NEW PRODUCTS SUCCESSES AND FAILURES

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Consumers are demanding quality and variety in the meals they eat, coupled with quick and easy preparation. The main factors, other than price, which influence consumers' decisions for food purchases include health consciousness, taste and convenience. Meat has a proven record for providing the taste and satisfaction consumers desire. Meals have traditionally been planned around meat. In recent years, however, the demand for meat products has declined because of health implications and convenience factors. New products are made using meat as an ingredient rather than a separate entree. To address these concerns and to maintain its market share, new ways of presenting meat products must be developed.

The most popular ways in which new products are introduced to the market place are changes in size, shape or packaging of existing products. Products that historically have had high demand may be declining simply because that segment of the population which buys the product is becoming smaller. Many of the changes in packaging attempt to capture the interest of other segments of the population, such as convenience-minded consumers, in hopes of reestablishing demand. Other methods of new product presentation are the result of a reduction in fat and salt content which are introduced to attract the attention of health-conscious individuals. Inasmuch as these changes in product presentation fulfill consumer desires for meat products, sensory characteristics are still the ultimate criteria for sustained acceptance. Although consumers are beginning to pay a slightly higher price to obtain convenience and perceived health benefits, they rarely give up taste. People eat food, not nutrition. If the new low fat, low salt product does not mimic the flavor and texture of the established product, consumer acceptance may be minimized.

Current areas of research are targeted toward reductions in fat and salt, two of the constituents of meat and meat products indicted for contributing to health problems. Each of these constituents provide many functions to the meat product, and a reduction in fat and salt change the

characteristics of the product. Fat provides several functions. Flavor, juiciness and a satiety factor are partially dependent on fat content. Given selections of ground beef, consumers will select ground beef with the lowest fat content at the retail case, but will indicate a preference toward the ground beef with a higher fat content during taste evaluations.

These same preferences are also true for processed products, although texture is the primary characteristic that is affected by a reduction in fat content. A more rubbery, less tender product is obtained with lower fat content. To alleviate these textural changes with fat reductions, the USDA has allowed for an increase in the addition of water such that the amount of fat and water in the final product does not exceed 40%. These products have not yet gained wide acceptance due to perception by consumers. Unless steps are taken to correct the problem, the increase in moisture can also cause decreased shelf life. More research is required to reduce fat content and maintain flavor and textural properties.

Salt content can be reduced as much as 25% without excessive changes in textural properties. Salt is added to processed meat products for flavor, increased protein functionality and microbial stability. The taste for salt is acquired indicating that reductions in salt can be accepted if overall consumption of salt by the consumer is reduced. However, the textural properties and stability of the product must be addressed to maintain product characteristics for complete acceptance.

The reduction or replacement of sodium has met with some success in processed meat products. Other chloride salts such as calcium chloride, magnesium chloride or potassium chloride have been examined with potassium chloride showing the best potential. Partial replacement of sodium chloride can be achieved with the incorporation of potassium chloride. Flavor problems relating to the bitterness of potassium chloride can arise if greater than 50% of the sodium chloride is replaced.

The utilization of microwave ovens for meal preparations has increased at a phenomenal pace. The penetration of microwaves into homes has reached 75% and projections are that 90% of all households will contain at least one microwave by 1990. Some predictions suggest that even automobiles will have microwaves as optional equipment for meals on the go. Microwaveable was easily the most utilized label declaration in the last decade.

Lack of consumer acceptance for meat products cooked in a microwave has led to the utilization of microwaves for reheating prepared foods. Uneven heating, reduced browning and flavor differences contribute to poor acceptance of microwave-cooked products. Companies are no longer content with adapting existing products for microwave cooking. Products are beginning to be designed specifically for microwaves, whether it be changes in packaging or changes within product formulation. Cylindrical shaped products, for example, reduce the number of sharp edges and therefore reduce the uneven heating pattern. Browning of the product may be addressed by changes in packaging and the use of susceptors that collect microwave energy and concentrate the heat produced at the surface. It is also important to understand how composition varies the heating profile of different meat products. If these drawbacks are addressed, the opportunity to develop products that can be fully cooked by microwave technology is possible.

Research efforts studying the effect of microwave cooking on beef roasts is in its infancy. Here at the University of Florida, a study by Yates et al. (1988) compared reformed beef roasts cooked in a microwave to those cooked in a conventional oven. A post-cooking temperature rise of 20^{o} - 40^{o}F was found to occur in roasts cooked in a microwave. If this temperature rise was accounted for by turning off the microwave prior to the desired end point temperature, trained sensory panelists did not detect a difference in the roasts cooked in a microwave compared to roasts cooked in a conventional oven. Therefore, successful acceptance of microwaveable beef roasts requires educating the consumer on methods to cook by microwave technology. Future work should involve the identification of the effect of product composition on cooking characteristics of beef roasts.

Product development is the key for preserving demand. The success rate for new products, however, is very low. Conservative estimates for the success rate of products from the time of conception to the introduction on retail shelves is less than 10%. In spite of this low success rate, the number of new products on retail shelves was up 45% in 1988 compared to 1987. Companies are continuing to upgrade products to meet changing consumer demands and maintain their market share.

The underlying impetus for product development is the identification of a problem. A problem facing the meat industry today is to provide a diversified group of consumers with products that fit their lifestyle and still provide taste and satisfaction. Consumers tend not to be consistent with respect to perceptions of healthful foods. Many people who are health conscious will give up eating well marbled steak but will continue to eat premium ice cream and cheese cake. This discontinuity in consumer reactions to health claims is difficult to perceive. Products introduced as the result of an accurate expectation of change or created to make a change will have a better chance of succeeding at the retail level.

The key to a new product's success lies in knowing the product, market, price structure, and retail strategies. An in-depth market study to determine the acceptability of a new product is advised before extensive time and labor are expended in the development of a product. The cost of introducing the product into the wrong market is 20 times greater than obtaining the knowledge of the market into which the product should be introduced.

The size of the company has a great impact on the ability to introduce a product into the market. Small companies have local clientele and relatively small distribution areas. Small production sizes and equipment inventories allow for

flexibility in introducing a new product. Small quantities of the product can be produced and test marketed in the immediate area to determine the success of the product before full scale production begins.

Medium-sized companies have the most difficulty in producing a new product. Medium-sized companies do not have the financial backing to develop untested products like the larger companies and lack the flexibility to produce the product like the smaller companies. Many of these companies are restricted to the introduction of "me-too" products and market products that have been developed and test marketed by larger companies and found successful.

Larger companies have the financial banking for new product development and are more able to absorb the 9 out of 10 failures. In-house research and development labs and the financial backing to perform the proper test marketing help to make a successful product. The failures of products lie within the structure of the firm. Research and development personnel are anxious to examine the production of a new product at full scale. Line supervisors, however, are struggling to make quotas and additional production is not looked upon favorably. Miscommunication between developers and marketing personnel can also lead to misrepresentation of the product.

The future of product development lies within the cooperative actions of all segments of the industry. Monitoring consumer changes in attitude toward meat in hopes of anticipating change can lead to greater success. There are products that as yet have not been developed. These products will provide the versatility, convenience and flavor that will keep meat in demand.