

## **Man-made Versus Natural Forests in Mid-Yunnan, Southwestern China** **Plant Diversity and Initial Data on Water and Soil Conservation**

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Plant diversity, water, and soil conservation of man-made versus natural forests in Mouding, mid-Yunnan, were investigated and analyzed. Various plant communities exist in this mountainous region: 4-year-old shrubland, a 10-to 14-year-old plantation of *Eucalyptus smithii*, a 35-to 45-year-old plantation of *Pinus yunnanensis*, a 35-to 45-year-old semi-natural forest of *Keteleeria evelyniana* and *Pinus yunnanensis*, a 35-to 55-year-old natural secondary forest of *Keteleeria evelyniana* and *Cyclobalanopsis glaucoides*, and a climax forest of *Cyclobalanopsis glaucoides*, *Castanopsis orthacantha* and *Castanopsis delavayi* as the original mid-subtropical, semi-moist, evergreen broad-leaved trees in the region. The species diversity and the regenerative quality were poorest under the *Eucalyptus* forest. The *Pinus* forest had the lowest interception and stemflow(26.4%) of rainfall, followed by the *Eucalyptus* forest (29.5%). The leaching loss of nutrients was greater in the two planted forests than in the natural ones. The soil under the *Eucalyptus* forest was impoverished and showed deterioration of its chemical characteristics, as compared to the shrubland, semi-natural, natural, secondary, and climax forests in the same area.

**สรุปย่อ :** ผลการวิจัยของ Yunnan University ของจีนเมื่อปี 2007 โดยเปรียบเทียบสวนยูคาลิปตัสกับสวนป่าชนิดอื่น พบว่าสวนป่ายูคาลิปตัสพบความหลากหลายของพืชชนิดอื่นน้อยที่สุด การรับน้ำฝน(interception)ต่ำสุดพอกๆกับสวนป่าสน มีการชะล้างธาตุอาหารสูง ความอุดมสมบูรณ์ของดินต่ำสุดเมื่อเปรียบเทียบกับพื้นที่ปลูกไม้พุ่มเตี้ยๆ ป่ากึ่งธรรมชาติ ป่าชื้นที่สงป่าสมบูรณ์(climax forest)