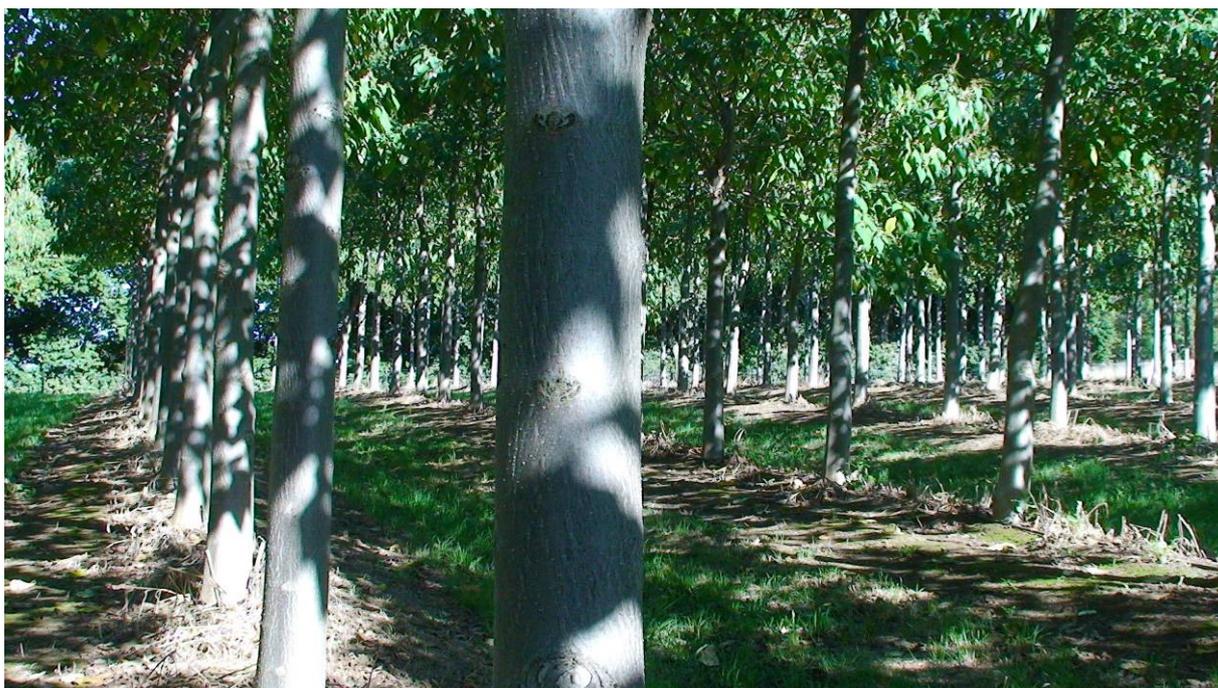


PLANTING DENSITY

a concise report by James S. Lawrence of TGG ~ toadgully.com.au

Given the wide range of opinion on this issue I feel I should offer my input. It seems the larger Paulownia growers in Western Australia are generally planting at much closer spacing than the bulk of their Queensland counterparts and considerably closer than I would generally recommend. In Qld some of the largest plantations are planted between 6 x 5m to 6 x 7m with some as wide as 7 x 7m. My clients generally follow my recommendation of 4m in row x 6.25m between rows which gives 400 stems per hectare. (This is the same as 5 x 5m but the closer in row spacing results in some cost savings, eg. dripper line.) I believe this is the highest viable density for a clear fell harvest between 8 and 12 years of age. If a later harvest is desired, even at this density thinning will most likely be required at least by year 12 if slowing of timber increment is to be avoided. This is based on the fact (as demonstrated in research by the Chinese Academy of Forestry, supported by anecdotal evidence and my own experience within Australia) that any Paulownia branch consistently in 70% or more shade will die. This means that after complete canopy closure in a plantation the lower limbs die, resulting in reduced photosynthesis, forcing increased compensatory upper growth, and thus leading to a reduction in trunk girth increment.

Paulownia plantations with a density higher than 400/ha will require thinning if a slow down in trunk diameter growth is to be avoided. The age at which thinning will be required will depend primarily on the density but could be expected to fall between 4 and 7 years of age. Trial milling of Paulownia logs I have been involved with indicated that in order to receive a very good recovery rate the minimum log diameter should be 30cm at the narrow end. I am aware some people believe they can harvest at 6 years of age and I have seen some impressive 6 year old logs picked from a very small plantation in northern New South Wales, but I advise scepticism about whether viable thinnings can be produced consistently across a whole large plantation. We are talking Paulownia - not Blue Gums or Pines. I feel too much emphasis is put on the height of the tree rather than the diameter of the trunk. I'd rather have short, fat trunks that I can harvest than a field of flag poles. The safe option is to plant at a spacing which will support adequate photosynthesis of all the trees in the plantation right up to a point when they are large enough in girth to be viable for harvesting. This could be expected between years 8 and 12, which is very fast considering the potential value of the timber.



8 yr old *Paulownia fortunei* x *tomentosa* planted 4m x 6.25m in Victoria

below: these *Paulownia fortunei* in Cambodia planted just 4 months before this photo, using TGG Headstarters™, are too closely spaced for timber production and will soon be over-crowded

