DEPARTMENT OF FORESTRY · CANADA ·

Timber Talks

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RAPID MYCOLOGICAL IDENTIFICATION

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Taxonomic studies and investigation concerned with infection processes of fungal parasites of coniferous needles frequently require sectioning of the material. This is easily accomplished if the needles are fresh, but is extremely difficult when they are dry. To facilitate the technique, dried needles have been boiled in distilled water prior to cutting with a hand microtome or embedded in paraffin before sectioning. Neither method has been wholly satisfactory. A technique used by another investigator has proven much more satisfactory, and is described.

Satisfactory temporary slides of Douglas-fir needles infected with the fungus Rhabdocline were obtained by cutting needles to desired length and soaking them in distilled water with a drop of Aerosol added, for 30-60 minutes. Tissues were then infiltrated for one hour in a 1:1 solution of water and Lepage's mucilage, mounted on a microtome chuck, and frozen on a cold bar of a Cryostat at - 15° C. The frozen needle lengths were cut with a microtome and sections rinsed in distilled water to remove the mucilage. Each section was floated on a drop of water on a glass slide and after the water was evaporated in a drying oven, the sections mounted in lactophenol cotton blue or lactophenol acid fuschin. Permanent stained mounts require a slight modification in the technique. Rinsed sections are floated on a drop of 4% formalin instead of water on a slide coated with Haupt's adhesive. After hardening the adhesive in a drying oven, the slides are immersed in absolute alcohol, dipped in thin collodion, air-dried, re-immersed in 70% alcohol and the specimen then stained.

The technique is simple and the sections uniform in thickness. Satisfactory temporary slides can be made in 2½ hrs; permanent mounts require additional time for staining. Minor modifications in the procedure may improve the results when preparing slides of other coniferous needles and fungal parasites. A longer period of soaking in distilled water and a higher cutting temperature is sometimes desirable; at other times, it is preferable to place the section on a pre-cooled slide with a cold dissecting needle and then permit the section and mucilage to dry at room temperature.

REPORT: A Rapid Method of sectioning Dried Coniferous Needles for Mycological Studies. S. H. Farris, Forest Research Laboratory, Victoria, B. C.