SCANNING ELECTRON MICROSCOPY AS A TOOL IN UNDERSTANDING HEMLOCK WOOLLY ADELGID BIOLOGY, FEEDING BEHAVIOR, AND HOST PLANT RESISTANCE

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ABSTRACT

Using scanning electron microscopy, details surrounding feeding mechanisms of the hemlock woolly adelgid (*Adelges tsugae* Annand) are studied in detail. Stylet bundles are inserted on the adaxial side of the hemlock needle, between the abscission layer and the stem and needle cushion junction. Sheath material, a gel-like material made by the salivary glands, is produced to surround the stylets. It is observed on the surface of the host plant and is known to be used internally. Sheath material is similar in size and form to fungal hyphae (also found on the host), but can be distinguished by the bead-like appearance. Future studies will include analysis of resistant and susceptible hemlock species and more investigation into sheath material presence, location, and function.