

## STUDIES ON COPPER SOAP OF RUBBER SEED OIL AS PEPTIZER FOR ESTIMATION OF DIRT CONTENT IN NATURAL RUBBER

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Dirt content is one of the important quality parameters specified in the grading of technically specified rubber (TSR). It is estimated by dissolving rubber in a solvent with the aid of a peptizer, such as copper oleate and then determining the weight of dry matter retained on a standard sieve, when the solution is filtered. The performance of copper soap of mixed fatty acids, prepared from rubber seed oil, was evaluated for the estimation of dirt content of TSR in comparison with that of copper oleate. The results indicated that mixed fatty acid soaps of copper prepared from rubber seed oil is as good as copper oleate for the purpose and is a cheaper alternative.

**Key words :** Dirt content, Peptizer, Rubber seed oil, Technically specified rubber.

### INTRODUCTION

The seeds of rubber tree (*Hevea brasiliensis*), the major source of natural rubber, have been found to be rich in oil (Potty, 1980; Haridasan, 1992; Thomas *et al.*, 1996). Rubber seed is an important by-product obtained from rubber tree and it contains about 65 per cent kernel and 35 per cent shell (Pillai and Wijewantha, 1967). The dried kernel contains about 42 per cent oil (Pickles *et al.*, 1911; Azeemoddin and Rao, 1962; Uzu *et al.*, 1986; Attah *et al.*, 1990), which is extracted by expulsion process. Fresh rubber seed oil (RSO) is a light yellow coloured semidrying oil, and contains about 18-22 per cent saturated and 78-82 per cent unsaturated higher fatty acids (Bressani *et al.*, 1983).

There are many industrial applications for RSO. It is used for the production of factice (Vijayagopalan, 1971). Epoxidised

rubber seed oil (ERSO) (Vijayagopalan and Gopalakrishnan, 1971) is used in formulations for anticorrosive coating, adhesive and for alkyd resin coating (Aigbodion, 1994). Properties of RSO resemble linseed oil and hence has a strong potential for replacing linseed oil, wholly or partially, in alkyd resin production (Aigbodion, 1991). Use of RSO, ERSO and its lead and barium soaps as heat stabilizers for PVC has been reported from Nigeria (Okieimen and Ebhoaye, 1992, 1993). RSO and ERSO can be used in natural rubber compounds for improving their processability and physico-mechanical properties (Aigbodion *et al.*, 2000). RSO contains higher fatty acids and can be used for the preparation of soap (Haridasan, 1977).

Quality of technically specified rubber (TSR) is related to both processing and technical parameters. Wallace initial plas-