Abstract
Microwave drying provides economic advantages based on optimised energy consumption and productivity deriving from the changes in physical and chemical properties of water in a microwave field: heating rate, as influenced by chemical composition, volume, the presence of the heat transformer; volume expansion, vapour pressure, rH, evaporation rate and the evaporation parameter – all measured in relation to temperature, time and power. For example, in the case of felt, energy consumption is reduced from 4-6 kWh in classical drying to 1.7-2.3 kWh during microwave drying per 1 kg of dried water. In addition, the drying period is shortened from 200-400 min. in classical drying to 60-140 min. in microwave drying. Thus, based on drying time alone, productivity increases 3 to 4 times. Each material subjected to a drying process is characterised by typical energy consumption and productivity levels.

Key words: water, field, microwave, trensfer, drying