

DF09

# BOOK OF ABSTRACTS

## 4<sup>th</sup> International Dietary Fibre Conference 2009

1 - 3 July 2009, Vienna, Austria  
Schönbrunn Palace



International Association for  
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**We would like to thank all participants at the Conference  
for helping make this event such a big success!**

## A NOVEL HIGH ZERO SHEAR VISCOSITY FOOD HYDROCOLLOID FROM *OCIMUM BASILICUM* L. SEED

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*Ocimum basilicum* L. seed is cultivated in large quantities in different regions of Iran. This seed has been used in traditional medicine for a long time to treat colic ulcer, dyspepsia, diarrhoea and inflammations, amongst others<sup>1</sup>. Because of these interesting properties, nowadays in Iran basil seeds are used to make drinks (Sharbat) and icy products (Faloode) full of dietary fibre. This seed has reasonable amounts of gum (soluble and insoluble fiber) with promising food functionality. Early studies<sup>2,3</sup> have explored some chemical and physical properties of this gum as well as the extraction optimization conditions. The aim of our current work was to study the rheological properties of the gum extracted from *Ocimum basilicum* seed-basil seed gum (BSG) (0.1-2% wt/wt) and to compare it with some commercial food hydrocolloids such as Xanthan, Konjac and Guar gum.

A controlled stress rheometer was used in rotational and oscillatory mode. Time-independent rheological models such as Power law, Herschel-Bulkley and Casson were used to fit steady shear flow behavior data. Flow behavior index ( $n$ ), consistency coefficient ( $k$ ) and yield stress of BSG solutions which are important in food formulations were determined.

BSG showed higher zero-shear viscosity than xanthan at the same concentration which is reflected on a higher suspension ability. This is a key element in the development of salad dressings and sauces. Moreover, the gel-like mechanical spectra of BSG showed higher viscoelasticity than xanthan under the same conditions. Based on the flow behavior index ( $n$ ), and consistency coefficient ( $k$ ), BSG showed a high degree of shear thinning which is usually related to a non-slimy sensation in mouth compared to other hydrocolloids such as CMC, pectin and carrageenan. Further studies on the functionality of this novel gum are required.

**Keywords:** basil seed, gum rheology, zero-shear viscosity

### References:

- (1) Naghibi, F., Mosaddegh, M., Motamed, S. M. & Ghorbani, A. (2005). Labiatae family in folk medicine in Iran: from ethnobotany to pharmacology. *Iranian Journal of Pharmaceutical Research*, 2, 63-79
- (2) Anjaneyalu, Y.V. & Tharanathan, R.N. (1972). Polysaccharides from the seed mucilage of *Ocimum basilicum* L., *Current Science*, 41, 214.
- (3) Razavi, S.M.A., Mortazavi, S.A., Matia-Merino, L., Hosseini-Parvar, S.H., Motamedzadegan, A. and Khanipour, E. (2008). Optimization study of gum extraction from Basil seeds (*Ocimum basilicum* L.). Accepted in *International Journal of Food Science & Technology*.