

CLONAL VARIATION IN LIPID COMPOSITION IN THE LATEX OF *HEVEA BRASILIENSIS* AND ITS IMPLICATION IN LATEX PRODUCTION

Hevea latex is a hydrosol in which the dispersed particles are strongly protected by a complex film containing proteins and lipids (Hebant, 1981). Since many properties of the dispersed systems are controlled by the composition and structure of their interface with the dispersing medium, studies on the interfacial film of rubber particles and lutoids are of great importance as far as the colloidal behaviour of latex is concerned. The first attempt to assess the quantity of major lipids in the rubber phase as well as in the bottom fraction (mostly lutoids) of *Hevea* latex and its clonal variation was made by Ho *et al.* (1976). They suggested possible inverse relationship between triglycerides associated with rubber particles and plugging index. Sherief and Sethuraj (1978) also reported a similar relationship. Studies on the lutoid membrane by Jacob *et al.* (1976) revealed that the major proportion of phospholipids present in the lutoid membrane is phosphatidic acid which confers on them a highly electronegative charge required to maintain the colloidal stability of latex. Hasma and Subramaniam (1986) made a detailed study of the lipid composition in latex of clone RRIM 501.

Comparative studies on the composition of lipids in the latices of high and low yielding clones of *H. brasiliensis* are scanty. In view of this, a study was made to compare the concentration of various lipids in the rubber cream and bottom fraction of

some high yielding and low yielding clones.

Six trees each of clone RR11 105 and PB 235 representing high yielders and Ch4 and Pil B84 representing low yielders were selected from a statistically laid out clone trial at Central Experimental Station of the Rubber Research Institute of India. Latex samples from individual trees were collected in ice, brought to the laboratory immediately and centrifuged at 18,000 rpm for 45 minutes to separate rubber phase, C-serum and bottom fraction. Total lipids were extracted from the rubber cream and bottom fraction by the method of Bligh and Dyer (1959) and estimated gravimetrically. Total lipids were separated by silicic acid column chromatography into neutral lipids, glycolipids and phospholipids and glycolipids, phospholipids and triglycerides were estimated according to Hasma and Subramaniam (1986). Sterols were estimated by the method of Abell *et al.* (1952).

Phospholipids of the bottom fraction and triglycerides of the rubber cream were also estimated in another five clones, three (PB 215, PB 217 and GT 1) representing high yielders and two (Tjir 16 and Ch 29) being low yielders. Plugging index, bursting index and dry rubber content were observed in all the nine clones.

Table 1 shows that the concentration of total lipids, triglycerides and sterols of the rubber cream was significantly higher