INFLUENCE OF TEMPERATURE DRYING KINETICS OF FIXED BED IN ANTIOXIDANTS CONSTITUENTS PRESENT IN PINEAPPLE RESIDUE

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Pineapple is the second tropical crop in global importance, representing about 20% of the world’s fruits. After the extraction of the juice there is the generation of residue, which is approximately 50% of fruit weight, contributing to environmental problems. One method that can be used to recycle such residue is drying, a process of combined heat and mass transfer, which reduces the water content, making it difficult to microbial growth. Therefore, the objective was to study the kinetics of the pineapple residue drying in a fixed bed. The experiments were performed at a velocity of 1.5m/s at the temperatures of 46 and 60°C. The drying time was fixed (7.25h) for the purpose of maintaining the final product quality for the analysis of flavonoids and phenolic contents. The statistical test performed was the t-student. The total phenolic content obtained after drying at temperatures of 46°C (13.271 ± 0.747mg galic acid/100g) and 60°C (13.793 ± 0.256mg galic acid/100g) were statistically similar. However, these values were significantly higher when compared with the residue in natura (0.241 ± 0.021mg galic acid/100g). The total flavonoids obtained at 46°C (0.581 ± 0.019mg rutin/100g) was statistically higher than that obtained at a temperature of 60°C (0.396 ± 0.027mg rutin/100g). Both contents of flavonoids in the pineapple residue after drying differed statistically to the contents found in the residue in natura (0.019 ± 0.001mg rutin/100g). By the results obtained, it is observed that for the pineapple residue, air drying in fixed bed is efficient.