Abstract
In this work, the physiochemical and microbiological characteristics and sensory analysis of a chocolate cake formulation containing porcine freeze dried serum (PS) were studied. Serum was obtained from porcine blood collected at the bleeding line of a slaughterhouse (Federally Inspected Plant) from Hermosillo, México; this plant has the Hazard Analysis and Critical Control Points System implemented to assure the quality of its products. Commercial cake flour was replaced with porcine freeze-dried serum (0; 2; 4; 6 and 8%) in the cake formulation. Humidity, protein and essential amino acid content as well as color, texture, loaf volume, microbiological quality, acceptance and preference were analyzed. The protein content of cakes made with 2-8% of porcine serum was significantly higher than the control. Cakes with 8% of PS showed 2-fold increase in protein content and 40% more lysine than control. By rising the levels of PS neither the crumb color nor the texture were affected. All cakes had similar L, a* and b* color values (P > 0.05), and texture compression values varied from 1.77 to 2.0 Newtons. Consumer panels indicated that cakes made with 8% PS were as well liked as control cakes. About 51% of judges gave the maximal hedonic score to 8% PS cake while 74% of the consumers preferred this cake over a commercial one. The excellent microbiological quality of formulated cakes points out the optimal sanitary conditions at the slaughterhouse and in the cake elaboration process. PS addition to chocolate cakes improved the protein content and loaf volume without loss of bakery product intrinsic quality properties.

Keywords
Bakery products, porcine serum, chocolate cake fortified formulation with animal proteins.