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Effect of infrared heating on the infestation control of Bengal gram dhal (*Cicer arietinum*)

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Studies were undertaken to check infestation in Bengal gram dhal through IR treatment. Bengal gram dhal (un-tempered) and the one tempered to 15% moisture were IR treated at 200, 250, 300, 350, 400° C, cooled & packed in PP pouches, stored at ambient and 37° C. After IR treatment, moisture content in un-tempered and tempered samples decreased by 18.74 & 12.44% respectively with respect to raw samples. Initially and periodically, IR treated (tempered & un-tempered) along with untreated samples were analyzed for bulk density, hectoliter weight, 1000 kernel weight, water and oil absorption capacity, changes in uric acid and rheological changes. No major rheological changes were observed in the IR treated samples, except, the one treated at 400° C which showed significant changes in the pasting temperature, set back and breakdown viscosities. Untreated tempered dhal developed fungal growth after 1 month of storage while tempered IR treated ones spoiled microbially within 3 months of storage with no sign of infestation. Untreated and IR treated dhal at 200 and 250° C showed infestation after 3 & 6 months of storage respectively. Samples treated at 300, 350 and 400° C were found infestation free during 12 months of storage and their uric acid content was found within the permissible limit (<10 mg/100 g). Slight decrease in bulk density, hectoliter weight and 1000 kernel weight was observed during storage. IR treatment of dhal at 300 & 350° C can be used efficiently to check infestation of Bengal gram dhal with an extended shelf life of 12 months.

Biography

Neha Negi has completed her Graduation in Food Technology from University of Delhi. She is currently working as a Senior Technical Assistant 'B' in the Cereals and Pulses Technology Division of Defense Food Research Laboratory, DRDO (Ministry Of Defense), Mysore for the past two years.

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