Brainstorm: Innovations in Thermal Food Processing Pt. 3

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The *Food Manufacturing* Brainstorm features industry experts sharing their perspectives on issues critical to the overall food industry marketplace. In this issue, we ask:

Which innovations in thermal food processing should manufacturers be aware of and how can they benefit operations and product quality?

This may come as a surprise, but one of the most underestimated tools in thermal food processing is direct flame. Though it is the most primal method of cooking, due to increased technologies we associate it solely with private use when camping or barbequing on the grill. Despite its primitive nature, innovative applications for direct flame have evolved that can take processors to the next level.

Benefits of working with direct flame for product quality go beyond simple enhancement of color and flavor, and are applicable on a wide range of foods.

With direct flame, processors can sear proteins, capturing additional juices otherwise lost when cooking, which benefits both flavor and yield profiles. Flames also allow for rapid peeling and pasteurizing of vegetables such as tomatoes, onions, peppers, jalapeños and tomatillos, with limited damage to the product (increasing yields) and minimal labor (increasing safety and efficiency). Additionally, applying finishing touches to fully cooked proteins by subjecting them to flame is

perhaps the fastest form of pasteurization, extending shelf life and eliminating bacteria.

Furthermore, the results and effects of direct flame through gas-operated machines are usually realized far quicker than their alternatives, so producers can expect increased throughputs. What's more, since gas is generally cheaper than electric, odds are that operating costs will be reduced in comparison. What manufacturer doesn't want to see increased throughputs for a reduced cost?

Beyond production, the effects of working with direct flame are apparent to the ever-evolving consumer. Introducing real flame to operations means no longer attempting to mimic results and fool consumers, but instead provides a product with natural, authentic flavor and color. For these reasons and so many more, it's a wonder why this simplistic method has been so easily forgotten and replaced by manufacturers and producers alike.

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