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Response of root trainer plants of rubber to different potting media

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Root trainer plants, the recently introduced of planting material of rubber (*Hevea brasiliensis*) has gained wide acceptance due to its unique advantages over earlier planting materials such as absence of coiled tap root, well developed lateral root system, easy transportation and field planting etc. The long pending issue of root architecture modification of the planting material of Hevea was achieved using root trainer plants with the expected advantages of strong root establishment for better anchorage and uptake of soil resources from deeper strata in the soil. The root modification was achieved by allowing the air pruned roots at the drainage hole of the root trainer cup to grow into a root elongation tube (RET) filled with coir pith as potting medium, which is fitted to the lower part of the cup. The intact root core developed is characterized by 10-12 stiff vertical roots, laterals and large number of fine roots. As the coir pith has certain disadvantages, a study was conducted using both natural (coir pith, red and black soil) and synthetic materials (PVC dust, thermocoal and tyre dust) as alternative potting medium in the RET. The air pruned roots characterized by callus tissue are under severe stress and showed a faster root elongation when it comes in contact with a media to which the root can grow. After two months, the highest value for root core was recorded for coir pith as potting medium (50.8cm) followed by PVC dust (25.3), thermocoal (24.7), black soil (19.9), red soil (18.9) and the least value for tyre dust (13.6). The root core is characterised by an average of nine strong vertical roots and laterals but in the tyre dust only vertical ones were developed. Highest value for the diameter of the root was observed in the tyre dust (2.95mm) followed by red soil (2.85), coir pith (1.95) and the least by PVC dust (1.65). Shoot growth remains the same in all the treatments. Root anatomy of the tap root and the vertical roots those developed into the RET are identical and differ from the lateral roots. The results obtained by using synthetic materials as potting medium for rubber is encouraging which needs further investigations so that the environmental problems created by these materials can be solved to a great extent by their effective utilisation.

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