

VEGETATIVE GROWTH AND FRUITING CHARACTERISTICS OF BLACK WALNUT

Andrew Biggs

Dr. Michele Warmund, Thesis Supervisor

ABSTRACT

Three studies were conducted to evaluate sequential vegetative and fruiting characteristics of black walnut. 'Sparrow' vegetative shoots or those with one fruit were smaller in diameter than shoots with three fruits in 2009. Also, 2009 vegetative shoots were most likely to remain non-bearing in 2010. However, 2009 bearing shoots were equally likely to produce 0, 1, 2, or 3 nuts in 2010.

When crop yields for 15 cultivars were evaluated from 2008 to 2010, 'Bowser' and 'Elmer/Myer' produced low (≤ 378 nuts/tree), but consistent annual yields. In contrast, 'Emma K', 'Kwik Krop', and 'Sparrow' had high cumulative yields (≥ 3000 nuts/tree). Two cultivars exhibited a biennial bearing habit, while five cultivars had two consecutive low production years followed by high yields the third year. Also, 'Davidson', 'Emma K', 'Kwik Krop', 'Sparks 127', 'Sparrow', and 'Tomboy' were more yield efficient than 'Bowser' and 'Elmer/Myer' from 2008 to 2010. The incidence of ambers was similar among black walnut cultivars and averaged $\leq 7\%$ per tree.