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1. Introduction

Puff pastry and Danish pastry are characterized by a unique original alveolar structure with large, irregular bubbles nearly always distributed horizontally. This structure results from alternating thin layers of fat and dough. This layered structure is formed by sheeting and laminating steps preceding proving (in the case of Danish pastry) and baking: dough and fat are folded (laminated) to create multiple layers, then rolled out (sheeted) in a roller systems also used in the production of cookies, crackers, pizza, thin bread, pie dough and other ethnic specialties (Levine & Boehmer, 1997). There are many methods for the manual production of puff pastry and they differ from each other in the method by which the layering fat is first incorporated: single fold or three-fold turn. Then two methods are used to fold puff pastry: the three-fold turn or half turn and the four- fold turn. In the first method, the paste is folded into thirds so that each turn multiplies the number of fat layers by three, while in the second, the paste is folded into four so that each turn multiplies layers by four (McGill, 1975). Many types of fat can be incorporated in puff pastry, including butter, anhydrous milk fat and margarines (shortening) with different fatty acid composition and solid fat profiles. The amount of layering fat used in relation to dough may vary from 26 to 75% of the flour weight (McGill, 1975; Stauffer, 1996a; Telloke, 1991). There are many recipes for the dough, some including yeasts, some sweeteners, possibly fat (margarine or shortening), and often dough improvers (cream of tartar, cream powder or acids to strengthen the protein, proteinases to soften and relax the gluten). Despite this diversity, most previous studies have focused on puff pastry (so non-yeasted product), without sweeteners and with margarine as the layering fat.

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