

Extraction and Characterization of Latex and Natural Rubber from Rubber-Bearing Plants

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J. Agric. Food Chem., 2010, 58 (2), pp 734-743

DOI: 10.1021/jf903096z

Publication Date (Web): December 9, 2009

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 Section:

Synthetic Elastomers and Natural Rubber

Abstract

Consecutive extraction of latex and natural rubber from the roots of rubber-bearing plants such as *Taraxacum kok-saghyz* (TKS), *Scorzonera tau-saghyz* (STS), and *Scorzonera Uzbekistanica* (SU) were carried out. Latex extraction was carried via two methods: Blender method and Flow method. The results of latex extraction were compared. Cultivated rubber-bearing plants contained slightly higher latex contents compared to

those from wild fields. Several creaming agents for latex extraction were compared. About 50% of total natural rubber was extracted as latex. The results of the comparative studies indicated that optimum latex extraction can be achieved with Flow method. The purity of latex extracted by Blender method (~75%) was significantly lower than that extracted by Flow method (99.5%). When the latex particles were stabilized with casein, the latex was concentrated significantly. Through concentrating latex by flotation, the latex concentration of 35% was obtained. Bagasse contained mostly solid natural rubber. The remaining natural rubber in the bagasse (left after the latex extraction) was extracted using sequential solvent extraction first with acetone and then with several nonpolar solvents. Solid natural rubber was analyzed for gel content and characterized by size exclusion chromatography (SEC) for molecular weight determinations. SEC of solid natural rubber has shown that the molecular weight is about 1.8E6 and they contain less gel compared to TSR20 (Grade 20 Technically Specified Rubber), a commercial natural rubber from *Hevea brasiliensis*.

Keywords (keywords):

***Taraxacum kok-saghyz* (TKS); *Scorzonera tau-saghyz* (STS); *Scorzonera Uzbekistanica* (SU); natural rubber; latex; extraction; size exclusion chromatography; gel content**

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3. Delia Spanò, Francesca Pintus, Claudia Mascia, Mariano Andrea Scorciapino, Mariano Casu, Giovanni Floris, Rosaria Medda *Biopolymers* **2012**, *97* (8), 589-594 [[CrossRef](#)]