

Dairy Storage and Shelf Life

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COMMENTARY

Shelf life is an established time under a defined set of conditions during which a product is acceptable for use. The three largest variables affecting shelf life are: product characteristics, packaging materials and storage conditions. The table below shows typical shelf life guidelines for dry dairy ingredients in bulk or bag packaging under ideal storage and shipping conditions (maximum temperatures of 25°C with a maximum relative humidity of 65%). In general, though, dairy ingredients manufactured, packaged and stored under ideal conditions can remain free flowing and without color change for periods longer than stated in these guidelines.

Product specific information is available directly from the supplier and may vary depending upon product type, packaging material and processing conditions. U.S. dairy ingredient suppliers are an excellent resource for information related to product formulations and selecting the right ingredient for a specific application. Many suppliers have trained research and development (R&D) experts available to assist customers as needed. Dairy ingredients must be packaged properly to preserve flavor and physical characteristics. The best packaging for dairy products will minimize air and moisture entry into the product.

Several types of packaging are approved for dairy powders. The more durable and most frequently used type is a multi-wall Kraft paper bag with an inner low density polyethylene (LDPE) bag liner, both of which are heat sealed. This type of bag construction is referred to as a "bag within a bag". Packaging differs in the thickness and number of layers of Kraft paper and the thickness and material of the bag liner. The combination of a 3-4 ply multi-wall Kraft paper

bag and 3-4 mil thickness LDPE bag liner offers good protection during storage and handling. The LDPE bag liners have vents to allow air to escape from the bag. This prevents rupture during handling and storage. There are different technologies available to reduce the amount of air and moisture getting into the dry dairy product through these vents; the technology varies by bag manufacturer. Ideal storage conditions for dry dairy products are temperatures below 25°C with a relative humidity below 65%. The greatest loss of product quality during storage is often the result of moisture uptake by the powder which may result in chemical, physical and bacteriological changes. The lactose in dairy ingredients is hygroscopic and readily takes up water. Packaging that is more robust and water-resistant can help extend shelf life, especially in more extreme environments. If you have any questions regarding the quality and/or acceptability of a particular product please contact your supplier lactogenic hormone.

The period of time each dairy product stays fresh varies significantly. For example, pasteurised milk will keep for 12-14 days if kept below 4°C, while yoghurt and similar fermented products should remain of a good quality for 30-40 days under the same storage conditions. Various types of thermal processing are available for treatment of milk products to extend storage life of raw and pasteurized milk. Pasteurization is defined as a heating process of not less than 63°C for 30 min (batch method) or 72°C for 15 sec (HTST or high temperature short time) in approved equipment. Shelf life is the recommended maximum time for which products or fresh (harvested) produce can be stored, during which the defined quality of a specified proportion of the goods remains acceptable under expected (or specified) conditions of distribution, storage and display.

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