover of sausages</td>
<td>100.0</td>
<td>108.5</td>
<td>106.7</td>
</tr>
<tr>
<td>Market share of the organic sausages on the total turnover of sausages in percent</td>
<td>40.9</td>
<td>52.5</td>
<td>49.4</td>
</tr>
<tr>
<td>Market share of the organic sausages produced without nitrite additive on the total turnover of the organic sausages in percent</td>
<td>-</td>
<td>35.6</td>
<td>32.1</td>
</tr>
</tbody>
</table>

Table 2: Averaged market share as a percentage of turnover in the weeks\(^1\) after the product launch, differentiated in regions and form of offer

<table>
<thead>
<tr>
<th></th>
<th>urban region</th>
<th>rural region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market share of the organic sausages on the total turnover of sausages in percent</td>
<td>56.2</td>
<td>43.3</td>
</tr>
<tr>
<td>Market share of the organic sausages produced without nitrite additive on the total turnover of the organic sausages in percent</td>
<td>31.3</td>
<td>33.5</td>
</tr>
<tr>
<td>self service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sell service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market share of the organic sausages on the total turnover of sausages in percent</td>
<td>65.6</td>
<td>41.8</td>
</tr>
<tr>
<td>Market share of the organic sausages produced without nitrite additive on the total turnover of the organic sausages in percent</td>
<td>27.6</td>
<td>35.9</td>
</tr>
</tbody>
</table>

\(^1\) Basis of calculation: 10 weeks only because of late introduction of the new product in one shop

Table 2 also shows a comparison of the market shares for organic sausages in self service and service over the counter. The market share of pre-packed organic
sausages in self service (66 percent) was much higher than that served over the
counter (42 percent). The market share of the organic sausages produced without the
nitrite additive on total organic sausages, however, was significantly higher for the
sausages served over the counter (38 percent) than the market share for the same
products sold in self service (28 percent). Obviously, consumers need an explanation
for the different appearance of the sausages produced without curing agents. Besides
that, the empirical findings also show higher substitute effects on the organic variants
with nitrite, offered as service over the counter products and stronger impacts of the
product launch on the conventional sausage products offered in self service. In
addition, the results indicate that the consumer preferences for the form of service
differ between regions. In rural areas consumers preferred the service over the
counter.

The sales analyses for organic sausages also showed interesting and unexpected
results in the field of pricing. Several weeks before the test period, two price
promotions for conventional sausages were conducted with significant price
reductions of around 30 percent and 40 percent. The result was a strong increase in
the sales amount of around 80 and 120 percent for the conventional sausages in the
promotion week. The sales amount of organic sausages was surprisingly not effected
at the same time. A price promotion for organic sausages also took place in one week
of the period before the introduction of the new organic sausages. The sales effect,
however, was comparably low (plus 20 percent), even the price reduction was the
same as for the conventional product (minus 30 percent). The sales of the
conventional sausages were also not effected by the price promotion for the organic
sorts.

Conclusions
The realised market share for the newly launched organic sausage variants produced
without nitrite exceeded all expectations. Even the new sausages looked pale and the
minimum durability was lower, the organic variants without nitrite achieved high sales
over the full period of the test. The product launch had a significant impact on products
sales on all organic sausage products. An increased market share of all organic
sausages of 10 percentage points indicates that many new consumers had been
attracted by the new variants. This leads to the conclusion that if the organic variants
offer additional benefits over the pure organic production to consumers, as in this
experiment sausages being produced without nitrite, then the market shares of
organic products could be increased significantly. The appearance of the new variants
of the organic sausages which were paler and turned grey obviously needed
explanation. The new organic sausage sales were much higher in the service counters
than in self service where no salespersons were present to explain why sausages look
different. However, it must be mentioned that even in self service organic sausages
produced without nitrite additives reached an unexpected high market share above 25
percent of all sales of organic sausages.

Price tests for conventional and for organic sausages have also shown unexpected
results leading to the conclusion that retailers should rethink their price policy for
organic products. While price elasticity of demand was high for conventional
sausages, it was much lower for the organic variants. Interestingly, the cross price
elasticity has also been very low between organic and conventional sausages. Thus,
new customers for organic sausages obviously cannot only be attracted by a lower
price difference between organic and conventional products.
Literature