

TREE INOCULATION EXPERIMENT WITH THREE STRAINS
OF *FOMES DURISSIMUS* LLOYD TO THEIR RESPECTIVE
HOSTS

Although great interest is attached to the question of tree inoculation, the literature in this field of research is meagre. Field inoculations on living trees were made to investigate the progress of infection within the host tissues under natural conditions. The present inoculation experiment was designed following mainly the method described by Banerjee (1955) with three strains of *Fomes durissimus* isolated from *Swietenia mahogani*, *Casuarina equisetifolia* and *Mimusops elengi* to their respective hosts.

To obtain evidence under natural conditions inoculations were made in plants of five-years-old of aforesaid host species purchased from the forest department under Burdwan District and planted in the adjoining garden of the Department of Botany. During inoculation, the surface of the bark was made free from contamination as far as practicable with absolute alcohol and finally washed with sterile distilled water. Five inoculations were made with each fungus and with equal number of controls. During this operation a cross-incision was made with the help of sterilized scalpel through the bark on the trunk. The inner tissue was exposed by carefully lifting the free ends of the cut tissue. The trees were then inoculated by transferring actively growing mycelium into the wound, covered with the flap of the bark still attached to it. A protecting pad of sterile moist absorbent cotton was placed over the flap covered with non-absorbent cotton to prevent drying out, then wrapped with an oil paper and finally bound firmly with a string. After one month the trees were examined by removing the string and cotton wool and it was found that all the three host species under conside-

ration showed development of infection. The inoculated areas exhibited considerable bulging out with eminent secretion of gums particularly in case of *S. mahogani*. The controls, on the other hand, remained flat, somewhat depressed and there was very poor secretion of gum. Further inspection after eight months showed that in all cases the controls remained flat and healing up was satisfactory. In *S. mahogani* and *C. equisetifolia* the wounds were gaping open, looked more or less swollen, somewhat spindle shaped and there was copious gum like secretions. In case of *M. elengi* the wounds also looked somewhat oval and the gummosis was vigorous. From the outward indications it could be said that all the three strains of the test-fungus caused infection in their respective hosts through wounds. At this time no fruiting bodies of the test fungus were observed since all the strains were slow growers within the host tissues. The internal conditions of the inoculated areas were microscopically examined. Mycelia of the test-fungi were found to be present in the wood elements. Copious gum formation was observed within the medullary rays possibly for defence of the host plants. The mycelia was found to spread approximately 10 cm above and below the point of infection. Spread in the transverse direction was about 3 millimeter. Subsequent re-isolations of the pathogen from infected tissues agreed with the original cultures of the three respective strains of *F. durissimus* in all essential details.

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REFERENCES

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