PRODUCTION OF HIGH QUALITY LOW-FAT AND LOW-SALT BOLOGNA SAUSAGES USING FRUCTOOLIGOSACCHARIDES, TRANSGLUTAMINASE, DISODIUM GUANYLATE AND DISODIUM INOSINATE

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Consumption of meat products is associated with a higher risk of cardiovascular diseases; therefore, the meat industry must reduce the salt and fat content of its products in order to survive. In this study, the effects of the addition of fructooligosaccharides (FOS), transglutaminase, disodium guanylate and disodium inosinate on the sensory and physicochemical parameters of bologna sausages with a reduced fat and salt content were evaluated. In the first experiment, bologna sausages with a 25 and 50% reduction in pork back fat containing 0, 3 or 6% FOS were produced. A reduction in pork back fat adversely affected the hardness and sensory properties of the bologna sausages; however, 6% FOS reduced the loss of quality associated with a lower fat content. In the second experiment, bologna sausages with a 50% reduction in pork back fat containing 6% FOS were produced. Additionally, the salt content was reduced by 50% and the enzyme transglutaminase and flavor enhancers disodium guanylate and disodium inosinate were added. Salt reduction adversely affected the hardness and sensory properties of the bologna sausages; whereas addition of transglutaminase and flavor enhancers reduced the loss of quality due to reduced salt content. These results suggest that the combination of FOS (6%), transglutaminase (0.06%), disodium guanylate (0.03%) and disodium inosinate (0.03%) can prevent a loss of sensory quality, enabling the production of bologna sausages with approximately 45% lower levels of fat and sodium.