

INFLUENCE OF PACKAGING, PRICE, BRAND, AND COMPLEX INFORMATION ON PURCHASE INTENT FOR BEEFYoung, O.A.¹, O'Neill, L.M.¹, Koslow, S.²¹MIRINZ Centre, AgResearch Limited, Hamilton, New Zealand²School of Management and International Marketing, University of Waikato, Hamilton, New Zealand**Background**

Consumers regard redness as a cue for meat freshness. Therefore, most regimes for retail display focus on the preservation of a bright-red colour, reinforcing the belief that bright-red is indicative of good hygiene and eating quality. This is not necessarily the case.

The need to present bright-red meat at retail presents a problem for meat exporting nations like New Zealand. While meat hygiene can be maintained for weeks, the longer meat is held before conventional aerobic display, the shorter the time it takes to turn brown. The remote exporter is thus at a disadvantage. If meat could be retailed in vacuum packs, browning would not be an issue. Seen through a transparent vacuum bag, meat has an unchanging purple-red colour. However, most consumers are unaware of the many advantages of vacuum packed meat at retail and the reasons for its unfamiliar colour.

Taking the vacuum pack concept one step further, meat might be sold in an opaque pack, where the purple-red colour would not be an issue either. Like the transparent vacuum pack, foil laminates can be imprinted with quality graphics, thus providing the opportunity for branding. From a New Zealand perspective in an ideal world, meat sold in branded, opaque packs would fulfil basic marketing tenets: establishing a point of difference through branding and differentiation while avoiding an unwinnable colour war.

Objectives

The present work measures preference-to-buy for three meat pack treatments: overwrapped polystyrene tray, transparent vacuum pack, aluminium-foil vacuum pack. Upon these three experimental treatments we imposed other three other factors (price, brand, complex information) to see if consumer acceptance of novel packs could be changed.

Methods

First we identified the meat packaging and labelling attributes relevant to New Zealand consumers. The repertory grid method (Kelly, 1955) exposed the most important packaging variables. In decreasing importance these were: ability to see the meat clearly, a cheap price, an informative label, a hygienic pack with good sealing, easy storage, high environmental friendliness, a brand.

The three packaging treatments were:

- Steak on a white polystyrene tray overwrapped with oxygen-permeable plastic film (designated 'overwrap').
- Steak in a clear vacuum pouch (designated 'clear vacuum').
- Steak in an aluminium foil-laminated vacuum pouch (designated 'foil vacuum').

Upon these we superimposed price difference, brand, and complex information (as selected from the repertory grid study) in a 3 x 2 x 2 x 2 factorial design. The lower price was 89% of the higher price. A fictitious brand (*Gourmet's Choice*) was either absent or present. The information was either simple (cut, weight, price, best-by-date) or complex (simple information plus the benefits of each packaging regime). Each of the 24 packs contained three sirloin steaks to 0.5 kg.

Two hundred consumers participated in a supermarket catering to an above average income catchment. Consumers had to be regular purchasers and consumers of beef. Twelve packages were presented to each consumer in an assigned random order intended for conjoint analysis (Green & Rao, 1971). Consumers ranked and rated (percentage scale) each package as preference to buy. The preference data were analysed by least squares regression to assess the importance of different attributes (Minitab 12.2, U.S.A.).

Results and discussion

The mean ages of the 45 male and 155 female respondents were 40 and 49 years. Summed over gender they consumed beef 3.5 times a week on average, and 77% claimed they read labels on new food products (mode = 100%). Age and gender had no significant effects on preference-to-buy.

Figure 1 shows the preference distribution between different packaging treatments without the influences of price, brand or complex information. Each point represents a consumer. Points lying on the diagonal line indicate equal liking of the two pack types. Points above and below indicate a preference for one or other packaging. The orthogonal distance between point and diagonal indicates the degree of preference. Overwrap was by far the most preferred and the foil vacuum the least.

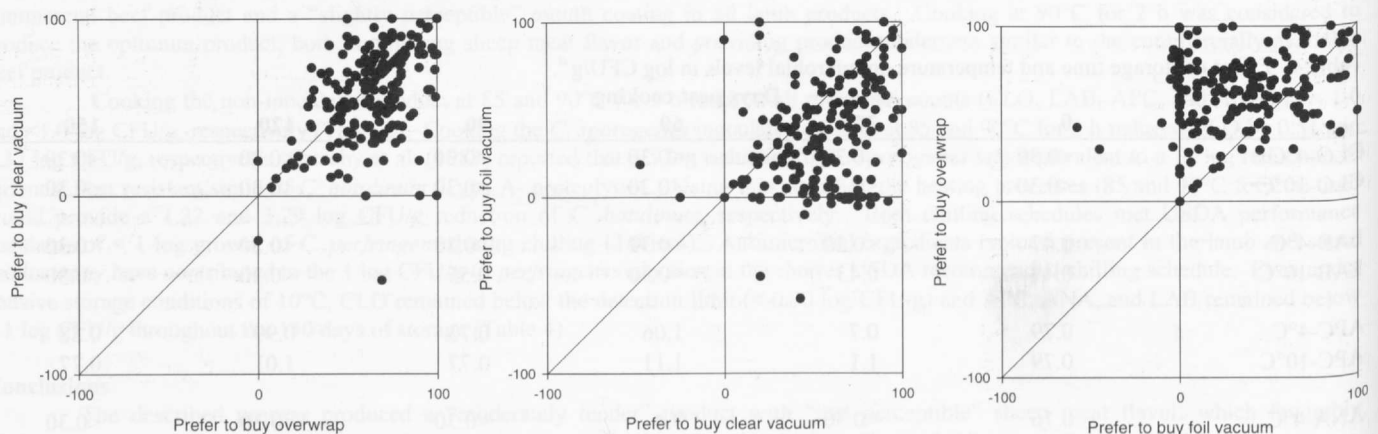


Figure 1. Preference-to-buy distributions for three packaging treatments in the absence of price, brand, and complex information variables.

Table 1. Consumers' first preference-to-buy under two different conditions

Packaging type	First preference-to-buy (%)	
	No added effects ^a	Effects added ^b
Overwrap	43.0	31.5 (no added effects)
Clear vacuum	25.5	41.5
Overwrap or clear vacuum	14.0	6.5
Foil vacuum	10.0	14.0
Overwrap or clear vacuum, foil vacuum	3.5	1.5
Overwrap or foil vacuum	2.5	1.5
Clear vacuum or foil vacuum	1.5	3.5
<i>P</i> value of Chi square excluding 'Overwrap' row data		<0.05

^aFirst preference to buy without the effects of price, brand or complex information.

^bFirst preference to buy where the overwrap is the control (no brand, simple information), and the clear and foil vacuum are the test products (effects of branding and complex information are added). The price was constant on all three packs.

vacuum packs have the added effects of brand and complex information. The clear vacuum pack became the most preferred (41.5%) and even the previously unpopular foil vacuum pack increased its popularity from 10.0 to 14.0%.

The specific effect on preference-to-buy due to price, brand, and complex information was also assessed (Table 2). When lower price was examined in isolation, this attribute received a large neutral response irrespective of the pack (64.5 to 78.5%), probably because patrons of the supermarket were from above average income groups. Nevertheless, the effect of price differed significantly ($P < 0.05$) between packaging types. A greater proportion of consumers preferred the vacuum pack when it had the low price.

Only about 25 % of consumers reacted positively to an added brand. Brand had no statistically significant effect on preference-to-buy any of the packs. Likewise, complex information alone had no significant effect on preference-to-buy. However, for all three treatments, most preferred packages with complex information (52.0 to 59.0% of consumers). Thus, the observation in Table 1 that the majority of respondents preferred clear vacuum packs with branding and complex information was due more to information than to brand. Moreover, the combined effects of information and branding were significant ($P < 0.01$) (Table 1).

Table 2. Influence of qualitative properties on intent to purchase for meat in three pack types

Property	Response	Respondents (%)		
		Overwrapped tray	Clear vacuum	Foil vacuum
Lower price	Positive	9.5	17.0	10.0
	Neutral	78.5	64.5	77.5
	Negative	12.0	18.5	12.5
Brand added	Positive	25.5	30.0	22.0
	Neutral	69.5	60.5	63.5
	Negative	5.0	9.5	8.5
Complex information added	Positive	53.0	59.0	52.0
	Neutral	40.5	33.5	43.5
	Negative	6.5	7.5	4.5

The core hypothesis was that consumers would be more likely to purchase the unfamiliar packs if other cues were available, and this proved to be the case. In fact, the clear vacuum pack bearing detailed information and a brand name was preferred over the plain, unbranded overwrapped polystyrene tray. This indicates that a large proportion of them will accept such packaging, particularly if made aware of the practical benefits of the pack and the reasons for the distinct colour of the meat. A small segment preferred the foil vacuum pack. The willingness of some consumers to make an initial purchase of a totally unfamiliar meat pack on the sole basis of extrinsic product cues is promising for the meat industry, because if consumer expectations regarding the product attributes are confirmed after the first purchase then a subsequent purchase is much more likely. With any vacuum pack the first purchase would substantiate the information on the label as the purple-red meat in the vacuum packs would assume the typical red colour of meat on aerobic display by 'blooming' within about 10 minutes. Thus, the first encounter with the product should assure that the meat is 'normal', a basic requirement to ensure repeat purchases. However, as the pack became established the need to prove the meat was 'normal' should dissipate.

Literature

Kelly, G. A. (1955). *The psychology of personal constructs*. Norton. • Green, P. E., Rao, V. R. (1971). *J. Market. Res.* 8: 355-363.

Acknowledgement

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Of the three superimposed variables, price manipulation has been the traditional way of increasing sales. Branding and information are relatively novel with raw meat. Attention was therefore focused on these two. The 'No added effects' column of Table 1 shows consumers' first preference for packaging, – in descending order – when all three treatments were simultaneously compared without the effects of price, brand, or complex information. Most chose the overwrap as their first preference, followed by the clear vacuum packs (25.5%) and so on.

In the 'Added effects' column the overwrap treatment retains the properties in the first column (no added effects), whereas the clear and foil