

Orientation of an Asian Longhorned Beetle, *Anoplophora glabripennis*, Towards Objects of Different Shapes and Colors

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Abstract

Silhouettes of different colors, shapes and sizes made of bamboo frames covered with cloth, paired in different color sets, were placed equidistantly around the perimeter of a circle with a 7.5 m radius, in an open area. About 50 -100 caged beetles were released in the center of the circle at the rate of about 1 beetle per 2 minutes for each release period. The flight paths of individual beetles were visually tracked and some were videotaped. The number of adult beetles that landed on each type of silhouettes as well as those left the test arena was recorded together with other types of behavior. Weather conditions, such as temperature, humidity, solar radiation, wind speed and direction during all observation periods, were recorded.

Although only about one third of the released adult ALB landed on the silhouettes, this proportion is significant considering that the space these silhouettes occupied is less than 10% of the arena. Among the beetles that landed on silhouettes of same size cylinders, more landed on silhouettes in black than landed on those of other colors. This, together with the behavior of adults flying close to the silhouettes, indicates that the beetle can perceive at least some color within short distances and prefer objects in black. When black silhouettes of different shapes and sizes were placed in the arena, more beetles landed on taller silhouettes, and those with the larger surface area at the top half. More beetles landed on cylinders whose top half or third was green than those that were black. The speculation is that the silhouettes whose top half or third were green probably look more like a tree to ALB adults than the ones whose top half or third were black. More studies will be conducted in 2002.