

## Assessing consumer acceptance of organic sausage products without curing agents

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### 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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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**

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

**Table 2: Averaged market share as a percentage of turnover in the weeks<sup>1</sup> after the product launch, differentiated in regions and form of offer**

	<b>urban region</b>	<b>rural region</b>
Market share of the organic sausages on the total turnover of sausages in percent	56.2	43.3
Market share of the organic sausages produced without nitrite additive on the total turnover of the organic sausages in percent	31.3	33.5
	<b>self service</b>	<b>serve over the counter</b>
Market share of the organic sausages on the total turnover of sausages in percent	65.6	41.8
Market share of the organic sausages produced without nitrite additive on the total turnover of the organic sausages in percent	27.6	35.9

<sup>1</sup> 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 (36 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 for 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**

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