Short Communication

Root Rot of Sandal Wood Seedlings and Its Management

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Sandal wood, *Santalum album* L. contains fragrant oil in the scented heartwood which is sold by weight, and perhaps it is the most precious wood in this part of the world (Troup 1921). However, Bangladesh imports sandal wood for commercial purpose. Recently, the Bangladesh Forest Research Institute had undertaken research work on the silvicultural aspects of this species to help raise its commercial plantations. The Forest Department has undertaken an afforestation project with this species. As a consequence, hundreds of seedlings were raised in polybags in January, 1993. A serious root rot disease was observed in late February of the same year.

The typical symptom of the disease was manifested through the gradual browning of the leaves of the seedlings. Brown spots appeared first on the branch and tap roots, which later turned black. The leaves of the infected seedlings lost their freshness and began to die out with the stem standing erect. The disease caused 50% mortality of the seedlings within 3-5 days. One fungus, *Fusarium moniliformae* Sheld. was consistently isolated from the samples. A pathogenicity test confirmed that the fungus was the pathogen of the root rot.

The root rot of sandal wood seedlings was successfully controlled by the use of Dithane M-45 @ one gram/l of water. The fungicidal mixture was sprayed over the diseased and healthy seedlings in such a way that the mixture could reach the root system. A second spray was applied after an interval of one week. Arrangerments were also made for allowing sufficient light on the seedlings for about six hours a day.

This disease is a new record on sandal wood in Bangladesh. Although root rot is a common phenomenon in our forest nursery, the disease was indeed a serious one. No report of such kind of root rot is available. Excess moisture causes damping-off to the sandal wood seedlings (Troup 1921). However, it was not a case of damping-off. *F. moniliformae* is mainly a soilborne fungus which can cause leaf blight of maize, foot rot of rice and mango floral malformation (Rangaswami 1988). It also causes pre-and post-emergence seedlings blight of maize (Baruah *et al.* 1985). Rahman *et al.* (1980) isolated *F. moniliformae* from agar, *Aquillaraia agallocha* tree. The fungus can survive in soil for a long period, and is found in fields having general deficiency of water (Singh 1983). In Bangladesh, January and February are the months of dry and cold period of the year. So, this may be the favourable time for its sporulation and infection in our country.

References

Baruah, H. K.; Baruah, P. and Baruah, A. 1985. *Text Book of Plant Pathology*. Oxford & IBH Publishing Co., New Delhi. 451 pp.

Rahman, M. A. and Basak, A. C. 1980. Agar production in agar tree by artificial inoculation and wounding. *Bano Biggyan Patrika* 9 (1 & 2) : 87-93.

Rangaswami, G. 1988. *Disease of Crop Plants in India* (3rd ed.). Prentice-Hall of India Private Ltd., New Delhi. 95-390 pp.

Singh, R. S. 1983. *Plant Disease*. Oxford & IBH Publishing Co., New Delhi. 425-429 pp.

Troup, R. S. 1921. *The Silviculture of Indian Trees-Vol. 3*. Clarendon Press, Oxford. 799-819 pp.