Process development of bottle gourd sweetmeat by microwave heating: Changes in rheological, textural, sensory and morphological parameters

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Process development of bottle gourd sweetmeat by microwave heating: Changes in rheological, textural, sensory and morphological parameters.

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Abstract

The effect of replacement of khoa-sugar mixture in bottle gourd sweetmeat (BGSM) with varying proportions of bottle gourd pomace (BGP) was studied. Rheology of preliminary mix, used for preparation of bottle gourd sweetmeat, was studied in order to predict the behaviour of final product under different processing conditions. Results showed that increase in temperature beyond 30°C caused increase in elasticity (G') of mix whereas decrease in temperature showed increase in viscosity (G"). Microwave heat dissipation process revealed that samples microwaved at low power (700W) caused increase in temperature from 80°C in 1 min to 112°C in 5 min. Sweetmeat was heated until total solid content reached 85%. Heating time varied as a function of BGP and highest heating time of 5.32 min was required for BGSM containing highest BGP concentration (40%). Significant ($p<0.05$) increase in hardness was observed with incorporation of BGP (2.11-3.49N) and maximum hardness was observed in BGSM containing 40% BGP. Overall