RESEARCH ON THE PHYSICAL CHANGES OF CEREAL SEEDS DRIED IN THE INNOVATIVE EQUIPMENT HYBRID DRYING

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Abstract

Hybrid drying of cereal seeds is a modern drying method. Over time, more research has been carried out in the field of grain drying, moving from convective drying as the commonly used method, to hybrid drying that combines the convective phenomenon with that of thermal conduction or radiation. Current technology offers the possibility of using hybrid methods of drying cereal seeds, which have the advantage of lower energy consumption and shorter drying time compared to the convective drying method. The paper proposes the analysis of the physical changes that occur after the hybrid drying of cereal seeds. The research was carried out by drying cereal seeds on an innovative hybrid drying facility that uses both convection and microwaves. In this sense, the physical changes that occur in corn seeds were studied, through determinations of humidity, changes in color, dimension, as well as changes related to the mechanical resistance of the seeds. The maximum drying temperatures inside the dryer were between 48 and 50 °C, obtained at a maximum microwave power of 2400 W, and a drying time of 3 seconds.

Key words: (seed, hybrid drying, physical parameters)