

## Assessment of milk clotting activities of plant latex

■ UPASANA, ARCHANA CHAKRAVARTY, ADYA CHATURVEDI AND Y.B. TRIPATHI

Received: 20.04.2013; Revised: 24.08.2013; Accepted: 18.09.2013

See end of the paper for  
authors' affiliations

### UPASANA

Department of Home Science  
(Food and Nutrition) Banaras  
Hindu University, VARANASI  
(U.P.) INDIA  
Email: me.upasana87@gmail.com

■ **ABSTRACT** : A number of proteolytic enzymes are widely employed in food industries for cheese manufacture. The coagulant which is widely used in cheese production or manufacturing of cheese is animal rennet, which contains chymosin, an aspartic protease which is responsible for milk clotting. Thus, there's a need for the identification of a milk clotting enzyme from other sources that can meet the industrial demand of rennet. In this context, the present investigation was carried out in order to extract a milk clotting enzyme from different plant sources which can be utilized in cheese production. Three plants, *Carica papaya*, *Euphorbia splendens* and *Musa paradasica* belonging to the families Annonaceae, Euphorbiaceae and Musaceae were examined for the presence of proteinases in the present study. The proteinase activity was estimated by determining the milk clotting property of crude latex by identifying specific activity through their partial purification. The results indicated that *Carica papaya* plant latex had the highest milk clotting activity ( $2006.20 \pm 3.77$  U/ml) than *Musa paradasica* ( $187.19 \pm 4.44$  U/ml) and minimum in *Europhorbia splendens* ( $105.20 \pm 4.15$  U/ml) ( $p = 0.01$ ). SDS-PAGE analysis of the plant latex exhibiting maximum milk clotting activity displayed 5 bands ranging from 14.3 KD to 97.4 KD.

■ **KEY WORDS** : Milk clotting enzyme, SDS-PAGE, Plant latex, *Carica papaya*, *Musa paradasica*, *Euphorbia splendens*

■ **HOW TO CITE THIS PAPER** : Upasana, Chakravarty, Archana, Chaturvedi, Adya and Tripathi, Y.B. (2013). Assessment of milk clotting activities of plant latex. *Asian J. Home Sci.*, 8 (2): 456-460.