Preface

Expectation of Development in Food Distribution Technology

OGOSHI, Hiro*

There is a range of temperatures at which each food is most delicious. The range is said to be ±25 °C to 30 °C around human body temperature although it varies depending on the food. As a researcher of technologies related to the cooking and processing of food products and the preparing of delicious food, my primary interest is in how to keep the taste of food during the distribution process. Equipment to maintain a constant temperature is thought to be crucial in keeping food products delicious and safe for consumers. I have high expectations for the development of food distribution technologies, while at the same time focusing on methods and distribution equipment used to keep the taste of food.

Looking at food culture, it was common long ago for families to prepare and eat meals at home, i.e. "home-cooking." However, food custom has recently tended to move outside the home, with more opportunities for families to eat at restaurants. In other words, more and more food is being prepared and eaten outside the home, that is, "eating out." On the other hand, with changes to food custom caused by the appearance of convenience stores in 1974 and other subsequent changes such as the increasing women's social advancement, more families are purchasing side dishes at department stores and other locations, setting them up on their tables for meals, i.e. "prepared foods." Although supermarkets play a large role in making food ingredients available to consumers for home cooking, these same supermarkets also sell side dishes, supporting prepared foods. For this reason, supermarkets have been provided with refrigerated and frozen showcases in response to the demands of various consumers. Twenty-four-hour convenience stores also offer a wide variety of prepared food products so that customers can purchase just the amount they need to eat. For example, products such as boxed lunch meals are stored at a low temperature to keep them fresh longer and are warmed up at the register when purchased. Convenience stores have offered an expanding range of services over the past few years, and even sell warm products during the winter season. The ideal temperature to enjoy warm food is around 65 °C, and offering products at such temperature should increase earnings. Foods such as salad and vinegared dishes are most delicious at low temperatures (from 5 °C to 10 °C), stores therefore keep such foods within this range and mark their expiration date on the package. In this way, more products will continue to be sold at a variety of temperatures, even in the prepared food industry.

In this issue, I first focus on technological research related to chilled transport containers. Cold storage containers used for transportation in food distribution are capable of simultaneously transporting food products with different temperature ranges. Transporting food products at their ideal temperature is also excellent when it comes to keeping the taste of food. This technology can be used in transporting other products that require cooling such as medical products and can be applied to a wide variety of situations.

My second focus point is the introduction of an energy-saving control system that was developed for use in supermarket distribution centers as an example of technology related to food distribution. Energy-saving control systems for freezing-refrigerating warehouse have been customized for warehouse use. These systems include control elements for mechanisms used in each warehouse, such as unit coolers. According to food manufacturers affected by the Great East Japan Earthquake, distribution has stagnated and suffered more damage due to reduced food distribution warehouse functionality including power outages. It would be most beneficial if measures during power outages could also be investigated.

The remarkable third focus point is research related to vending machines. Vending machines are the food distribution devices that we encounter most often in train stations and on the street in our daily lives. In terms of locations where products are sold, nothing is more convenient. Although we can expect much of technologies to serve cold soft drinks and warm coffee or tea, and even with the convenience they offer, there are concerns over power consumption. In our social circumstances which demand technologies that are friendly to the environment, we expect improved energy saving and convenience.

This sums up the three points I focused on in this issue. I hope that technologies to save energy and distribute food at low temperatures from the fundamental perspective of food safety will continue to make progress, and I am looking forward to the development of equipment that will be able to keep the taste of food.

* Doctor (Agriculture), Professor, Department of Food and Nutrition, Human Sciences and Design, Japan Women's University