

# Smaragdfa® 2021

27 benefits of our Paulownia  
hybrid



## The Tree of the Future

### **Smaragdfa® – a Paulownia Hybrid**

with 27 miracles

An Aboriginal tree, in general – have limited, although important advantages, such as Biomass and Oxygen production (photosynthesis).

For better understanding, let's take a look at the **Eucalyptus** (still subsidized in Morocco, cultivated in large capacity in Brazil and Australia). It destroys the water table and does not tolerate intercropping at all. The main reason they've been planted so far, is their fast biomass production.

Moreover, some trees are able to offer more. Above their biomass, they possess **5 to 10** useful qualities. The **Olives** offer: biomass, oil, intercropping, oxygen and humus for the enrichment of the earth. The **Acacia** offers – in addition to the Olives' qualities – honey (nectar) and good pollenization for the neighbourhood (but the Acacia does not tolerate intercropping between its lines).

However, above all, our Paulownia Hybrid, the **Smaragdfa®** with its well-selected and cross-breed parents – offers **27 good qualities** that each and every one of them collaborates to specific goals of utilisation should that be agricultural, industrial or environmental.

This **Hybrid planted in a carbon climate farm with its technological elements** contributes to each of the **17 Sustainable Development Goals** set by the **United Nations** in 2015. (UN SDG17 - <https://sdgs.un.org/goals>)





**SUNWO<sup>®</sup>**  
Stratégiai Energia Technológiákat  
Fejlesztő és Szolgáltató Zrt.



(Source: Sunwo Press Conference and Open Day, Nagyberény 2020)

## The Bio-Engine of the 21 st Century

Our **Smaragdfa<sup>®</sup>** is a unique hybrid of **non-invasive** trees that offer 27 qualities to profit from in all aspects of utilisation. The qualities, that the tree offers, are beneficial for agricultural, industrial and not to mention, environmental utilisation: **Smaragdfa<sup>®</sup>** contributes to the positive and deliberate change of our climate



## ***27 good qualities – miracles of Smaragdfa<sup>®</sup>***

The advantages of **Smaragdfa<sup>®</sup>** during its **24 – 30 years** life cycle

### **I. Large size of leaves full of protein, fiber, nitrogen and Niacin**

1. Direct fodder for livestock, the leaves can reach 75 cm in diameter, and contain about 20% high quality protein, which are close to alfalfa
2. Compost (after the leaves fall) helps maintaining fertility of the plantation, although manures (organic fertilisers) are most welcome to support the fast growth
3. Contains Niacin (important natural pharmaceutical agent). For more information, please see Niacin indications and usages:  
<https://ods.od.nih.gov/factsheets/Niacin-Consumer/>
4. Food for humanity (if vaporized and stuffed)
5. Its crown offers free biomass for heating; bioethanol or biogas production, substitutes silage or maize
6. Smaragdfa<sup>®</sup> can re-define charcoal production, since the wood-gas that occurs as secondary product can be used for electrical power production and for municipal goals





**II. The flower of Paulownia can bloom even twice a year in an ideal environment in just 6 months after planting. (The tree is highly compatible with the weather conditions in Morocco and such regions with extremities)**

7. Perfume and Cosmetics: Good-quality nectar and honey products: from the 2<sup>nd</sup> year, it is able to supply vanilla-tasting flowers to the perfume industry
8. Pollenization: Its Nectar is rich in sugar that increases bee activity in about a 5km radius area, thus contributing to an increased production yield of agricultural or fruit plantations in the neighbourhood
9. High quality tea made from the flower of the plant, which has a flavourful vanilla taste, thus making it a very popular choice among gourmets

**III. Wood**

10. The tree is growing very fast and can reach 2 – 3 cm growth per day, and 4 – 5 m growth per year



(7-year old tree, Source: Sunwo, Nagyberény 2020)



11. The trunk is a noble wood, with an excellent price on the global market. (Highly respected in Japan, to an extent that the family of the Japanese Emperor is using as a symbol on their stamp). Production of wood from the 6th year, or (with a better yield) after 8 years is about  $0,6-1 \text{ m}^3$  per tree, (about 500 cubic meters per hectare). After each cutting the tree regenerates, that's why it's called „Phoenix”, meaning that 3 and 4 cuts can be done without the need to replant the tree
12. Ultra-light ( $0.35-0.48 \text{ kg/v}$ ) weight is, among others, excellent for doors and windows production – the door below made from Smaragdfa® is third in weight of an oak tree, yet it is – similarly to the oak – a hardwood



(Door and window made from the trunk of a 6 years old Smaragdfa® produced by Németh-fa Ltd., Source: Sunwo, Nagyberény 2020)

13. Elastic and strong (for boat construction or windbreak)
14. Equivalent calorific value to the brown coal





15. Catches fire from 400 – 420 Celsius (twice as much as other trees)
16. Its ash has a very high melting point, so it protects boilers while firing biomass
17. Moisture-resistant after it dried up following cut and processing
18. Its wood can be promising prime-material for natural plant-based fiber – lyocell – production

#### **IV. Climate effects**

19. Actively forms and/or stabilizes micro climate through its crown-shadow and leaves evaporation. In an Eco-island or in a carbon climate plantation it can decrease temperature by 3-5 °C degrees
20. With its photosynthesis type C4 it absorbs 100 tons of CO<sub>2</sub> /ha/year in Europe compared to Morocco's 200 tons of CO<sub>2</sub>/ha/year. The natives process on the European continent only 13 – 13.6 tons of CO<sub>2</sub>/ha/year. However, with our labelled innovation under COP22 (Marrakech 2016), processing (absorption and conversion) can be increased up to 500 tons of CO<sub>2</sub>/ha/year
21. Smaragdifa® creates a natural depression in its surroundings to attract moisture. This phenomenon combined with other technologies (for example: cloud saturation and laser-initiated rain etc...) can help to reduce desertification, save oases and even reforest the Sahara. The project was introduced on the 5th Crans Montana Forum in Dakhla (2018), chaired by president Gerhard Schröder. Our special Sahara Scientists Summit group with international scientist is working on the extension of opportunities
22. Its evaporation during the day and its condensation at night enriches intercropping. Yield can grow up to 30% due to the favourable condition



## V. Ecological effects

23. Due to the tree's ability of high CO<sub>2</sub> absorption and its smooth transformation into cellulose, oxygen production is very intense
24. Leaves have micro adhesive surface that catch up 30 tons of dust per day/ha, that is, later recycled into the soil (from leaves) during night time with the help of condensation. Thus pollen, smog and other harmful elements are extracted from the air, too
25. Its taproot reduces slope erosion. Thus, offering natural protection to affected villages
26. Rehabilitation of contaminated sites is an important issue all over the world today. Smaragdfa® filtrates the contaminants through its taproot and could use sewage-, and waste water from garbage depots or animal breeding



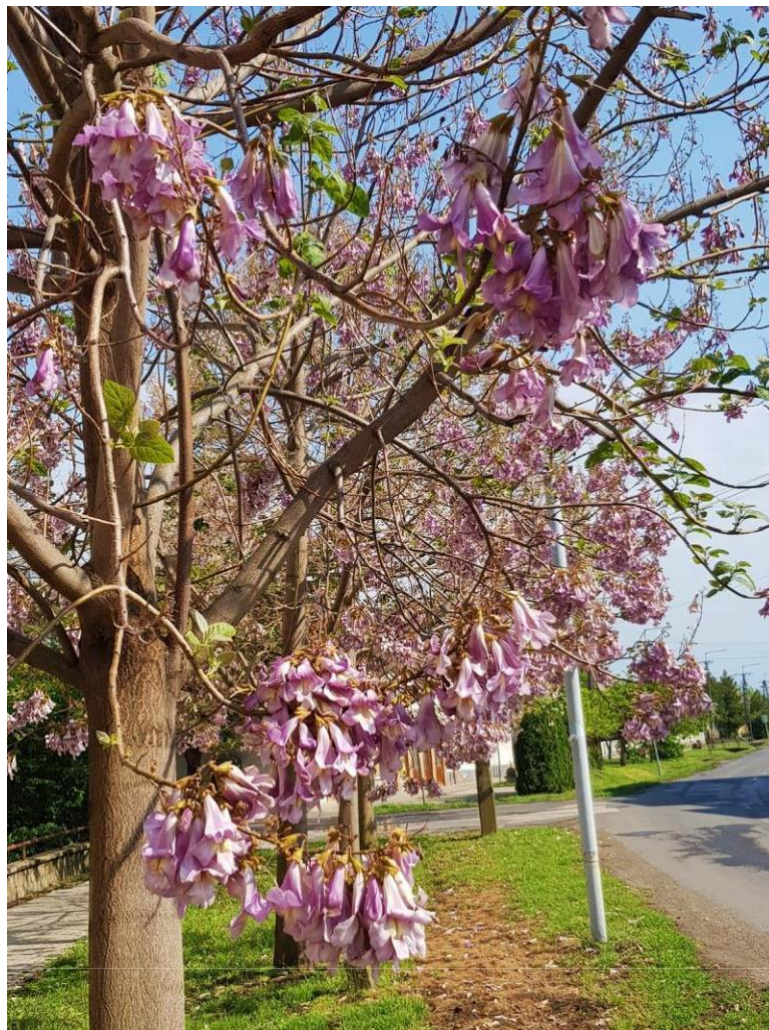
(Late blooming of the Emerald Tree, Source: Sunwo, Nagyberény 2020)





## **VI. Ornamental effect**

27. Its flowers have very nice purple colour and pleasant vanilla smell that can glorify neighbourhood alleys and parks or form an Eco-island



(Eco Island in Füzesgyarmat, Source: Sunwo 2019)



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Add your personal experience for developing and expanding the value of

**Smaragdfa<sup>®</sup>**, as the Tree of the Future!

**For more information, please visit the website: <http://sunwo.eu/>**

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