TITLE	A STUDY ON THE EFFECT OF AMMONIA ON STABILITY OF NATURAL RUBBER LATEX : ORIGIN OF LONG-CHAIN FATTY ACID SOAPS
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ABSTRACT	Natural rubber (NR) latex derived from a *Hevea brasiliensis* tree is a colloidal suspension of rubber particles. The surface of NR particles is covered with a non-rubber layer of proteins and phospholipids. It plays an important role in controlling stability of the particles. Apart from the mixed layer, preservation of the latex with ammonia can also enhances the stability of the NR particles. An additions of ammonia results in a hydrolysis of phospholipids to produce long-chain fatty acid (LCFA) soaps. It was expected that these soaps could improver stability of the latex by stabilization on NR particles with negative charge. However, the details of hydrolysis have not yet been understood whether the LCFA soaps were derived from the ammonia-catalyzed hydrolysis of phospholipids ionically linked to NR molecule, phospholipids adsorbed on a surface of NR particles, or free phospholipid and free lipids suspended in the serum. Therefore, the aim of this work was to investigate the origin of LCFA soaps and hydrolysis of phospholipids during storage under an ammonia environment. The relationships between higher fatty acid (HFA) number, mechanical stability time (MST) and zeta-potential with storage time were used to investigate the effect of LCFA soaps on stability of NR latex. The stabilization of the LCFA soaps on the NR particles was confirmed by a fluorescent labeling technique. The extent of hydrolysis was followed by monitoring by fluorescent intensities of the labeled LCFA soaps on the NR particles and phosphorus content in NR latex. The ester contents of phospholipids linked to NR molecules and those of adsorbed on the mixed layer surface were used to identify the origin of hydrolysis. The chain length of LCFAs were characterized by a gas chromatograph-mass spectroscopy (GC-MS). In addition, the effect of LCFA soaps on film formation was observed by atomic forced microscopy (AFM) at different storage times of latex. It was found that the stability of the NR latex increased with the amount of the LCFA soaps during storage. The hydrolysis of phospholipids took place on those adsorbed on the

	non-rubber layer of NR particles. The unsaturated LCFA soaps were found to have an impact on enhancing stability of NR latex. Furthermore, the increase of LCFA soaps also increased the roughness of NR film.