

7.3: Egg Products

A number of egg products besides whole shell eggs are used in the baking and food service industry. By law, all egg products other than shell eggs are pasteurized to protect them against salmonella, and the low temperature at which they are kept inhibits bacterial activity, although under certain conditions they may spoil very rapidly.

The chief categories of egg products available are:

Liquid eggs (whole eggs and whole eggs with additional yolks)

Frozen eggs (whole eggs, egg whites, and egg yolks)

Dried and powdered eggs (whole eggs, egg whites, and meringue powder)

Liquid and Frozen Eggs

Liquid and frozen whole eggs are preferred in large bakeries where cracking and emptying of shells is not economical. They are also one of the most economical ways of purchasing eggs. Liquid and frozen whole eggs are sometimes “fortified” by the addition of egg yolks. Some bakers feel that liquid or frozen eggs don’t yield the same volume in sponge cakes as fresh eggs, and there is a certain bias in favor of shell eggs.

If stored in the freezer at -18°C (0°F) or lower, liquid and frozen eggs will keep for long periods with minimum loss of quality. Thawing should take place in the refrigerator or under cold water without submerging the container. Leaving frozen eggs at room temperature to thaw is a bad practice because the outside layers of egg can reach a temperature favorable to bacteria while the centre is still frozen. Heat should never be used to defrost eggs. Unused portions must be refrigerated and used within 24 hours.

Frozen egg yolks consist of 90% egg yolks and 10% sugar to prevent the yolk from gelling and to avoid separation of the fat.

Spray-Dried Whole Eggs and Egg Whites

Dried eggs are used by some bakers as a convenience and cost saver. As with frozen eggs, some bakers doubt their performance in products such as sponge cakes. But dried eggs produce satisfactory results because of the addition of a carbohydrate to the egg before the drying process, usually corn syrup, which results in foaming comparable to fresh eggs.

Dried whole eggs should be stored unopened in a cool place not over 10°C (50°F), preferably in the refrigerator. They are reconstituted by blending 1 kg (2.2 lb.) of powdered whole egg with 3 kg (6.6 lb) of cold water. The water is added slowly while mixing. Once reconstituted, dried eggs should be used immediately or refrigerated promptly and used within an hour.

In mixes such as muffins and cake doughnuts, dried eggs can be mixed in with the other dry ingredients and do not have to be reconstituted. In layer cake formulas, dried eggs are blended with the other dry ingredients before the fat and some water are added, followed by the balance of liquid in two stages.

Spray-dried egg whites are reconstituted by mixing 1 kg (2.2 lb.) of powdered egg white with 1 kg (2.2 lb.) of cold water, letting it stand for 15 minutes, and then adding 9 kg (20 lb.) of cold water. When used in cake mixes, the powdered egg white is blended with the other dry ingredients, but only 7 L (7 qt.) of cold water is used for every 1 kg (2.2 lb.) of powdered egg white.

     

221 Chemistry of Cooking

Dry Egg Substitutes or Replacements

Egg substitutes are made from sweet cheese, whey, egg whites, dextrose, modified tapioca starch, sodium caseinate, and artificial color and flavor. They are cost-cutters and can be used alone or in combination with fresh or dried eggs in cakes, cookies, and fillings. One kg (2.2 lb.) of powder is mixed with 4 kg (9 lb.) of water to replace powdered eggs.

Meringue Powder

While it is not a pure dehydrated egg white, meringue powder is widely used by bakers to make baked Alaska, royal icing, and toppings. It contains vegetable gums and starches to absorb moisture and make it whip better.

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