

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 introduced 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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