

days. It was reported at the public hearings that at least two large poultry companies maintain product in the 26° F to 28° F range, and use that range in defining "fresh" on the label. Several industry participants define "fresh" to mean not stale or spoiled and contends that freshness encompasses numerous factors, including taste, aroma, bacterial quality, nutritional characteristics, temperature, and shelf life.

The majority of the poultry industry participants at the public hearings maintained that the poultry industry has the capability of transporting product nationwide at 22° F to 26° F. However, the participants suggested that 20° F to 26° F is the best range for maintaining product quality and limiting microbiological activity during storage and transportation. Many commenters from all constituency groups believed that industry can readily maintain a safe temperature of 26° F or above. They contended that some large companies do this now, and that small producers can market product within 24 hours of slaughter at 32° F.

The poultry industry participants recognize that temperatures inside cargo compartments of trucks transporting poultry products over long distances are likely to vary during transport. The participants stated that to ensure that the quality of poultry products is maintained and that spoilage is retarded, that is, by keeping the cargo compartment temperature at or below 28° F, it is necessary to set truck thermostats at temperatures as low as 21° F. According to the poultry industry participants truck cargo compartments are more difficult to control than a room inside a plant that has giant insulated walls and multiple refrigeration units. The participants contended that commercial coolers generally have a plus or minus 2 degree range, and if industry targets 26° F, a cooler could fluctuate down to 24° F. They stated that, in some instances, the coolers can fluctuate as much as 4 degrees. They also stated that generally, temperature variations in a truck would not be expected to be more than 10 degrees. FSIS has no data with which to confirm or refute that these are common temperature fluctuations in cargo compartments and coolers.

#### **Consumer Expectations and Perceptions**

Most consumer representatives at the public hearings viewed the term "fresh," as it applies to poultry, to mean that the product has never been frozen to an internal temperature below 26° F. Consumer representatives used terms such as "native state," "native

condition," or "recently killed" to describe poultry just after slaughter, dressing, and packaging. Although industry commenters did not make frequent distinctions between fresh and frozen, most consumer representatives believe that for raw poultry to be considered "fresh," it must never have been chilled to a solid or hard-to-the-touch state during any of the processes involved in its preparation, packaging, shipping, storage, or retail sale. Consumer representatives also viewed chicken that was not in its "native state" (i.e., frozen, thawed, or refrozen) as being different from "fresh" chicken in taste, texture, moistness, and shelf life.

Consumer representatives frequently cited 26° F and above as the handling limit for poultry they deemed to be "fresh." Poultry that was hard-to-the-touch (or described as below 26° F) was viewed by consumers to be a frozen product in an altered state and, therefore, a processed product. They expressed the opinion that only fresh products should be labeled as "fresh" and anything frozen, i.e., hard-to-the-touch, should be labeled as "frozen." Consumer representatives noted that, at fish counters, some fish are clearly marked as "fresh," while other fish are labeled as "previously frozen" or as "flash-frozen." Several consumer representatives expressed a willingness to pay more for truly fresh poultry that was accurately labeled as "fresh." Overall, consumer representatives emphasized the need to identify and define key terms in poultry freshness and handling so that these terms could be reflected in poultry labeling. Consumer representatives see better labeling as a means to improve consumer knowledge about the product and to help consumers make purchasing decisions.

#### **Survey of Meat and Poultry Hotline Callers**

Survey participants were those people who were calling the Hotline seeking information on topics of interest to them. There was no attempt to geographically balance the callers surveyed or to get any socio-economic information. However, FSIS sought to learn more about consumer perceptions and expectations concerning the term "fresh" when associated with raw chicken or turkey. The Meat and Poultry Hotline staff conducted an informal survey using a sample comprised of 200 individuals who called the Hotline during the last two weeks of September 1994. A copy of the survey entitled "Consumer Views on Fresh Chicken—Results of a Hotline Survey" is available

for public viewing at the office of the FSIS Docket Clerk.

Survey participants were pre-qualified to include only food shoppers who purchase raw chicken. Qualifying participants were asked six open-ended questions about what the terms "fresh," "frozen," and "previously frozen" mean as applied to raw chicken. They were asked about whether they prefer "fresh" over "frozen" product and, if so, why they prefer to buy "fresh chicken." The shoppers were also asked if they would respond in the same way for raw turkey as for raw chicken.

The responses of these 200 individuals indicated that the term "fresh" is generally associated with product not being frozen, i.e., hard-to-the-touch. About 50 percent of the respondents directly related "fresh" to never frozen or recently slaughtered. Eighty-five percent of the respondents said "previously frozen" does not equate with "fresh." Seventy-five percent of the shoppers try to buy fresh chicken, and many prefer it because they perceive its quality to be better than frozen, for example, tastier or more moist. Other respondents prefer "fresh" chicken because they think frozen chicken is older and more likely to have been mishandled and less safe. Nonetheless, many consumers opt for frozen turkey and perceive it as safer than fresh turkey.

#### **Literature Review**

As a first step in assuring that any policy change on use of the term "fresh" on poultry labeling would not result in conditions causing foodborne illness, FSIS conducted a review of the literature on temperature-related factors that could affect the safety of poultry products during shipment and storage. A copy of the review entitled "Effects of Temperature on the Microbiological Profile and Quality Characteristics of Raw Poultry" is available for public viewing at the office of the FSIS Docket Clerk.

The review, which covered scientific and technical studies on microbial safety and physiological factors regarding perishable poultry products, also confirms that product safety is not jeopardized if raw poultry is maintained at 40° F or below.

Temperature is a key factor that determines both what bacteria can grow in a food product and how fast they grow. Each bacterium has its own characteristic temperature range for growth. As a general class, there are spoilage bacteria that can grow in the temperature range of 28° F to 40° F. Even at 28° F, some species of this class will grow slowly and ultimately spoil