BLACK WALNUT (*Juglans sp.*)
Black Walnut Decline; *Geosmithia morbida*
(Thousand Canker Disease)

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Investigation of Black Walnut Decline (Thousand Canker Disease), 2009.

A group of 60 trees from 11 locations in the Willamette Valley have been monitored for disease development since 2007. A group of 51 trees, from 5 locations were original evaluated in 2007 while an additional 9 trees in 6 other locations were added to the set in 2008. The walnut twig beetle (*Pityophthorus juglandis*) was confirmed in each location, however, the pathogen (*Geosmithia morbida*) was only evaluated and confirmed in half the locations. Trees are assumed to be crosses of *Juglans niger* with *Juglans sp* from the southwestern USA such as *J. hinsii*. The amount of canopy with dieback symptoms was recorded in Sep 07, Sep 08 and Aug 09.

The original group of trees had 46 with dieback symptoms and 5 that appeared healthy in 2007. Canopy dieback in 07 ranged from less than 1% to 95%. Some active dieback was observed during the 2008 growing season but only a few small branches on a few trees. There was no significant progression of symptoms during the 2008 growing season.

During the 2009 season 16 trees had higher canopy dieback ratings, 32 had similar ratings and 11 trees had lower dieback ratings when compared to 2008 ratings. Of the trees that had higher ratings the average increase in dieback was 12.5%, ranging from 5 to 40%. Of the trees with lower ratings the average decrease was 9%, ranging from 2 to 15%. For those trees that could be compared back to 2007, 19 trees had higher canopy dieback ratings, 19 had similar ratings and 8 trees had lower dieback ratings. Of the trees that had higher ratings the average increases in dieback was 17.7%, ranging from 5 to 50%. Of the trees with lower ratings the average decrease was 7.5%, ranging from 5 to 10%.

Higher canopy dieback ratings are assumed to be attributed to thousand canker disease progression. Lower canopy dieback ratings are attributed to growth of living portions of the tree and the inherent error rate in rating from year to year. Based on these observations, disease progression in trees with thousand canker is a slow process in Oregon.

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