Culinology and the Future of the Meat Industry

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Introduction

Culinology™, simply defined, is the process of manufacturing a food item that preserves the desirable characteristics of the same gold standard item freshly prepared. To achieve this, Culinology™ blends the best of the CULINARY ARTS and FOOD TECHNOLOGY. Culinology™ is the guiding vision of the Research Chefs Association (RCA). Formed in 1996 by a group of food professionals, mainly chefs working in industrial settings, the RCA has rapidly grown to over 1,900 members. The RCA membership is comprised of chefs and food scientists working in food manufacturing, chain restaurants, hotels, ingredient supply houses, consulting and academia; and other food professionals in R&D, sales, marketing, manufacturing, distribution, and the media. The meat industry has embraced Culinolgy™ as evidenced by RCA sponsors such as America's Beef Producers, Johnsonville Sausage Co., Cargill Foodservice Meat Solutions, Tyson Foods, Inc., etc. This session addresses the opportunities and challenges facing the Culinology™ approach to R&D in the meat industry.

Who Practices Culinology?

The domain of Culinology™ is populated by chefs and food scientists working in food manufacturing, chain restaurants, hotels, ingredient supply houses, consulting firms and academia. The discipline of Culinology™ has created two new careers, the Research Chef and the Culinary Scientist, although to date the Research Chef predominates. The Research Chef comes from many backgrounds but needs to have culinary training and experience and a level of technical expertise.

Although the Research Chef practices Culinology™ on a daily basis, chefs of all stripes knowingly or unknowingly use Culinology™ in the form of manufactured products. The hotel/restaurant chef may work in a variety of operations ranging from independently owned units to individually operated parts of a chain and are directly responsible for labor, food cost, and day-to-day operations. These chefs have a high degree of familiarity with manufactured items and use them to varying degrees. Chefs in the corporate contract feeding world work for a management company that adheres to standardized policies and procedures. These chefs generally have the same duties as hotel/restaurant chefs and depend heavily on manufactured products. Many chefs choose to work for corporate chain restaurants and are responsible for the food at some or all company locations. Complicating this job, a company may own more than one dining concept to which the chef must adapt. These chefs are not involved in day-to-day operations but rather work directly with purchasing, operations and marketing departments to implement new menu items. These chefs also work hand-in-glove with manufacturers in the Culinology™ process. Corporate R&D chefs (a.k.a. Research Chefs) work in manufacturing or ingredients companies. These chefs hold a variety of duties that may include product development from bench top to scale-up, menu development, and sales support. These chefs work in a highly technical environment and must navigate laboratories, pilot plants, and factory floors.

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Culinology™ Credibility

Since Culinology™ is an emerging discipline, the credentials of its practitioners come from varied sources. For Food Technologists, a bachelor's degree from an accredited food, meat, or animal science program is usually a minimum requirement. Specialized technical certifications exist within the industry. On the culinary side, cooking schools teach the basics and foundations for all areas of culinary arts including baking, butchery, sauces, garde manger (cold food preparation), food service, cost controls, menu design and general management. Unlike food technology, a culinary degree is only a starting point. Professional certification in the culinary arts is done by the American Culinary Federation (ACF), the premier professional association for chefs that uses practical and written exams to verify proficiency in culinary arts. Examples of ACF certification include Certified Master Chef (CMC), Certified Executive Chef (CEC), Certified Sous Chef (CSS), and Certified Culinary Educator (CCE). The RCA also has begun to offer certifications for members practicing Culinology™ The basis for RCA certification is a combination of written exams, verified past work experience, and education to validate knowledge of culinary arts and food science. To date, the RCA offers two certifications, the Certified Research Chef (CRC) and the Certified Culinary Scientist.

The Research Chef in R&D

Depending on the company, Research Chefs may participate in all types of R&D projects including new product develop-

ment (i.e. blue-sky projects, innovation projects), product and package redesigns, value engineering (removing cost), product matching, and quality improvements and technical support. Of these, it is most likely that Research Chefs will perform the majority of their work on new product development projects.

The new product development process can vary, but generally involves the following steps: ideation, concept creation, product formulation, and market validation. Ideation involves the development of new ideas or concepts that use particular ingredients, finished products, or novel applications for new or reformulated products. The creation step generates new products from base recipes. Since most chefs have extensive and diverse backgrounds developing menu items, they may be especially useful by providing classic recipes or directing the development of the gold standard product. During product formulation, bench top recipes and/or pilot scale production may be used for developing different trial versions of the concept. Finally, some level of market validation is used to mitigate the economic risk associated with the development of new products. Most chefs have excellent sensory skills, which can enhance sensory analysis when assessing whether a gold standard product has been developed.

Although in the past these R&D steps have been performed by teams of Food Technologists (and others) with varying degree of success, the addition of the Research Chef and the process of Culinology™ has added another dimension to the process. First, the creative nature of the chef enhances the overall creativity of the project. Chefs tend to be resourceful and knowledgeable with food ingredients, flavors, and textures. Chefs approach cooking as an art and Research Chefs serve as a bridge between the culinary arts and food science. Second, chefs have been customers at one time and thus understand the challenges faced by operators in preparing food products – labor, equipment, heat and hold times, and shelf life, to name a few. Chefs also have first-hand experience with how various ingredients interact in different cooking applications. Creativity, experience, and knowledge of subtle taste variances can help with the new product development formulation curve, especially in matching gold standard products.

Research chefs are also a valuable sales tool. Chefs become a knowledge broker to help with the customer experience. There is a certain excitement associated with a chef demonstration and the use of classic culinary skills and showmanship adds value to a sales presentation. Also, a well-polished chef is able to demonstrate a variety of uses and applications for various food products because hands-on applications are essential to a successful product rollout. Operational procedures, heating and holding times, and applications need to be tested in order to satisfy the end user. As a general rule, the more versatile the product is, the more successful the rollout.

In many companies, the Research Chef has become fully integrated into the R&D process. By practicing the Culinology™, product development teams produce products that have a better chance to meet or exceed customers' expectations, perform in a variety of applications, and meet profit objectives.