

EFFECT OF STORAGE OF SEEDS ON QUALITY OF RUBBER SEED OIL

The conventional use for rubber seed in all rubber growing areas is as planting material (Udomaskdhi *et al.*, 1974 and Ghani *et al.*, 1976). In Nigeria, the high cost of importing raw materials required in industry has compelled industrialists to source their raw materials locally. Thus rubber seed which was found to contain as much as 42.54 per cent of oil with good drying characteristics (Uzu *et al.*, 1986) assumed industrial importance.

Small scale extraction of rubber seed oil has been reported in Sri Lanka (Nadarajah *et al.*, 1973) where the oil was recognized as a potential substitute for linseed oil in the manufacture of alkyd resins and suitable in soap making. Nair *et al.* (1981) have reported complete substitution of rubber seed oil for linseed oil or dehydrated castor oil in the preparation of air-drying medium-oil alkyd resin and 80 per cent substitution in long oil alkyd resin.

Initial studies on commercial utilization of rubber seed revealed that the seed is highly susceptible to damage on storage (Otoide and Begho, 1986). The extent to which the quality of the oil contained in the seed is affected, gives an insight into the proper mode of storage and eventually the prospect of industrial utilization of rubber seed oil. This work is, therefore, aimed at determining the effect of seed storage on oil quality.

Rubber seed oil samples used were extracted by mechanical expression in Rub-

ber Research Institute of Nigeria mill. Sample 1 was extracted from rubber seeds which were dried and stored under ambient conditions for a period of one year while sample 2 was extracted from fresh seeds of the same year after drying. Both samples were filtered by passing through filter presses. Analysis of the oil samples was carried out in conformity with the British Standard Methods of Analysis of Oils and Fats BS 684 (1976). Fatty acid composition of the oil samples were determined by GLC (Pye Unicam, Model 104).

Properties of the two oil samples are shown in Table 1 while the fatty acid composition is shown in Table 2.

The colour of the oil extracted from fresh seed is brighter than that extracted from stored seed (Table 1). This difference in colour of the oil samples could be attributed to degradation of the oil upon storage of seed since damage of oil is manifested as off-colour, off-odour and increase in free fatty acid.

In Table 1, the free fatty acid content of sample 1 is found to be more than double that of sample 2. Enzymatic breakdown of rubber seed oil during storage of seeds is accounting for this high level of acidity in oil extracted from stored seeds (Nadarajah *et al.*, 1973).

Peroxide value, which is a measure of deterioration, also shows that the oil deteriorates in quality during storage of the seed.