

ZONING AND SITE CLASSIFICATION FOR THE EVEN - AGED TEAK PLANTATIONS

D P Munaweera

Forestry Development Division
Ministry of Forestry and Environment

The relatively high accuracy possible with growth and yield models for uniform stands results partly from the precision with which it is possible to classify site. The height of a uniform stand, at a given age is a good indicator of the productivity of that type of forest on that particular site. Hence the construction of height/age curves corresponding to different site classes is the first step in growth and yield modeling. However the mean height of a stand is usually sensitive not only to age and site, but also to stand density. Site for a stand is area specific, where the site of a particular stand cannot be improved significantly by better management. Therefore, dominant height which is almost entirely insensitive to stand density, could be used as a good indicator for site classification. Dominant height can be defined in various ways, but the definition with the widest used is that the dominant height of a stand is the mean height of the 100 thickest stems per hectare.

In this study, when dominant height/age scatter graphs were constructed separately for each district, it was clearly observed that these diagrams were similar in some districts and were significantly different compared for others. The districts and were similar site trend curves were combined together to give one teak zone where, within one zone, the variation in dominant height growth is very similar in all districts falling under that zone. Using this zonal categorization, it was easy to separate the growth variations among the teak growing areas in Sri Lanka. This zonal effect may possibly be due to genetic variation, but this cannot be analysed because the genetic information is not available.

Three zones have been identified for teak growing areas in the country. This was done using mean dominant height - age graphs, and constructing maximum, minimum and medium trend curves for each district. These curves and scatter graphs were compared with each other and grouped into selected sets using graphical methods. Different zones were identified using this method.

Once the zonal categorization had been done, each zone was considered separately for its site classification. This was done using the mean dominant height-age-site index relationships, which are basic to uniform forest growth predictions. The relationships are usually referred to simply as the site index curves for a species in a given environment.

For each zone the site index curves have been constructed using 20 years as the index age. The Schumacher equation was used in fitting a model for the medium trend curve. For site index curves both common slope and common intercept methods were used.