EFFECT OF THE ADDITION OF OKARA (BY-PRODUCT FROM SOYBEAN AQUEOUS EXTRACT) OVER THE TECHNOLOGICAL PROPERTIES OF BEEF HAMBURGERS.

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Brazil has one of the biggest productions of soybeans in the world with 70 million tons and with an increase in its industrialization so are the residues generated. The aim of this study was to use okara, the low cost residue obtained from the extraction of soymilk, in the development of beef hamburgers. The effect of okara on hamburgers was evaluated through analysis of shrinkage, yield, moisture and fat retention. Okara showed initial moisture content of approximately 63% and was dried at 60°C for 10 hours in an oven with forced air circulation until a final moisture content of 10%. A simplex-centroid experimental design was applied to evaluate the effect of the addition of soy texturized protein (PTS), okara and fat, in concentrations varying from 0 to 8%, applied in seven trials. The models obtained from the statistics analysis demonstrated to be significant up to a limit of 95%, but not predictive. The addition of PTS showed better results by reduction in shrinkage, higher yield, higher moisture and fat retention with values of 15.35, 76.77, 44.67 and 95.97%, respectively. The addition of okara also had similar and positive results with values of 17.35, 72.88, 37.56 and 80.31%, respectively. Regarding the addition of fat, values were 28.74, 58.29, 30.44 and 57.74%, respectively. There were significant differences between the trials. Results reveal that both, PTS and Okara, are essential to improve the characteristics of hamburgers evaluated in this study.