

Viscoelastic behaviour of alginate texturized muskmelon (Cantaloupe) pulp

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■ **ABSTRACT** : A restructured muskmelon gel was formulated based on muskmelon pulp by alginate texturization for subsequent stabilization. Since the viscoelastic properties of the gel is important for processing, investigation was undertaken to study the influence of alginate on the gel like behaviour of muskmelon pulp. Experimental data from dynamic rheometric experiments showed that both storage modulus (G') and loss modulus (G'') at 25°C of restructured pulp were higher than the nonrestructured pulp; statistical evaluation ($P < 0.05$) indicated G' values were significantly higher than G'' at all the frequencies tested. This implied that solid like properties were predominant. In addition low positive values of the slope of both moduli exhibited weak gel like properties for both the samples. The addition of sodium alginate and calcium to the pulp formed a complex increasing the firmness of muskmelon pulp. Effect of temperatures tested in the range of 25 to 85°C showed that the values of G' or G'' were increasing for both the sample. Maximum storage modulus for both the samples was obtained at 85°C at any particular frequency. It may be concluded that addition of calcium/alginate complex increased the firmness of muskmelon pulp and changed its viscoelastic properties.

■ **KEY WORDS** : Viscoelastic, Muskmelon, Restructured, Frequency sweep, Storage modulus, Loss modulus, Temperature effect

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