

CONSUMER PERCEPTIONS OF OUTDOOR PIG PRODUCTION, PORK QUALITY AND THEIR WILLINGNESS TO PAY FOR NEW QUALITY ATTRIBUTES

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Introduction

In pork production, attempts have been made over the past decade to find ways to redress consumer concerns over animal welfare and to reduce environmental pollution within an overall framework embracing the economic and social aspects of agricultural production. However the organic sector still occupies only a fraction of the market. Questions have been raised about the long-term financial benefits of 'organic farming' and whether or not organic products will ever occupy more than "niche" markets. What will decide the success and size of the organic pork market will be the image of consumers, the quality of the products and, above all, that consumer perceptions will generate a willingness to pay for the extra production costs.

Material and Methods

Consumer opinions: four focus groups were conducted in four countries with men and women from the town and the country. They discussed pig production and pork quality in general terms [3].

Consumer expectation: These were conducted in the form of a questionnaire asking about quality expectations, attitudes and buying intentions, both with regard to pork produced in conventional indoor systems and extensive outdoor systems.

Consumer choice: photographs of 16 pork chops [4, 5] were systematically modified at two levels of each of colour and fat cover, and were also printed with labels of system of production (indoor or outdoor) which were permuted with labels on origin (home produced or imported). The percentages of consumer choices were categorised as consistent (>5 out of 8 replicates) or inconsistent (<6) choices.

Willingness to pay: After choosing their preferred photograph, each consumer gave a figure for the price relative to a given price. The given prices were 5.01, 5.64, 13.42, 4.86 €/kg for the British, French, Danish and Swedish tests respectively.

Outdoor pork production: littermates, all free of the n and RN alleles, were allocated to either a conventional indoor system with a totally slatted floor, at 0.65 m²/pig and controlled ambient temperature at 22°C or to an outdoor system with sawdust-shave bedding (1.3 m²/pig) with free access to an outdoor area. Pigs were slaughtered at the average live weight of 110 kg.

Meat quality characteristics: after thawing at ambient temperature, the chops were grilled with a double contact grill at 280°C for 6 minutes. A 10-member trained taste panel assessed each chop for odour, tenderness, juiciness and flavour and consumers rated the overall appreciation.

Results

Consumer opinions: Consumer focus groups in France, England, Sweden and Denmark were conducted to obtain insights into the decision-making involved in the choice of fresh pork and attitudes towards today's pig production systems. Many positive perceptions of pork meat were

evoked. Negative images of the production systems in use today were expressed, but rationalised in terms of consumer demands, market competition and by comparisons to previous systems of production. Knowledge of production systems appeared of little consequence in terms of any pork market potential as several groups freely remarked that there was no link between the negative images of production methods and their purchase behaviour. The consumer groups were confused and mistrusted the information on pork quality and origin that was available at the point of purchase [3]. Statistical analysis of the interviews [1], concerning pig production and pork quality, gave 3 main contexts that contained 80% of the words from original discussion. These related to the broad contexts 'political', 'quality' and 'animal production'. Rural men group contributed significantly more to the political context and rural women more to the quality context.

Table 1. Choice based on appearance and labels

Values are the percentages of consumers. Data taken from reference 2

		DK	FR	SW	UK
Colour	Pale	26	17	19	20
	Dark	29	49	35	33
	Inconsistent	45	34	46	47
Fat cover	Lean	33	50	49	37
	Fat	13	5	6	17
	Inconsistent	54	45	45	46
System	Outdoor	45	59	44	36
	Indoor	8	8	10	7
	Inconsistent	47	34	46	57
Origin	Home produced	63	77	71	47
	Imported	4	1	3	3
	Inconsistent	33	22	26	50

Consumer expectations A total of 2451 consumers from Denmark, Sweden, France and the UK completed a survey questionnaire. In all four countries, pork from outdoor production systems was expected to be better in terms of leanness, freshness, healthiness, tenderness, nutritional quality, juiciness. It was also expected to be produced locally without hormones and drugs and be better for animal welfare. However, these quality expectations were poor predictors of attitudes and intentions and varied substantially between countries.

Consumer choice: Looking at the inconsistent choices (Table 1), it is clear that for the 'origin' and 'system', they were more consistently chosen than 'colour' and 'fat cover' except for the UK consumers, who were the least concerned by the information given. The type of colour seemed not so important overall with only a small percentage more choosing the dark colour over the pale red colour. For fatness, all 4 countries and particularly France and Sweden, preferred the leaner option.

Labelling With photographs of fresh pork labelled with origin and system of production, in all 4 countries there was a strong preference for those chops marked 'home

produced' (labelled with the name of the country) and 'outdoor' (Table 1). French and Swedish consumers were particularly attentive to the origin labels with over three-quarters of them making a consistent choice.

Table 2 Information and willingness to pay
Values are in €/kg and percentages. Data from reference 2

	without information	with information	increase (%)
British	5.05	5.25	4.04
French	5.83	6.11	4.78
Danish	11.29	10.96	-2.94
Swedish	5.00	5.29	5.82
means	6.79	6.90	2.93

Willingness to pay: Willingness to pay was tested with and without information on photographs of pork chops. Overall, most consumers were willing to pay more for the information concerning origin and system of production, although Danish consumers were not willing to pay more. On average consumers suggested that they would pay 3% more for such information on the fresh chops (Table 2).

Meat quality: The objective quality of grilled pork from indoor and outdoor (an available outside yard area) was tested (Table 3). There were no significant differences in tenderness, juiciness and flavour judged by trained panellists nor in overall appreciation by consumers and were of medium to good quality.

Discussion

European consumers generally have positive attitudes to pork production although this may not lead to higher consumption. Pork is generally seen as being suitable for different dishes although not as a meat for special occasions and may be perceived as being relatively fatty and unhealthy compared to beef and poultry.

The meat chosen for this study was the pork loin chop as it was essential to select a cut which was recognised in the 4 countries and which exhibits variation in the chosen 4 appearance characteristics. The characteristics chosen were those 4 most frequently cited by consumers at the point of purchase. A new finding was that most often 2 characteristics are used in selection. Marbling and drip were of equally low importance in with equal numbers of consumers choosing the marbled and non-marbled but pork with visible drip was rarely chosen. Colour was important to consumers however overall, preferences for both the darker and the lighter coloured lean were found in the 4 countries. Larger differences were found among consumers from 26 countries [5].

Relationships between choices and socio-economic consumer profiles were weak and therefore it is difficult to targeting any particular segment of consumers for the appearance characteristics. However, the choice of leaner pork by young consumers needs to be taken into account for future successful marketing of pork.

In terms of production of pork, the fatness and colour will depend on the genotype, feed, age and on the post-slaughter conditions. In previous trials on organic pig production, few differences were found in appearance. These results, together with those showing little differences in objective eating qualities, suggest that the

perceived quality of pork is a matter of expectations. Consequently, consumers choose in line with their expectations of a better quality.

With little or no advantage in appearance and eating quality, attitudes, expectations and price of organic pork will be crucial in determining the size of its market share. Information, with the product or in forming attitudes, will play an important role in this. Any information will have to be clear and meaningful to consumers as a lack of information or misinformation may seriously weaken its image. In the meat industry, labels or trade marks differ between countries. However, they are usually symbolic and give little guidance as to the essential elements expected by consumers. One piece of information which most Europeans stress is the 'own country' label as origin [3] which is easily understood and appears to reassure people about safety and quality.

Table 3 Eating quality of pork from outdoor and indoor production systems

Values are means (scale 0 to 10) for French panels

		Outdoor	Indoor
Trained panel	Tenderness	5.6	5.5
	Juiciness	3.8	3.6
	Flavour	5.8	5.8
Consumer	Appreciation	6.4	6.4

Consumers were strongly influenced by the information concerning the origin (preferring pork labelled with their own country) and system (preferring the outdoor production) when judging pork quality.

Consumers appeared to be prepared to pay, on average, only about 3% extra, even when all characteristics of appearance and labelling were available. After tasting, consumers were prepared to pay between 4 and 10% extra for the labelled pork. So, with a system of organic production costing 30 to 35% extra, this willingness to pay would equate to about a 15% substitution of the conventional pork market. However, pork labelled 'home country' is likely to be equally as attractive as pork labelled 'organic production' and it is unlikely that all the meat from the carcass could be commercialised as such.

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References

1. Dransfield, E. Morrot, G. Martin, J-F. and Ngapo, T.M. 2004. Food Quality and Preference 15, 477-488.
2. Dransfield, E., Ngapo, T.M., Nielsen, N.A., Bredahl, L., Sjødén, P.O., Magnusson, M., Campo, M.M. and Nute, G.R. 2004. Meat Science, in press
3. Ngapo, T.M., Dransfield, E., Martin, J-F., Magnusson, M., Bredahl, L. and Nute, G.R. 2003. Meat Science 66, 125-134.
4. Ngapo, T.M., Martin, J-F. and Dransfield, E. 2004. Food Quality and Preference, 15, 349-359.
5. Ngapo, T.M., Martin, J.F. and Dransfield, E. 2004. 50th International Congress of Meat Science and Technology, Helsinki, Finland