Eucalyptus plantation management in Thailand

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Eucalyptus was introduced to Thailand in 1946 for use in land conservative projects in the northern mountain areas. Eucalyptus plantations have been established for the commercial production of wood products during the last 2 decades. Most of these plantations were established in the northeastern and eastern part of the country. Eucalyptus camaldulensis was the most widely used species by the pulp and paper industry because of its rapid growth rate and drought tolerance. Damage from gall wasps in eucalyptus plantations became a serious problem in 2010, so many new clones and hybrids of E. urophylla and E. pellita are being introduce to replace E. camaldulensis pure clones.

Most Eucalyptus plantations in Thailand provide wood to paper factories. These plantations are managed on 4-5 year rotations due to site and soil fertility. Plantations are harvested at least 3-5 times (12 -25 years), relying on resprouting to regenerate the stands. More recently, some Eucalyptus plantations have been planted to supply biomass power plants with solid biofuel. These plantations use very short 2-3 year rotations and sprouts are harvested at least 5 times before replanting. Eucalyptus is usually planted at 1x2 m and 2x3 m spacing (for both biofuel and pulpwood production) at the beginning of rainy season (May-July). Two to three weedings are done in the first year, and then once a year until harvest. Compost and chemical fertilizer (15:15:15) are added at the time of planting and after each harvest to maintain good productivity. A two-year rotation is expected to produce about 62.5-75 green ton.ha$^{-1}$ and a 5-year rotation is expected to produce about 94-156 green ton.ha$^{-1}$. Eucalyptus trees are harvested by cutting at the ground level. Within 2-3 weeks many new shoots or coppices will sprout. Pruning is done to leave 3-5 shoots to develop for the next rotation. Demand from Thailand’s paper and energy industries for Eucalyptus wood continues to increase. Plantation management techniques still rely on old-fashioned methods, which are motor-manual and labor-intensive. Enhancement of silviculture systems with partial mechanization, such as farm tractors, skidders and multi-tree-handling harvesters will be crucial to meet this demand. Education and training are also important measures to increase not only work performance, but also to improve work safety.

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