

## **Kiri tree : pilot plantation proposal**

The Kiri tree (*Paulownia species*) is a fast-growing deciduous hardwood tree native to China, which can produce valuable timber in a relatively short time period compared to conventional forest plantations. The trees can grow to over 6 metres height in the first season, and after 10 years can be more than 50cm trunk diameter and 20 metres tall. They have large shady leaves in summer, and abundant fragrant flowers in spring. The leaves improve the soil or can be used for animal fodder. When the tree is cut, it will self-regenerate from the stump.

Kiri timber is light-weight, and blonde/straw colour with distinct growth rings and beautiful sheen and grain. It veneers and slices well for plywood manufacture, and can be sawn and dressed for use in a wide range of internal mouldings, furniture and decorative applications. The timber has a long history of usage in China and Japan.

Establishing and growing the crop requires a substantial commitment of land, capital and time, and therefore planting the right variety is very important. Trees supplied by Kiri Forestry Enterprises include 6 unique *Paulownia* genotypes selected from a base of more than 120 “plus tree” seedling offspring. These selections have shown consistently good performance compared to other clones across a range of sites over 10 years. They have a good volume growth rate, branching habit and crown form, and are highly suited for commercial timber production. A number of different *Paulownia* species and varieties with particular characteristics can be supplied for testing in new locations, or for ornamental planting.

Suitable growing land will have freely draining non-sodic friable soil, pH 5.5 to 7.5, to depth of at least 60cm, and a warm/hot growing season with adequate spring/summer rain or 3 to 8 megalitres per hectare per year irrigation water available. In the tropics, elevated plateaus or hills will produce better growth than lowlands. Good site preparation, fertiliser, and intensive management during the early months are required to obtain the best results. Seeds of all *Paulownia* species are short-lived and have low natural viability, and there is little prospect that they will become invasive weeds.

A Kiri tree plantation can have between 200 and 500 trees per hectare at establishment and may take 12 to 18 years to reach final maturity. The total timber yields over a 16 year growing cycle are likely to be around 280 m<sup>3</sup> of merchantable sawlogs per hectare, yielding 150 m<sup>3</sup> of sawn product.

The first commercial partial harvest (thinning) can be expected when the trees attain a trunk diameter of 25 cm within 6 years. The value of gross timber sales from a 16 year rotation with thinning is likely to be more than twice that from an unthinned 10 year rotation. Outcomes will vary depending on site and market factors, and the growers objectives and management techniques.

**We recommend that prospective growers with suitable land and skills start with a modest plantation area to determine site performance and management needs.**

A 10-20 hectare planting will be suitable to test a range of clone types, timber management treatments, planting densities, establishment techniques, and in some cases, soil types. For example, a pilot planting could evaluate 2 methods of site preparation, 2 levels of fertiliser application, and 2 different planting densities, on 2 different soil types. With statistical validation through at least 2 replicates with 100 trees per treatment, around 3,200 trees of each clone may be required, plus allowance for “buffer” rows around each treatment plot. A recommended pilot program may thus contain around 10,000 trees. The best time for planting is in spring or at the start of the rainy season. As the young trees are not an “off the shelf” stored product, a lead-time of a few months may be required for orders.

Kiri Forestry Enterprises can provide further information to help you set-up and evaluate the pilot plantation, and can supply skilled, experienced, professional consultancy services on a short-term basis if required.

### **Riverbank planting – age 6 years**

