Section, 6. Biology/Phenology

# HOST SUSCEPTIBILITY OF THE CHERRY BARK TORTRIX, *ENARMONIA FORMOSANA* SCOP. (LEPIDOPTERA: TORTRICIDAE)

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***Host range and preference***

All known Rosaceous tree species were investigated for CBT in Whatcom County. *Crataegus* species are new to the literature for known CBT hosts. Host preference was determined by sampling 30 representative trees of each species or genera. CBT densities were determined by measuring 1000 $cm^2$ of tree surface area and counting the number of frass tubes found in that area. Species found in *Prunus* are still the most preferred host. *Malus* is much more infested than what was previously thought, while *Pyrus* is currently an unsuitable host. With in *P. serrulata*, a variety preference was found. 'Mount Fuji' Oriental flowering cherries (average CBT density per 2000 $cm^2$ = 28.86) are much more susceptible to attack relative to 'Kwanzan' cherry trees (average CBT density per 2000$cm^2$ = 17.51).

***Host age, size and condition survey***

From data we obtained in 1996, there is a rough correlation between CBT density and tree size, which is indirectly related to tree age. CBT has always been associated with older trees. From field observations, it was noticed that CBT exploits trees with open wounds or many natural openings (grafts, lenticels and infections) to the underlying cambium tissue. We believed that age might not be sole preference factor for CBT infestations but opportunities for entrance to the tree is more pertinent. Tree age will be indirectly related to the number of opportunities; the older the tree, the more chance that it has been affected by the environment. 243 trees (64 Mount Fuji and 179 Kwanzan)of different ages, sizes and conditions of the oriental flowering cherry (*P. serrulata*) were surveyed and correlated to CBT densities. The number of opportunities for CBT to infest a tree was scored qualitatively by measuring the opportune sites. An opening in the bark of 5 cm warranted a score of 1. The score and CBT densities were evaluated for each tree in a 2000 $cm^2$ area. Tree circumference was measured at breast height and tree age was estimated by core sampling techniques. Tree age estimates were made by counting individual growth rings along the core plug until the center of the tree was reached. There is a good correlation between tree age and size ($r^2$=0.8875). There is little correlation between tree size, age and CBT densities, as was observed in 1996. However, the correlation between opportunity scores and CBT density is much higher ($r^2$=0.574). This trend is consistent with in *P. serrulata* for both varieties. The cause for the greater susceptibility of Mount Fuji is found in the number of opportunities available for CBT infestation. Bark thickness was correlated with tree size and age but had little correlation with CBT densities ($r^2$=0.263927); thus, bark thickness is not a factor in CBT susceptibility.