

**OCCURRENCE OF ENDOTROPIC MYCORRHIZA IN RUBBER**  
(*HEAVEA BRASILIENSIS* MUELL. ARG.)

The occurrence of endotropic mycorrhizal association with roots of crop plants has been reported for a number of crop plants (Mosse, 1953; Nicolson, 1959; Dowding, 1959; Gerdeman, 1968). Association of mycorrhiza is known to improve the growth and general conditions of crop plants (Mosse, 1957; Bayalis, 1959). In India, vesicular—arbuscular (VA) mycorrhizal association has been reported on a number of crops including coconut (Lilly, 1975) and tuber crops such as tapioca (Potty, 1978). Results of a preliminary study on the occurrence of VA mycorrhiza in rubber, made at the Plant Pathology Department, College of Agriculture, Vellayani, Kerala, is reported in this paper.

Rubber plants of the plantation attached to the Instructional Farm, College of Agriculture, were used for the study. Root systems of ten plants selected at random in the plantation were exposed and samples of root, about 0.5 to 1 mm diameter, were collected. These samples were washed thoroughly to remove any adhering soil particles and other materials. They were then cut into small bits of about 1 cm in length and stained with trypan blue according to the procedure detailed by Philips and Hayman (1970). Twenty stained root bits were taken at random from each sample and scanned under the microscope for the presence of any mycorrhizal association. The positive cases were recorded and the percentage of VA mycorrhizal association calculated for each sample (Table 1).

Table 1

Occurrence of vesicular—arbuscular (VA) mycorrhiza in rubber roots collected from different locations of the rubber plantation of the College of Agriculture, Vellayani, Kerala

Sample No.	Observation on the presence or absence of VA mycorrhiza	Percentage infection
1	present	25
2	present	15
3	mycelium alone	—
4	present	60
5	absent	—
6	absent	—
7	present	65
8	absent	—
9	present	20
10	present	35

From the data presented, it is clear that rubber plants also harbour the VA mycorrhiza in its roots. Typical VA mycorrhizal association was observed in root

samples collected from six locations (Fig. 1) while one sample showed the presence of extensively branched mycelium without any vesicles or arbuscules. The vesicles showed wide variation in the size and shape. The per cent of infection varied in different samples from a minimum of 15 to a maximum of 65. The variation observed in the size and shape of the vesicles may be due to the presence of more than one organism in the association. The mycelial growth alone observed may be due to infection by pathogenic soil organisms or by some *Endogone* sp., such as *Endogone calotropa* and *Endogone gigantia* which are known to be non-vesicle formers inside roots (Gerdeman, 1968). Thus the absence of mycorrhiza in some locations and the high variation in the percentage of occurrence point to the scope for further detailed studies on mycorrhiza! association in rubber roots.

#### സംഗ്രഹം

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Fig. 1. Typical vesicle observed in rubber root (x 400)

