

DRIED APPLE RECONSTITUTION FOR BAKERY APPLICATIONS

Water Temperature

Evaporated apples can be reconstituted with either hot or cold water (Figure 2). Although the most popular method for reconstitution is to heat the evaporated apples with 3-5 parts water, apples may be slowly reconstituted using a cold water soak. These cold water reconstituted apples can be worked into a cold or hot starch filling if a firm texture and piece integrity are desired.

Effect of Variety

Varietal differences in sugar/acid ratios determine the perceived sweetness and tartness of the fruit. The higher acid apples (Granny Smith, etc.) will taste tarter. Also, the apples malic acid content can interfere with applications incorporating a leavening agent (sodium bicarbonate, etc.), requiring adjustments in the level of apples, the type of apples or the level of leavening acids (sodium acid pyrophosphate, potassium acid tartrate, sodium aluminum sulfate, anhydrous monocalcium phosphate, sodium aluminum phosphate, etc.). Excess carbon dioxide production prior to baking can produce an undesired texture in muffins or cakes. Refrigerated doughs for biscuit or muffin products require limited initial carbon dioxide release during preparation and packaging and considerable gas release during baking. Thus, sweeter apple varieties such as Golden Delicious, Fuji and Gala have been used, since the titratable acidity is lower than Granny Smith apples.

All Purpose Filling

The most common use of evaporated apples is in a typical cooked filling. The apples are simmered for five to ten minutes or until the desired reconstituted texture is obtained. The blend of sugars and spices can be varied to meet the expectations of the bakery professional and is added after the apples have been cooked to limit competition with the apples for the available water. The proper amount of starch (to give the desired consistency) is added as a slurry with water and cooked until the mixture thickens. The starch type must be acid stable, cold or freezer stable for specific applications, smooth in consistency, and bland in flavor. For a fried pie application, the starch may have to be increased to stabilize the pie during and after the frying operations.

Summary

Evaporated and low moisture apples are a versatile fruit addition to many bakery and cereal applications. Technical service and sales representatives are ready to assist the bakery professional with his special application.

TYPICAL USES AND FUNCTIONALITIES

Apple Type	Functionality	Products
Evaporated Apples		
Dices	Piece identity, flavor extender	Fruit fillings, fried pies, Danishes, strudels
Grinds	Extenders, texture, apple sauce Integrity	Cookie filling, granola bars, fruit bars
Pie Pieces	Large piece identity	Apple pies
Chops	Piece integrity, flavor, inexpensive	Mincemeat, apple butter
Low Moisture Apples		
Dices	Piece identity, flavor	Cereals, granola bars, dry mixes
Flakes	Rapid rehydration, piece identity	Cereals, instant hot cereals, dry mixes
Tenderized Dices	Semi-rapid rehydration	Refrigerated doughs, cereals
Granules	Small piece identity, appearance, flavor	Cake mixes, muffins, granola bars, cereals, toppings
Powders, Flake Powders	Texture, flavor, prevent “boil out,” extender	Apple sauce, cookie fillings, cake mixes, fruit leather

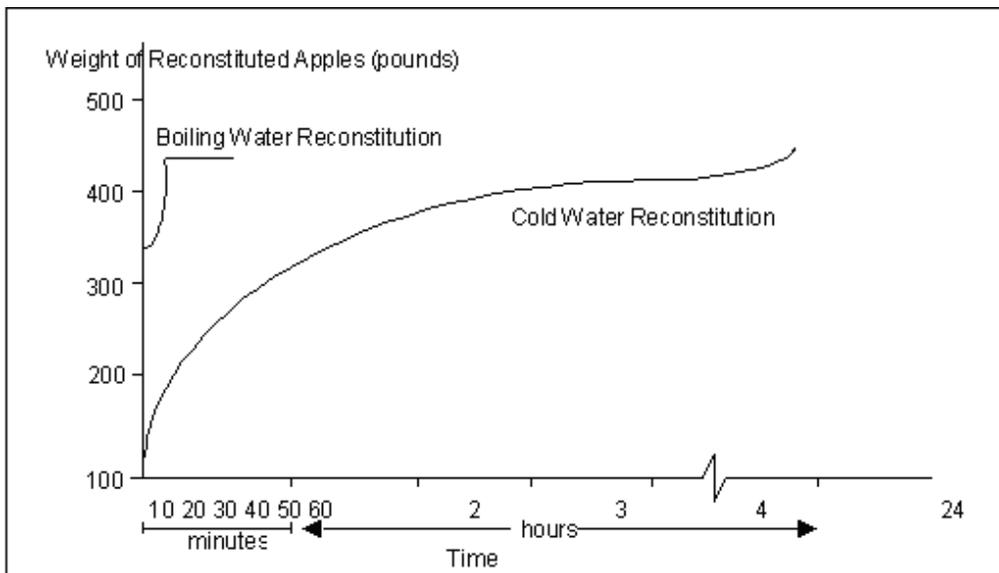


Figure 2: Typical effect of reconstitution procedure on rehydration volume. 100 pounds evaporated apples/500 pounds water.