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Res. Agr. Eng.

Blahovec J.:

Dielectric properties of deformed early potatoes

The permittivity of potato tissue was studied during uniaxial compression of cylindrical specimens prepared from two early varieties. Both the real and the imaginary permittivity components were determined repeatedly during the loading and unloading tests. The analysis of the results obtained shows that small differences exist between the permittivity of the late and early potato varieties. The differences are concentrated mainly at frequencies higher than 1 kHz with a maximum between 10 and 100 kHz. The effect of deformation is concentrated into frequencies between 1 and 100 kHz. The effect of deformation on the permittivity values can be divided into reversible and irreversible parts. The results obtained in the loading/unloading tests give some more information on the proportion of both parts.

Keywords:

soft plant tissue; conductivity; permittivity; frequency; deformation; reversibility

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