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CREEP-RECOVERY BEHAVIOR FOR EIGHT DATES CULTIVARS AT TWO DIFFERENT MATURITY STAGES

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ABSTRACT

Creep-recovery characteristics of some selected Saudi dates cultivars, namely *Barhi, Khudari, Khlass, Serri, Sukkari, Suffri, Saqie*, and *NubotSaif* were investigated at two maturity stages that is, Khalal and Rutab. The results revealed the significant effect of date cultivar and stage of maturity on the creep-recovery behavior for the dates. At the end of creep period, the strain values ranged from 0.02-0.09 mm/mm for *Saqie* and *Barhi* cultivars, respectively at Khalal stage, and from 0.36-0.64 mm/mm for *Saqie* and *Khlass* cultivars, respectively at Rutab stage. Burgers four-element model was used to predict experimental data and it was highly satisfactory in predicting experimental data with determination coefficients ranged from 0.920- 0.994. *Barhi* cultivar showed great susceptibility for deformation and medium ability to recover it regardless of its high toughness.

KEYWORDS: Viscoelastic, Creep-Recovery, Date Cultivars, Burgers Model, Maturity Stage