

The special characteristics of the Super Paulownia

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Introduction

Global warming problem has become a big issue in the world in recent years.

In efforts to reduce CO₂ emissions into the atmosphere, various energy saving measures are being put in place in various countries. However, the unique idea of actually absorbing the CO₂ already emitted into the atmosphere is a new concept. So, we decided to place our emphasis on capacity the absorption of CO₂ by plants—just the way Mother Nature intended and designed.

Super Paulownia

That is a fast growing species of Paulownia, and it was named “Super Paulownia” by our company.

The Super Paulownia grows rapidly and absorbs great amounts of CO₂. Furthermore, when it reaches its mature phase (about 4 to 6 years), if it is harvested, a new tree will regenerate from the cut stump.

Therefore, compared to other types of CO₂ absorbing plants, Super Paulownia can go through repeat cycles of growth while always absorbing maximum amounts of CO₂ from the atmosphere.

Moreover, the mature harvested Super Paulownia tree has an independent economic value as timber.

Attention is being garnered for the revolutionary concept that achieves the impossible —helping the environment while also attaining economic value.

While there are a few places where Paulownia is planted and grown for about a ten year period before being harvested as timber, our company is the only company to accelerate the growth of the Super Paulownia tree and practice the planting or foresting of these amazing trees, with a strong emphasis on the environmental benefits above all else.

We would like to explain to you about Super Paulownia.

What is “Super Paulownia” ?

It is the brand name for a type of Paulownia that has as its core purpose, the maximum absorption of CO₂.

The Paulownia tree is called “kiri” in Japan. We have developed a species of Paulownia that grows rapidly to maturity due to our know-how and harnessing of environmental conditions. This is what Ecoindex Co., Ltd. has named “Super Paulownia.”



The special characteristics of the Super Paulownia (Part 1)

It grows fast

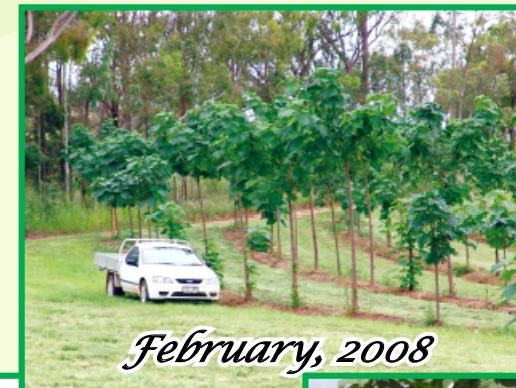
Our Paulownia grows to maturity in 4 to 6 years
(regular Paulownia can take up to 15 to 25 years)



October, 2006



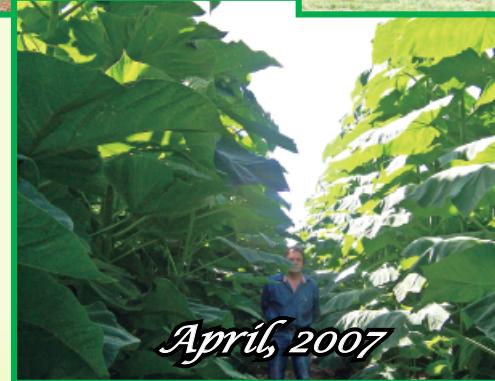
January, 2007



February, 2008



November, 2006



April, 2007



March, 2009

The special characteristics of the Super Paulownia (Part 2)

再生能力 (Regeneration ability)

It can regenerate from a cut stump and grow into another mature tree again in 4 to 6 years. This cycle can be repeated 4 to 6 more times.



期待される潜在的な二酸化炭素吸収量 (Expectations of potential carbon dioxide absorption)

The amount of CO₂ absorption during its growth cycle is enormous. For example, it is 10 times larger when compared to that of a Japanese cedar. And, over the long term period of 60 years, research performed by Hiroshima University in Japan indicates that it absorbs 3.5 times more carbon dioxide.

可能な用途としてのエネルギー消費低減建材 (Possible uses as energy conserving building materials)

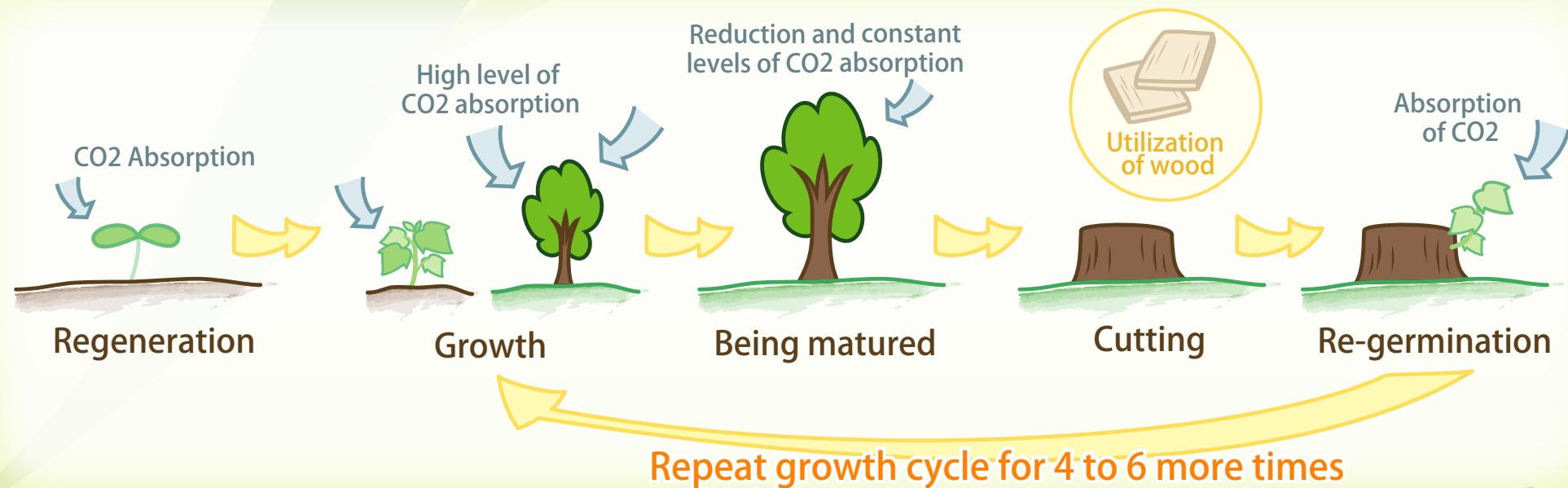
Paulownia timber has low energy conductivity and thermal characteristics, producing a type of air conditioner effect when used as a building material.



After harvesting a mature tree

Harvested in shorter amount of time, regeneration from the remaining cut stump

With other trees, as cedar, pine, etc, the absorption rate rises gradually after planting, maximizes at a certain growth point, and thereafter gradually decreases as the tree continues to age until it stabilizes at a certain level for the remainder of its life cycle. Therefore, in order to retain maximum carbon dioxide absorption, it would be better to continuously harvest and plant new trees. However, because the Super Paulownia can regenerate from the cut stump, and repeat the cycle of growth .there is no cost or time associated with planting a new tree. Additionally, high levels of carbon dioxide absorption are retained due to this unique ability to regenerate.



Characteristics associated with the use of Super Paulownia as timber (Part 1)

Soft

Super Paulownia has higher levels of flexibility and elasticity, so small nicks or cracks can seal itself up. When used as flooring in homes, it is ideal for children and the elderly because it is not as slippery as other floorings and if there is a fall, the softer characteristic of the wood means a softer landing.



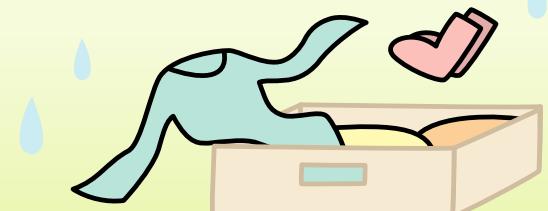
Lightness

The specific gravity of the lightness of Super Paulownia is 0.28 to 0.3. This means that chairs and tables made from Super Paulownia are lighter and easier to move, making the moving of furniture that much easier.



Moisture resistant

Super Paulownia is moisture resistant so water cannot penetrate easily from the outer surfaces to the inner area. It remains clear and free of condensation. It is also strongly resistant to changes in humidity, making it resistant to molding and ideal for storage of clothing or food items such as rice.



Characteristics associated with the use of Super Paulownia as timber (Part 2)

④ Low thermal conductivity

The cells that comprise the Super Paulownia have an air layer, making it hard for heat to conduct itself. By providing effective thermal insulation, it helps maintain the temperature for a long time. In other words, it sustains cool temperatures even after the air conditioner is turned off, or maintains warmth even after the heater is turned off. By using Paulownia in the walls or flooring, it will help save energy costs.



⑤ Rapid evaporation of water content

Super Paulownia wood has high water content, with an average of 188% moisture content. However, just by allowing it to dry naturally, this moisture content decreases to 12%. This saves the cost of a drying process that might normally be needed before using the Paulownia as a building material.

Possibilities of auxiliary products

Honey

Honey is made from bees that feed on the nectar of Paulownia flowers. So a variety of products can be expected as by-products of the leaves and flowers of the Paulownia tree making it useful beyond just its timber.

Wine

Paulownia wine is produced and sold in Australia.



Healthy food, cosmetics

Paulownia contains ingredients that are said to be good for health and beauty purposes.





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