



Durability by Design – Rot and Insect Resistance

Over the past decade or so, the imported wood species *Paulownia Tomentosa* (PAW) has made commercial headway in the U.S., gaining traction as an exterior trim product with a few builders in Oregon and parts of the Midwest. This bulletin is intended to send a word of caution to those who may be considering paulownia for exterior applications under the *false* portrayal that it is naturally decay and bug resistant, and a replacement for cedar.

Material suppliers, designers and builders constantly seek out methods and materials that increase the quality and durability of today’s buildings. This peace of mind assuages both ownership and stewards for environmentally responsible resource management. As responsible suppliers and users of wood construction materials, it is important that the wood products industry use *proven*, high quality products to reduce liability exposure and engender confidence with end-users.

About Paulownia

According to the online Wood Database, paulownia, often referred to as the other balsa, is one of the fastest growing wood species capable of growing up to ten feet per year. It is quite often grown plantation style in China and is considered an invasive species in southeastern U.S. managed forests. Paulownia is falsely portrayed as ‘naturally decay resistant’ because of its *extractive content by weight*. Recent Forest Products Lab studies clearly show that assuming a level of extractives by weight is not a guarantee against rot and insects.



Paulownia tomentosa also known as the Princess Tree.

The FPL Studies

The issue of wood’s extractive content with respect to fungal and insect resistance has long been studied by various researchers, chief among those the Forest Products Laboratory in Madison, Wisconsin. Extractives – the non-structural chemical compounds which are concentrated in the heartwood – are thought to be a key defense mechanism against many environmental stresses. A 2013 study entitled, “The role of extractives in naturally durable wood species” (FPL-GTR-224 - Kirker, Blodgett, Arango, Lebow, Clausen) exposed eight species to wood decay fungi and termites. The FPL found that even though Paulownia has what is considered to be a high ‘extractive content weight’, it simply didn’t correlate to an expected level of durability performance in testing. PAW showed signs of decay within two years.

“(Paulownia) PAW was not durable in this study when exposed to either termites or fungi... PAW generally performed no differently than SYP, and often became less durable than SYP after extraction and exposure to wood decay fungi.” – Forest Products Lab

Conclusion

For Paulownia to play a reliable role in exterior applications, proper treatment against mold, mildew and insects should be considered. The next edition of FPL’s Wood Handbook will include an updated durability rating for paulownia. A copy of the complete FPL study is available at Belcofp.com. For more information contact [Roger Roatch](mailto:Roger.Roatch@belcofp.com), VP Sales and Business Development at 360-426-8900 x 203.

ABOUT BELCO FOREST PRODUCTS — In business since 1978, the company operates three manufacturing plants on 16 acres in Shelton, Washington. Belco produces a variety of exterior wood products including the best-selling ArmorCoat XT brand, a line of premium treated trim for residential and commercial applications. All Belco products are available through leading distributors nationwide.

