

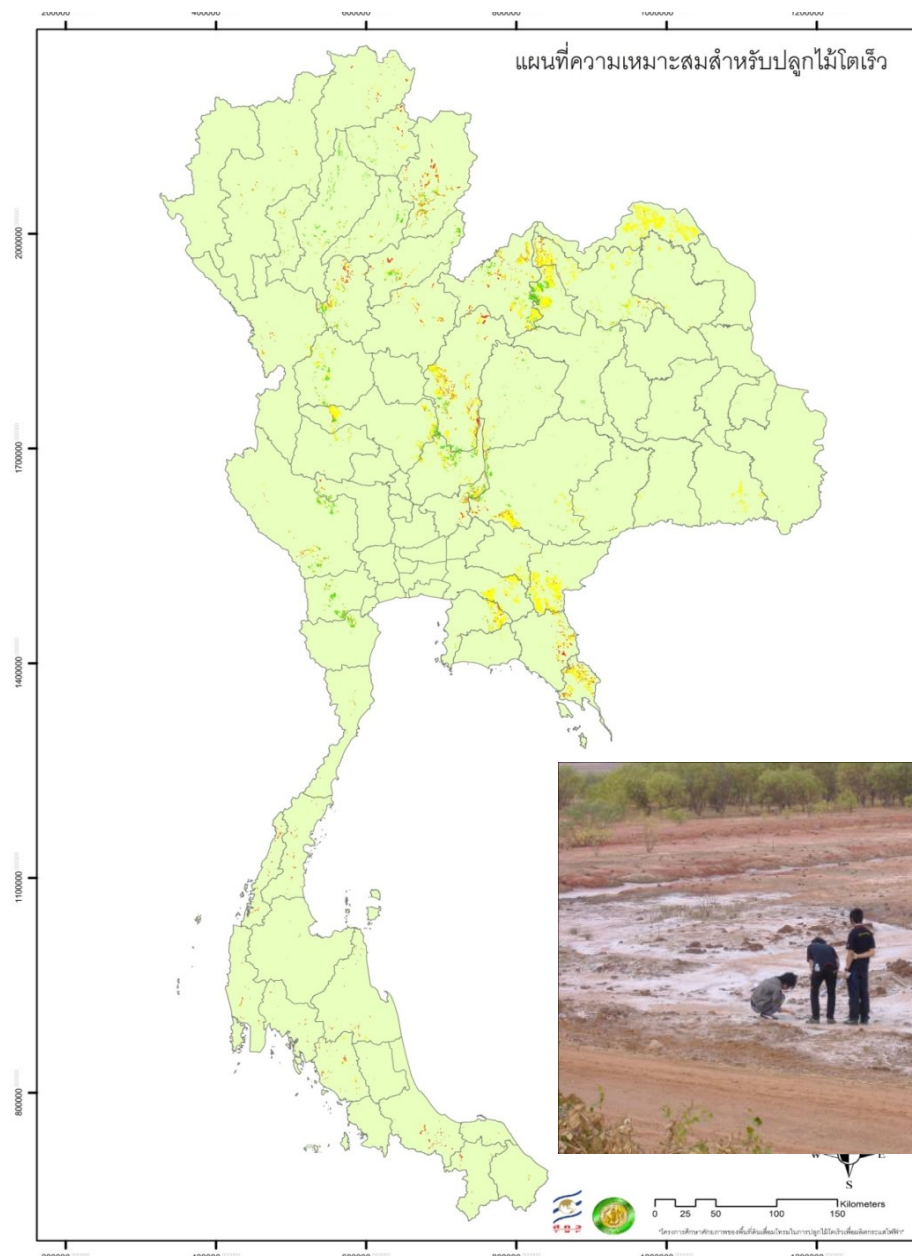
Eucalyptus plantation management in Thailand

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Overview

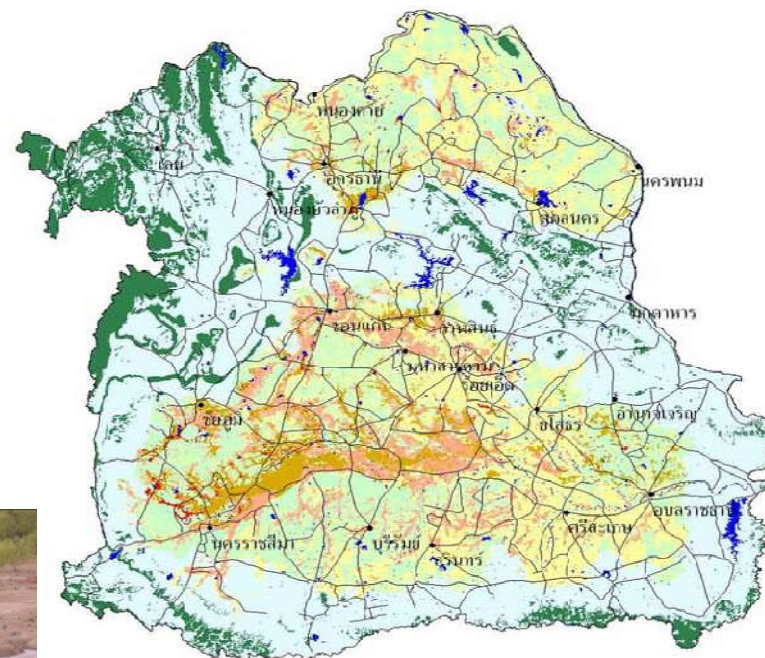
- Eucalyptus development in Thailand
- Utilization of eucalyptus wood
- Mass propagation of eucalyptus
- Planting and management
 - Site preparation
 - Planting method
 - Weeding and maintenance
 - Felling methods and stump management
 - Pests and diseases
- Conclusions



Total area of Thailand is about 51.2 mil.ha, 20% is low productive/problem land which is usually used to grow eucalyptus.

Saline soil in NE Thailand

แผนที่ปัญหาดินเค็มในภาคตะวันออกเฉียงเหนือ



- ดินเค็มที่มีผลกระทบจากเกลือมาก 332,251 ไร่
- ดินเค็มที่มีผลกระทบจากปานกลาง 3,836,342 ไร่
- ดินเค็มที่มีผลกระทบจากเกลือน้อย 7,338,289 ไร่

รวมทั้งสิ้น 1,8 mil.ha



สำนักสำรวจดินและวางแผนการใช้ที่ดิน
กรมพัฒนาที่ดิน
มีนาคม 2549

Old *E.camaldulensis* plantation since 1980 – 1990

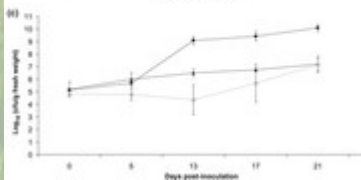
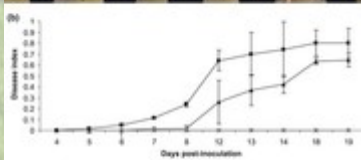


Seed sources from
Petford, Gibb river,
Katherine, Australia

Severe damaged from eucalyptus gall wasp in 2004



Over 50,000 ha
was damaged from
gall wasp in early and
sapling stage caused
a halt of eucalyptus
planting.



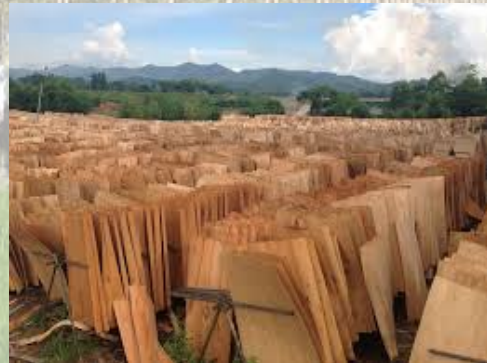
Hybrid and clones development against gall wasp

Gain trial of new clones for biomass energy



4 main species are used for improvement/breeding program; *camaldulensis*, *urophylla*, *pellita*, *brassiana*.

Utilization of eucalyptus wood



Regenerated Cellulose





Shoot cutting is currently used for seedling mass propagation, 10-50 million seedlings/year

Site preparation



Eucalyptus planting in dry season,
on rice paddy bun



Eucalyptus with rice and cassava model



Weeding methods



Man power



Mower backpack



Mower with small tractor



Fire impact and fire protection



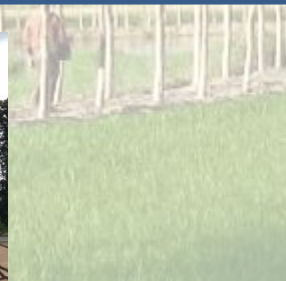
Felling methods







Eucalyptus chip mill/paper mill/ power plant

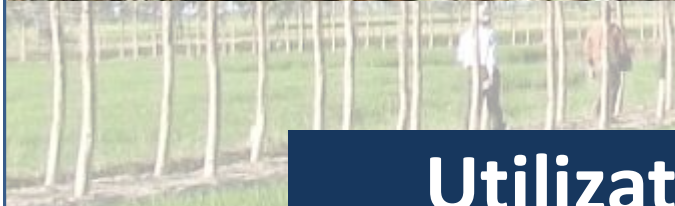




Stump and coppices management



0.34-2.8 USD/pole



Utilization of eucalyptus wood



Traditional charcoal kiln

Pests and diseases



Gall wasp

Leaf folders



Termite

Fungus group

Conclusions

- Nowadays, eucalyptus play an important role in pulp and paper industry in Thailand. Eucalyptus woodchip is exported to Japan, Taiwan and China, export value is more than 300 million USD annually.
- There are big paper and trader companies in Thailand, doing whole supply chain from genetic improvement, seedling production, plantation and extension to farmers (contract farming).
- Most of plantations are located in NE and E, shoot cutting is used for mass propagation seedling, 2x3 m is the most popular spacing which will provide 125 GT/ha in 5 years rotation.
- Management techniques relies on manpower which is high cost and becomes trouble in current situation with lack of labor. Therefore good silvicultural practice with mechanization is needed.
- Eucalyptus plantation is increase regards to positive market and policy of biomass and bio-refinery especially bio-power in the country and regional markets.



Thank You

KU 
BIOMASS

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