

Cultivar BELLISSIA®



ORIGIN: Hybrid of Paulownia elongata x Paulownia fortune and backcrossed with Paulownia elongata hybrid.

BELLISSIA® is a high productive Bio tree selection cultivar for production of high grade timber. The cultivar has strong apical dominance and has been selected especially for temperate climate that makes it the best choice for timber production predominantly in monostem plantations.

CHARACTERISTICS:

Resistance to low temperatures	-20°C
Annual growth in the first real vegetation season	5-6m
Annual growth of stem in diameter	3-5cm
Maximum height	over 15m
Lignification	during first real vegetation season
Rotation cycles	4-5 (based on 8-9 years periods)
Crown	compact compared to P. tomentosa
Flowering	after 2 years of cultivation
Soils requirements	according table
Water requirement	high (according table)
Production	
One cubic meter of timber	8-9 years (temperate climate) 6-7 year (warmer, sub-tropical climate)

PLANTING SCHEME

Appropriate distances between plants are: 4mx4m, 5mx5m meters or 5mx4m.
 Average plants per hectare 500-600pcs.

Useful information:

Larger density leads to competition for area between the trees and slower their growth after the first 3-4 years. Lower density leads to faster initial growth which lowers the timber quality. Higher density does not lead to commercial effect, the necessity of elimination of plants is connected with expenses for eradication and herbicide treatment to stop the regeneration from the roots and in the end the 3-4 years old stems does not possess enough volume to be used for timber.

IRRIGATION OF PAULOWNIA PLANTATION

General irrigation scheme (for temperate climate).

Age of plants	Litres	Period of irrigation
1 up to 8 weeks	3-5	2 - 3 days
3-4 months	6-10	3 - 5 days
5-7 months	10-12	5 - 7 days
2nd, up to 4th season	40 -50	7 days (or 20-25L twice weekly)

Useful information:

When planting ensure soil moisture with at least 60% (the drippers should be installed) and during the first month after planting the soil moisture should not go under 50%. The level of moisture is checked every 1-2 days. Depending on the climate you may need to irrigate daily. Usually it is sufficient if you ensure deep soaking on every 7 to 14 days during the first season. The sandy soils will need more water than heavy loams, but the result in case of over-watering in sand will be wastage and leaching of nutrients out of the root zone. For Paulownia is

normal to wilt during a hot day - this is a mechanism for avoiding excessive transpiration. If the trees are wilting because it is hot, but the soil is moist don't water them or you risk causing root decay. If they have enough moisture the leaves will stand up again when it cools in the evening.

A gradual reduction in water application with the growth of the plant (decreased frequency) is usually possible, but in a drought year older trees may still require irrigation. The irrigation is critical mainly for the young plants up to 3months. It would seem more losses occur due to over-watering Paulownia than under-watering.

REQUIREMENTS TO SOILS AND NUTRIENTS

The selected lands for the plantation must have soils within the parameters from the table below or they should be matched with application of fertilizers.

No	Parameter	Permissible margins
1	Mechanical composition – content of phisic clay	Up to 30 %
2	pH	5,00 – 8,50
3	Composition of water soluble	under 1 %
4	Depth of soil profile	over 90cm
5	Depth of humus horizon	over 40cm
6	Total porosity	over 50 %
7	Density of soil	around 1,3 g/cm ³
8	Underground waters depth	under 2,00m
9	Altitude	Up to 700m in temperate climate (higher in warmer areas)
10	Average annual temperature	13 – 25 C ⁰
11	Maximal T C ⁰	Over 40,0 C ⁰
12	Minimal T C ⁰	-20,0 C ⁰
Content of main soil nutrients		
	Accessible phosphorus P ₂ O ₅	12 – 14 mg/100g of soil
	Accessible potassium K ₂ O	17 – 21 mg/100g of soil
	Accessible mineral potassium Σ N-NH ₄ +NO ₃	22 – 25 mg/1000g of soil

Useful information:

Paulownia needs a lot of nutrients to develop its full potential! The agronomist should decide what kind of fertilizers and what quantity will be necessary to reach and maintain the recommended in the above table reference margins.

Usually granular fertilizer is applied manually by application of superphosphate, Potassium sulphate and Ammonium nitrate during spring-summer planting. Manure shall be mixed with soil 1:1 in the hole where the planting is. Later during the season you may need to apply additional quantity (depending on soil, climate and observed growth). Additional nutrition could be applied before the second season with combined fertilizer (NPK). All of the fertilized quantities must be defined from agronomist based on the soil analyses and on the observation of the plants. Where the climate is very dry the fertigation may be the only possible solution for delivering the necessary substances.

Additional information concerning planting and growing of BIO TREE paulownia cultivars could be found at the www.paulowniatrees.eu