

Processed Meats Year 2008

Roger W. Mandigo*

Introduction

The assignment is to speculate 10 years into the future, to dust off the “old crystal ball” about where this industry will be with respect to processed meat/food products in the year 2008. While the risks of writing and speaking to the topic are many, perhaps foolhardy, by the time history can reflect on these statements and any modicum or truth or reality can set in, no one will remember this paper or the presentation. The real assignment is to challenge your current thinking and try to get you to think 10 years into the future. Perhaps the starting point is to try to level the playing field by defining the term processed meats.

PROCESSED MEATS are meat/food products based on muscle and other soft tissues from animals, birds, or seafood which may contain added non-meat ingredients including water and/or with more than minimal machine processing applied to the meat/food products.

With this as the definition, the readers are challenged to consider the following as targets for change, opportunities for new focus, and most probably some wild speculation. A recent study [Salvage, 1997], pointed out the increasing need to understand the consumers attitudes and the opportunities to position processed meats in the deli. Understanding the consumer is the most significant challenge facing the industry.

Fresh Meat Cuts

Many fresh meats, as we know them today, will change with new cuts offered and fewer of the current cuts available. Others will be either replaced, enhanced, or totally redesigned but will certainly not look like the retail cuts we see today in the fresh meat case. We will continue to move away from fresh meat as a commodity regardless of specie. Branded products containing pride in ownership, friendly preparation instructions, and guarantees of palatability performance or your money back with our apologies will be the norm, not the exception to the rule. Enhancements will target tenderness specifically, textural and other palatability issues, or modify flavor profiles to create a wide offering of products focussed on heritage, ethnic

*Roger W. Mandigo, University of Nebraska, A213 Animal Science, Box 830908, Lincoln, NE 68583-0908

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background, diverse life styles, or single servings. These products will be consumer friendly with simple preparation instructions for comfort, while poised to suggest excitement, fun, and pleasure and thus the “Goof Proof” experience.

Bone

There will be the virtual elimination of bone in consumer cuts of meat. Why do spareribs and backribs need to contain the bone? Besides the ritual of holding the bone, its really the texture of the meat near those bones and the associated connective tissue that enhance the eating experience. On one hand.... why purchase bone, take bone home, cook bone, struggle to eat around the bone, and ultimately spend the time and energy to get rid of the bone. Questions of the safety of bone have been raised in the United Kingdom where retail products are no longer sold containing bone.

Impacting on Consistency and Uniformity

Many of the issues such as consistency, quality, and composition in meat products have for centuries been addressed through further processing. Blending leaner and fatter meats to achieve and consistent composition is one example. The use of salt and phosphates in marinades has improved consistency from several perspectives including improved water retention and thus and impact on juiciness as well as the tenderization of consumer products with the interactions of phosphates on protein binding. These, combined with long-time low-temperature cookery have had a major impact on the pre-cooked ham and roast beef markets. Other processing technologies and ingredients are needed to assist in improving consistency of composition, response to cookery, shelf life extension, and in areas of oxidation, flavor control and palatability.

Biotechnology and Cloning

The announcement of the cloned sheep “Dolly” in 1997 prompted a lot of interest, further announcements of cloning accomplishments, as well as a wide ranging public interest in biotechnology and cloning. On first thought, what if the scientific community could solve the lack of

consistency and poor palatability particularly with respect to tenderness? Could “best-tasting”, portion size and, above all, the food-safety issues be solved through such technologies?

How would the industries associated with muscle decide on the “best” set of parameters and what would be produced? Traits that may be very important to the livestock producer could easily be low priorities for processors and consumers. How will we decide what the “Ideal” pig, steer, sheep, chicken, turkey, trout, and salmon shall be for every possible end-point use? The diversity in raw material sources will certainly be a strength as we proceed into this field. Because of the nature of the business, cloning is an important issue that the meat industry must now face [Krizner, 1998].

Home Meal Replacements

The home meal replacement [HMR] market is growing and will continue to grow. Mistakes will be corrected, consumers will have increased confidence in the concept as it is “fine-tuned”. Today HMR’s are designed to be high margin, high cost items which will change with greater acceptance, consumption, and the number of players producing these products. Packaging will become more simplified, formulations for marination and moisture retention may become more simple with the current ingredient technologies, and more complicated as new ingredient approaches are developed. The key to the expansion of these concepts rests in control of pathogens and the extension of shelf-life in uncured, pre-cooked, refrigerated, and non-refrigerated food items. New technologies and ingredients will be available to supplement the sodium/potassium lactate technology, one of the few technologies available for this class of products today.

Niche and Ethnic Foods

Much has been written about the two fastest growing ethnic markets in the U.S. Whether the words are ethnic, niche, or specialty markets, the clear picture is that more unique foods in all categories will be available, permitting the consumer a wide variety of decisions related to various levels of quality foods from ethnic backgrounds. Second and third generation consumers from ethnic cultures become more assimilated or main-streamed in their food purchase habits. Convenience, flavor, palatability issues, widespread availability, and quality issues are the important points on which to concentrate. Identifying the next two to four niche markets will be the challenge, but the first to get there with high quality, consumer desired products will definitely have the edge. African American products have been developed with a direct focus to target these tastes [Prepared Foods, 1998]. Hispanic and Pacific Rim

cultures have received attention, but usually not in a widespread manner.

Functional Non-Meat Ingredients

Non-meat ingredients have been around since before recorded history. The expanding interest in low-fat and fat-free technologies brought non-meat ingredients back to intensive study. Ingredients to manage water in the finished product or to modify and improve textural properties are in great demand. The intensity of study for the introduction of new and modification of current non-meat ingredients will continue. As the level of understanding of functionality increases, greater modification of functionality will develop. Ingredients to improve food safety, textural improvement, and new concept ingredients will always be in high demand. Functionality combined with economics will lead the way.

Mixed Specie Products

For many of us in this industry there has too long been an emphasis on the purity of the species at the commercial level. Sausage makers have for years mixed species in such products as frankfurters and other cooked sausage products. More recently we have seen greater use of mechanically separated chicken and turkey used in processed products for economic reasons. This has been driven solely by price and profitability. The real challenge is for the industry to be more willing to make whatever the consumers want in product identity. Each specie will contribute to the various parameters of the products in their own manner. Success will be based on consumer satisfaction and not so much on pre-conceived criteria of right and wrong.

Meat as and Ingredient in Foods

For far too long, many people have tried to position meat as the only center-of-the-plate food. Meat enjoys a strong popular place in the consumer’s mind and people eat meat because they like it! Therefore, not to diminish the role of meat in the center-of-the-plate, meat needs to aggressively target its potential as a component in other foods. These are usually new opportunities. These opportunities develop as the consumers wish to spend less time in food preparation or may not have the preparation and cooking skills. The opportunities certainly appear when the consumers choose not to prepare food from scratch. Meat should become an ever more important ingredient in foods available to the consumer.

Single Serving Convenience

Consumers have sent a clear message that they will purchase what fits well in their lifestyles. The popularity and thus the availability of large roasts from the beef chuck and round have all but disappeared from the retail meat case. Some small portions [2-4 servings] of boneless roasts are still available, but recent introductions of pre-cooked, marinated pot roasts in small consumer-sized portions clearly point to exciting new market opportunities. Whether purchased for home heating or purchased in-store hot and ready to eat, single servings are the current trends and without a doubt, here to stay. Efforts are being targeted at fine dining in the home with foods from famous restaurants and chefs [Prepared Foods, 1998].

Pre-Cooked Products

There is no doubt that there will be more pre-cooked food items for both food-service and for retail purchase. Pre-cooked bacon is the current obvious example of a growth market. In the very near future we will see pre-cooked sausage links, steaks, roasts, and chops with a vast array of snack, appetizers, and convenience foods for entertainment. The food service segment of the industry will focus more as the assembler of the meals rather than the provider of basic component preparation. This allows a concentration of technologies particularly related to food safety and quality of the finished products where the critical mass of skilled people can concentrate their focus on the technologies. All segments of the industry will focus on improved delivery of high quality food with improved protection of the consumer in both food safety and product quality issues.

Processing Plant Design and Function

Further processing will move away from the retail setting to central processing facilities, perhaps closely associated with the slaughter/fabrication facility. The historical trend of companies and facilities to specialize solely in slaughter and fresh meat fabrication or in other words "raw material makers" will change dramatically [Eilert, 1998]. With expanded and ever increasing food safety concerns, the trend will be towards specialized processing facilities within or near the source of raw materials. There are issues of freshness, microbial control, flexibility in use of the raw materials that certainly impact on the bottom-line of the industry. Another advantage will be the concentration of technology and food safety in fewer locations to be managed by fewer people. Better availability of packaging and better control over post-production safety issues with less distance from the raw materials will also be an advantage.

Robotics and Mechanization

The heavy reliance of the meat/food industry on hand labor throughout the conversion of live animals, birds, and seafood is burdened with the impact of repetitive motion and worker trauma. Many innovative and creative applications have been made to reduce the problem in commercial plants. One needs only to walk through the slaughter, processing, and further processing facilities to observe the opportunities to mechanize further the many processing steps. The use of employees for concentration of quality aspects, maintenance of consistency and oversight rather than hand labor is a unique opportunity. The use of camera visioning and electronic monitoring of products throughout the process is a developing part of the industry still in its infancy. To be able to sort raw materials quickly and efficiently to maximize their value for specific usage is a tremendous opportunity. This would increase utilization, consistency, and the opportunity to tailor make products for specific applications.

Case Ready Meats

The reality of case ready fresh meats seems to be available, well worked out from a technology perspective, but perhaps the consumer is not quite ready [National Provisioner, 1998]. Food safety concerns have certainly brought focus on this technology. Products produced much closer to the raw meat supply, opportunities to utilize increased hygienic technologies, modified atmosphere packaging [MAP] for extended shelf life during distribution, and changing the skills level in the labor force at the retail level are a few of the potential advantages of these technologies. MAP technologies appear to be growing world wide and offer significant opportunities for the future.

Targeting the World Market

There will be greater kinds and amounts of further processing for export into the world market. Growth in Asia and the former Soviet Republics are the immediate growth market for both processed ingredients and for finished consumer products. U.S. style fast food can be found virtually world wide because of the novelty and the convenience. People world wide want to be able to make decisions and feel that all forms of food are available for their choice. We have good technologies and ingredients, some which originated here and others that have been imported, adapted, and commercialized widely here. Using these opportunities to help strengthen our products and markets will be intensified.

Hybrid Food Products

There are possibilities for meat products to be processed to target the growing need for food to be fun to eat, fulfilling, and tasty, and also to provide special nutritional intervention with added vitamins, minerals, and dietary interactions [Hentges, 1998]. Meat certainly has been and will remain a significant source of certain vitamins and minerals. Could fortification strategies provide new opportunities to a broad line of processed products? While perhaps not viable in many minds today, what are the opportunities for meat products to fill these needs in the future? The trend to nutraceutical applications may be another niche to be filled with processed meat products.

Summary

Processing, as defined in this paper, will continue along traditional lines while making significant advancement into product lines typical of fresh, whole muscle steaks and roasts today. New non-meat ingredients will be a major emphasis as well as new machine processing systems. Understanding consumer thinking and lifestyles is an area where technological people need to sharpen their focus.

Issues like food safety, shelf life extension, shelf stability [non-refrigerated], nutritional quality, clean labels, and non-traditional opportunities for meat will be exciting areas for meat products. Meat products must be consistent, with predictable quality attributes, consumer friendly, of good economic value, and enjoyable. Further processing the raw materials called muscle will be a significant way to expand meat consumption worldwide.

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