The Search for Pityophthorus juglandis and Associated Geosmithia morbida in Transylvania County, NC

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Geosmithia morbida, Thousand Cankers Disease (TCD), is a fungal pathogen that has been associated with the decline of the Black Walnut tree population across the United States. TCD is spread to the Black Walnut trees via a tiny bark beetle. This beetle is classified as Pityophthorus juglandis, but is more commonly known as the Walnut Twig Beetle (WTB). The WTB is about 2mm in length and resembles a dark brownish-red color. TCD is transferred when the WTB creates small tunnels known as galleries underneath the bark of the tree. TCD originated in the Western United States and has spread all the way to Haywood County, North Carolina. This study was conducted to determine if the WTB and/or Geosmithia morbida is present in Transylvania County. Pheromone baited traps were assembled and placed near Black Walnut trees in a broad area of Transylvania County. A control trap was placed in an area without Black Walnut trees. Collected insects were identified. From this collection, beetles of interest were chosen for interior and exterior fungal swabbing and DNA analysis. Two bark beetles were found to be from the same family as Pityophthorus juglandis. Fungus cultured from these beetles was a 94% DNA match for Geosmithia morbida. Pityophthorus juglandis was not collected in any of our trap locations. Although we can not state with 100% certainty that Pityophthorus juglandis has not migrated into Transylvania County, this experiment gives us some confidence that it has not moved to the portion of the county evaluated.

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