

**INVASION OF PATCHES OF NATURAL
VEGETATION BY EXOTIC WOODY SPECIES IN
OBAFEMI AWOLOWO UNIVERSITY,
ILE IFE.**

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ABSTRACT

The study investigated and determined the extent and pattern of invasion by the exotic woody species, their dispersal mechanism as well as the most successful invaders and why certain areas may be prone to invasion by exotics than others in the University Estate. This was with a view to understanding the patterns and rates of invasion of natural forest by exotic species.

The study was carried out in thirteen 25 m x 25 m sample study plots in different parts of the Obafemi Awolowo University Estate, Ile-Ife using forest patches of different successional stages. In each study plot, all the woody plants that were 2 m and above in height were enumerated and identified. A tape was used to measure the girth size of each woody plant at breast height. The height was also measured using a calibrated wooden pole for the short ones and a Haga altimeter for the taller ones. The distance of each of the sample plots from the nearest built-up area and cluster of the exotic plants was recorded. The geographic location of each sample plot was determined using a Garmin global positioning system. The dispersal mechanism of each exotic species was also noted. After the field work, the densities of all enumerated woody plants, both exotic and indigenous in each sample plot were calculated. Histograms of the size class distribution of all enumerated woody plants were prepared and the sample plots compared for rate of invasion/proportion of

exotics. Correlation analysis was carried out to determine the significant relationships between plot exotic density and distance from built up areas/cluster of exotics. Ordination of plots and species was also carried out to determine which plots were most prone to invasion, the most successful invaders and the plots with higher species diversity.

Results showed that there were 87 woody species consisting of 12 exotic species. Five plots were characterized by young trees mostly in the 0-20 cm size class, four plots were without exotics, two plots had few exotics in the smaller size class, one plot contained only one species of exotic found in the highest size class while one plot had few exotics randomly distributed in the size classes. The six least invaded plots were mostly in their mid successional stages except one that was mature while the five most invaded were mostly early succession plots. Two plots which were in the early/mid successional stages were moderately invaded. The invaded plots were the disturbed ones that were close to the built up areas with a cluster of exotics that were deliberately planted for ornamental purposes. Distance from cluster of exotics was very strongly negatively correlated with exotic density ($r = - 0.739$, $p = 0.01$). The same applies to built up, area and exotic density ($r = 0.547$, $p = 0.03$). The most successful invaders in this study were *Leuceana leucocephala*, *Delonix regia*, *Peltophorum pterocarpum*, *Bauhinia monandra* and *Azadirachta indica*.

Seven plots had high species diversity while six plots had low species diversity.

The study concluded that most of the plots had been invaded and that disturbance, dispersal mechanism of the exotics, nearness to built up areas and cluster of exotics were major factors in the invasion of forests by exotic species in the Obafemi Awolowo University campus.