

B-50: Study of possibility of converting natural rubber serum into a fertilizer of slow release type

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Natural rubber serum (NRS) of rubber effluent is a by-product of the NR processing industry. NRS is a rich source of both organic and inorganic matter, comprising acids, ammonium salts, proteins, carbohydrates, lipids, trace elements and derivatives of these various components. Considerable amounts of rubber effluent are produced by NR processing factories and usually discharged into the surrounding areas with or without treatment. They are known to cause environmental pollution problems in rubber growing areas when discharged without treatment. NR processing factories in Sri Lanka are known to discharge about 100,000 MT of rubber factory effluent annually.

Possible conversion of Natural Rubber Serum (NRS) into a fertilizer of slow release type was investigated. Addition of NRS to soil, was found to immobilize soil N for a short period. Higher doses of NRS or the use of a carbon source such as sugar or wheat straw to increase the C:N ratio was found to immobilize N for longer periods. Immobilization of $\text{NO}_3\text{-N}$ was accompanied by a significant increase in soil pH depending on the level of NRS treatment or C:N ratio. Making slow release fertilizers through immobilization of N by increasing the C:N ratio appears to be a

relatively easy and affordable method. Use of waste products such as sugarcane pulp, paddy straw or coir dust as carbon source is suggested. Use of cation absorbants such as zeolites is another alternative.

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