

Evaluating Fertilizer Types on Eucalyptus Plantation Growth in Southern China

Author: Juliana K Hussey

Co-Presenters: Mikafui Dzotsi, Anastasia Sipes

Major: Forestry, Fisheries, and Wildlife

Research Advisor: Roger Williams

China is one of the fastest growing economies in the world, with domestic import rates reaching 49% and export rates reaching 51%. The rising economy calls for an increase in demand for raw material. With the growing demand, China's own production of wood products is not enough to be self sustainable. As a result, China imports a large amount of timber to meet their needs. This study considered the factors that could mitigate the demand for importing wood product by introducing a fertilizer towards eucalyptus plantations in China. This study aims to compare various existing fertilizers as well as innovative new mixtures in eucalyptus plantations. At the beginning of the study period, the study site was divided into 11 sections each of which contained a different fertilizer treatment. One of the sections was left untreated to act as a control group. In all sections, height, diameter at breast height, volume, and biomass data were collected. Based on the data collected during the study, it is evident that all treatments resulted in some growth comparable to the control, treatment 0. Only one treatment showed a significant difference than treatment 0. This was treatment d containing phosphorous fertilizer in the form of phosphorous pentoxide, where 57.7% of the phosphorous pentoxide is derived from calcium magnesium phosphate and 42.3% is derived from monoammonium phosphate. The filler is comprised of 90% kaolin and 10% auxin IBA (indole-3-butyric acid). The importance of this study relates towards the need for more wood products. With the outcome of this study, fertilizer can be used as an economic advantage in producing more volume of wood at a faster rate, keeping up with the growing demand of China's economy. Management implications are included in the discussion.