

Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent.

--Calvin Coolidge

When You're in a Pickle . . .

This study was designed to learn what people like and dislike about dill pickles and to compare four Northwestern brands.

The Method

Several brands of kosher dill pickles were selected from grocery shelves in Portland, Oregon. One product (Claussen's) was a refrigerated pickle. Whole pickles were sliced lengthwise in quarters for serving. The serving order and identification were randomized and coded to eliminate bias.

The pickles were served to 100 volunteers at a fourth of July community fair in Corbett, Oregon. There were about equal numbers of males and females and the average age was 25 years. They tasted the pickles in semi-isolation booths and recorded their opinions on self-administered questionnaires. Drinking water was provided to clear the palate between tastings.

Pricing and selected laboratory analytical parameters were also determined.

The Results – Consumer Opinion Scores

| | Clause | Farma | Nalley | Steinfel |
|-------------------------------------|---------------|--------------|---------------|-----------------|
| | n | n | | d |
| Appearance (1=best; 4=worst) | 2.9 | 2.5 | 2.2 | 2.4 |
| Texture (+2=firm; 0=right; -2=soft) | +0.6 | 0 | -0.1 | -0.2 |
| Flavor (1=excellent; 9=terrible) | 5.7 | 4.2 | 4.2 | 4.6 |
| Overall Quality (1=best; 4=worst) | 3.0 | 2.2 | 2.4 | 2.5 |
| Price per ounce (cents) | 4.9 | 4.3 | 4.5 | 4.5 |
| Salt (%) | 2.8 | 2.3 | 3.0 | 2.8 |
| Vinegar (acetic acid) (%) | 0.45 | 0.85 | 0.71 | 0.39 |

Standard statistical tests of this data (chi-square and analysis of variance) show that the Claussen product is judged clearly inferior (95% confidence level). Distinctions between the three more similar products can be made with less confidence. For example, the

flavor of the Farman pickle is preferred over the Steinfeld product at the 90% confidence level. Similarly, the Nalley product has a superior appearance; the Farman product has the best texture and also receives the best score for overall quality.

The respondents also commented on what features of the pickles were of greatest interest to them. A tangy, garlic flavor was the most frequently cited favorable characteristic with Farman's and Steinfeld's leading the way. The second most commonly mentioned point was crispness, with Farman's receiving the most favorable notice and Nalley's and Steinfeld's being downrated for mushiness. Claussen's received several strongly derogatory comments.

The salt (and sodium) content of Farman's was lowest and the vinegar was the highest. Nalley's had a high vinegar content and the most salt. Each of the products was found to have satisfactory microbiological quality (absence or very low levels of yeast and mold). Cost-wise, the Farman product had the lowest regular price. Claussen's was the most expensive.

Discussion and Conclusions

It is not safe to draw conclusions from a study such as this without careful attention to the limitations imposed by the experimental design. For example, the samples tested may not be typical of a manufacturer's products and the persons giving their opinions may not be typical of those the product is intended for. The respondents in this study were probably unfamiliar with the refrigerated type of kosher dill pickle marketed by Claussen and did not appreciate its qualities. Nonetheless, connoisseurs might find it very attractive. Individual tastes vary considerably and every product can find a loyal following. It is the size and nature of this following that is critical.

The group tested in this study (skewed toward young adults) seemed to favor the Farman product. They did not know that it was also the lowest priced product. If their tastes reflect the target market for Nalley's and Steinfeld's, some increase in tartness (vinegar) and flavor (garlic, dill) and decrease in salt might be advisable for those brands.

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