Agrociencia Uruguay 2023 | Volume 27 | Number NE2 | Article e1260
DOI: 10.31285/AGRO.27.1260
ISSN 2730-5066

IUFRO Conference 2023

Adaptability of *Eucalyptus pellita* hybrids in tropical monsoon climate in Southeast Asia

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Received *06 Jul 2023*
Accepted *09 Sep 2023*
Published *20 Nov 2023*

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Fast growing acacia species has mainly been planted in commercial plantations for many years in Southeast Asia. However, the main species has been replaced to *Eucalyptus pellita* in tropical rainforest climate zones, such as Indonesia and Malaysia, due to the spread of diseases such as Ceratocystis. On the other hand, the main commercial planting species in Vietnam, which is located in tropical monsoon climate, is still acacia species such as *Acacia* hybrid (i. e. hybrid of *Acacia auriculiformis* and *Acacia mangium*) and *Acacia mangium*. In recent years, decline of the survival rate and the productivity due to the disease has also been observed in some high rainfall regions in Vietnam. Therefore, it is necessary for the industries to secure the alternative planting materials to deal with the risk of the spread of the disease. We have worked on the development of new eucalyptus varieties in Laos, which also belongs to the tropical monsoon climate zone with annual rainfall of 2,500 to 3,000 mm concentrating from May to September. The main constraints to grow *Eucalyptus* in this region are leaf disease in rainy season and drought in dry season. *Eucalyptus pellita* is the best suited pure species in the region with very good resistance to leaf diseases. However, the survival rate is generally poorer and also the initial growth is slower than other fast growing *Eucalyptus* species. On the other hand, although *Eucalyptus camaldulensis* is sensitive to leaf diseases, the survival rate is generally high due to the deep root system and the initial growth is generally fast. Therefore, we came up with the idea of developing the hybrid clones between *Eucalyptus pellita* and *Eucalyptus camaldulensis* with both leaf disease resistance and good survival rate. We set up clone trials during 2013 to 2015 by using a total of 400 clones mainly of *Eucalyptus pellita* hybrids from cross-pollinated seedlings derived from the selected trees. Then, we have successfully selected several hybrid clones of *Eucalyptus pellita* and *Eucalyptus camaldulensis* for commercial use. In this presentation, results of the clone trials at 5 years old will be shared for the understanding on the adaptability of various *Eucalyptus pellita* hybrids in the tropical monsoon climate zone.

Keywords: Eucalyptus, pellita, camaldulensis, hybrid, Southeast Asia, tropical monsoon, Laos, Vietnam

Sukeno S. Adaptability of *Eucalyptus pellita* hybrids in tropical monsoon climate in Southeast Asia. Agrociencia Uruguay [Internet]. 2023 [cited dd mmm yyyy];27(NE2):e1260. Doi: 10.31285/AGRO.27.1260.