

### **Isolation and Selection of Beneficial Fungi from Rubber-Growing Soils with Special Reference to Wood Degradability**

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In rubber, continuous cultivation is known to deplete soil nutrients, thus leading to soil degradation. Green matter and litter production of cover crops increase organic matter content in rubber growing soils leading to better soil fertility. The activity of decomposing fungi plays an important role in the process of enhancing soil fertility status. An attempt was taken to isolate and evaluate effective fungal decomposers in rubber-growing soils that could improve soil fertility in rubber plantations. The isolates were obtained from decaying rubber wood samples in five rubber plantations in Kalutara district. Pure cultures of seven morphologically different isolates (numbered as F1, F2, F3, F13, F16, F18 and F19) were selected and grown on Potato Dextrose Agar. To compare the wood degradability, rubber root pieces with pencil thickness and 5 cm length were cut and oven dried until a constant dry weight was obtained. Two feeder root pieces were inoculated with a 4 cm<sup>2</sup> mycelium plug of each isolate in a conical flask. After 20 days, another two root pieces were added into each flask as testing strips. After 12 weeks, loss of percentage dry weight loss of the testing strips was calculated after removing the growing mycelium carefully in each wood block. Isolates F1 and F2 showed the highest percentage weight loss (45.7% and 40.0%, respectively) indicating their higher potential in wood degradability. Isolates F3, F13, F16, F18 and F19 showed 11.3%, 15.7%, 12.8%, 13.1% and 21.5%, respectively. As the saprophytic fungi causing more than 30% weight loss are considered as good decomposers under prescribed experimental conditions, isolates F1 and F2 can be identified as beneficial decomposers which degrade organic materials fast and convert them into nutrients. We recommend mass production of these two fungi and introduction to the rubber plantations as effective decomposers. Further, molecular identification of these isolates are recommended.

**Keywords:** Rubber plantations, Wood degradability, Saprophytic fungi, Mass production

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