The present work investigated the drying of both thin (5 cm) and thick (40 cm) of tapioca chips (average size 3 mm x 5 mm x 5 mm) in a through-flow dryer to understand the effects of hot air velocity and temperature on the drying characteristic curve and developed a mathematical model to calculate the profile of moisture content in the bed and the required drying time. From the experiments, on 3 cases of tapioca drying, i.e. the case of normal drying (No periodic mixing of material or alternating the hot air current), the case of mixing the material periodically and the case of alternating the hot air current periodically, it was found that the mathematical model was able to predict required drying times that were close to the experimental results with maximum error of 5.3%, 3.2% and 7.7% for the case of normal drying, of mixing the material periodically (every 150 minutes) and of alternating the hot air current periodically (every 30 minutes), respectively.

When the required drying times were compared, it was found that periodic mixing invariably took less(up to 14.8% less) than or equal to the case of normal drying. On the other hand, the case of drying with periodic alternating of the hot air current hardly had

any effect on the drying time and in some instances might take longer than the case of normal drying.

In case of drying with periodic mixing, the optimal time interval θ_m (between mixing operation) that minimized the drying time was such a value of θ_m that could exactly or almost exactly divide $\bar{\theta}_f$ (the drying time required to reduce the average moisture content down to a desired value) of the case of normal drying.