LIVER: THE FORGOTTEN VARIETY MEAT IN THE U.S.

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Summary

Trained taste panelists (n=6) preferred liver with caramelized onions in balsamic vinegar sauce over raspberry ed liver (P<.05). The variation among panelists was significant (P<.01). Two consumer groups (n=48 and n=23) Braunsweiger samples on a scale of 1 to 5 with 1=highly favorable and 5=highly unfavorable manufactured from s from control hogs and hogs fed 15% ground flaxseed. Means of 2.4, 2.5, and 2.8 for control, 28 days (d) and flax, respectively (n=48), and 2.3 and 2.2 for control and 28 d flax treatment, respectively (n=23), did not r (P>.05). This research indicates consumers found pork liver and Braunsweiger from flax-fed hogs and control equally favorable. With proper marketing, consumers may allocate more of their food dollars toward the ase of nutritionally enriched variety meats and products manufactured from variety meats.

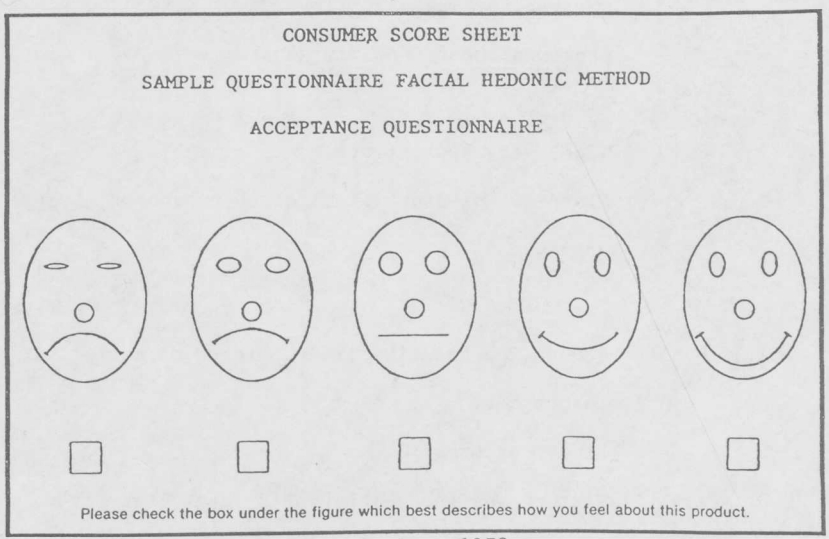
Introduction

Consumption of variety meats is low in the U.S. as reflected in prices paid for variety meats. Pork livers for 20 cents/kg. The low demand for variety meats (pork liver) is an indication of consumer preferences. rch has been conducted to produce pork products which have greater levels of omega-3 fatty acids than pork from ol hogs (Cunnane et al. 1990, Romans et al. 1991). Pork livers from hogs fed diets containing 15% flaxseed the last 28 d of finishing were higher (P<.0001) for 18:2, 18:3 and 20:5 and lower (P<.0001) for 20:4 than s from control hogs. Therefore, consumer evaluation of such nutritionally enriched pork products that have e desirable n-3/n-6 fatty acid ratio is needed. This research was conducted to determine 1. consumer erences toward preparation method for fresh pork liver and 2. consumer responses toward Braunsweiger made from ol versus pork livers from hogs fed a finishing diet containing 15% flaxseed for the final 28 d and 42 d of ing.

Materials and Methods

For the preparation method test, the ingredients in addition to pork liver in caramelized onion in balsamic vinegar e (COBV) were bacon, onions, chicken and balsamic vinegar. In the raspberry recipe (RSL), the key ingredients were berry vinegar and red current jelly. les were evaluated by experienced lists (n=6) using a 9-point hedonic scale 1 = like extremely, 2 = like very much, like moderately, 4 = like slightly, 5 = ther like nor dislike, 6 = dislike slightly, 7 = dislike moderately, 8 = dislike very much, and 9 = dislike emely. In addition, panelists were asked to report flavor, texture, palatability and aroma differences. ting was conducted in individual partitioned taste panel booths with controlled lighting. The test was repeated a second day.

Figure 1



American Meat Science Association, 1978.

For the Braunsweiger test, two consumer groups (n=48 and n=23) used a 5-point facial hedonic questionnaire (Figure 1) where 1 = highly favorable and 5 = highly unfavorable. Braunsweiger was served on unsalted crackers. Testing of three samples (control, 28 d and 42 d) by the larger group was conducted under the same conditions described above, while testing of two samples (control and 28 days) was conducted by the smaller group in a semi-situation.

Results and Discussion

The free response comments from the liver preparation method test are listed in Table 1. The comments were generally more favorable for COBV than for RSL, although none of the comments were seriously critical. This was substantiated by the numerical scores. COBV scored 2.2 $\pm$ .65 on the 9-point hedonic scale, preferred ($P<.01$) over the RSL at 4.2 $\pm$ .65. Both methods of preparation yielded product in the acceptable range.

Although tasters differed ($P<.01$) in the portion of the 9-point hedonic scale they used as shown in Table 1, they all used the upper half of the scale. The second day scores did not differ ($P>.05$) from day 1 scores.

Only three out of 48 consumers commented on the Braunsweiger and the comments were all favorable. Means $\pm$ SE of 2.4 $\pm$ .16, 2.5 $\pm$ .16, and 2.8 $\pm$ .16 for control, 28 d and 42 d flax, respectively (n=48), and 2.3 $\pm$ .18 and 2.2 $\pm$ .18 for control and 28 d flax treatment, respectively (n=23), did not differ ($P>.05$).

Table 1. Panelists Response to COBV vs RSL for Flavor, Texture, Palatability and Aroma

	COBV	RSL
Flavor	Was very good, better than 1A, just because I don't really enjoy raspberry.	Good, but I don't like raspberry.
	A little more liver flavor than 1A.	Raspberry flavor seemed to mask liver flavor more than onion.
	Not real dramatic in flavor, but I tend to prefer blander foods in general.	Good for the first 6 bites than liver flavor began to come through.
	Fine.	I can't stand the flavor.
	Nice, very appropriate.	It was ok, but I would rather have liver that tastes like liver.
	Flavor is pleasant at first then becomes unpleasant.	It was ok.
		I liked the raspberry taste.
Texture	Smooth, tastes like liver. Taste more of liver than bacon.	Smooth.
	Liver texture.	Liver texture.
	Texture was good, more solid meaty like liver.	Texture was very much a liver texture.
	Better than 1A.	Fine, Fine.
	Ok.	

Table 1 Continued

	COBV	RSL
...stability	Rich taste in mouth, I really liked it.	Tangy taste in mouth.
	Good very palatable.	Good, very palatable.
	Could eat this on a large portion basis.	Ok, on a small serving snack basis.
	Good.	Fine.
...ma	Very good.	Not to my preference.
	Smelled appealing to eat.	It was a very good smelling thing.
	Onion was distinct.	No distinctive aroma.
	Slightly cold, unable to effectively evaluate.	Slight cold, unable to effectively evaluate.
	Fine.	Just fine.
	Very good.	Very good.
	Smells.	Is pleasant.

...O = caramelized onion in balsamic vinegar. RSL = raspberry sauted liver.

Koudele et al. (1988) found that ethnic origin weighed most heavily on consumer decisions to consume variety ...s, including pork liver. In this study, several different groups found pork liver and Braunsweiger to be very ...ptable.

Conclusion

This research indicates consumers found pork liver and Braunsweiger ...n flax-fed hogs and control hogs equally favorable. With proper ...rketing, consumers may allocate more of their food dollars toward the ...chase of nutritionally enriched variety meats and products manufactured ...n variety meats.

Table 2. Effect of Taster

Person	Mean score ± SE
3	4.5^{a}
6	4.0^{ab}
5	3.9^{abc}
1	2.8^{bcd}
4	2.5^{cd}
2	1.5^{d}

Means not having a common superscript differ (P<.01) using Duncan's Multiple Range. Means ± SE = .56.

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