

# Veneer Cutting and Gluing Properties of *Albizzia moluccana*, Miq.

A PRELIMINARY STUDY

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A preliminary study on veneer cutting and gluing properties of *Albizzia moluccana* Miq., an exotic species, showed that the species is suitable for making good quality veneer and plywood and can be used for making tea boxes and crates. It is also suitable for making corestock.

একটি বিদেশী প্রজাতি আলবিজিয়া মলাক্কানার ভিনিয়ার কাটা এবং আঠা সংযোজন ক্ষমতার উপর প্রাথমিক নিরীক্ষা চালানো দেখা যায় যে ইহা ভিনিয়ার ও প্রাইউড তৈয়ারীতে—বিশেষতঃ চা-পেটি, প্যাকিং বাক্স এবং অন্তর্ভুক্তি নির্মাণে বেশ উপযোগী।

## INTRODUCTION

*Albizzia moluccana*, Miq., a species of the *Leguminosae* family and *Mimosae* subfamily, is widely used as a shade tree in the tea gardens of Sylhet. It is a fast growing exotic from Java and Molucca and is reported to attain a height of 32 ft. in about four years time. The wood is soft and light and has been reported by Troup (1921) to be suitable for the manufacture of tea boxes and lumber. The present study was undertaken to explore its suitability for veneering and gluing.

## EXPERIMENTAL

An *Albizzia moluccana* log procured from the Khadimnagar Tea Estate, Sylhet for testing its suitability for the manufacture of safety match splints and boxes (Azizullah 1971) was crosscut into a 51-inch long bolt. The bolt was fairly cylindrical with an average diameter of 15.75 inches. The pith was eccentric and its position was 0.5 inches away from the geometric centre at one and 2.5 inches away at the other end of the bolt.

At ambient temperature, *Albizzia moluccana* could not be peeled satisfactorily and hence the bolt

was heated in hot water in a soaking tank at 130°F for 23 continuous hours. A 54 inch Coe Veneer Lathe was adjusted to 91°30' knife angle, 0.015 inch vertical opening and 0.0482 inch ( $\approx 15\%$  nose bar compression) horizontal opening to peel the bolt at 1/16 inch (0.064 inch) target thickness. The bolt peeled smoothly. The thickness of the veneer was measured to the closest of thousandth of an inch with a thickness micrometer. Veneer thickness was uniform, the average being 0.061 inch. The veneer sheets were dried in a roller conveyor dryer to a target moisture content of 8-10 percent.

A urea formaldehyde adhesive (Kaurit 285 powder catalysed with 500 hardener powder) was prepared using sufficient water to bring it to the required consistency. A 26 inch Black Brothers glue spreader was adjusted to spread the prepared glue on veneer sheets at the rate of 40-42 lbs. single glue line. Four 26 inch x 26 inch three-ply plywood panels were assembled and pressed in a Williams and White 160-ton Laboratory hydraulic hot press at a specific pressure of 200 psi for five minutes at a temperature of 250°F.

## RESULTS

Five  $3\frac{1}{4}$  inch x 1 inch X  $\frac{9}{16}$  inch plywood shear test specimens were cut from each of the four panels and tested to failure in a Riehle plywood glue shear test machine. The load was applied at the rate of 500 lbs. a minute (ASTM-D906-64). An average load at failure of 322 psi and an average wood failure of 91.5 percent were obtained.

## DISCUSSION

The experiment was necessarily a limited one. However, it indicates that *Albizia moluccana* produces good quality veneer and glues well. It may be used in making pallets, tea boxes and crates and may serve as good core stock (Walters 1971, Troup

1921 ). Because of its fast growth, planting of *Albizia moluccana* can be profitable in Bangladesh to meet the demand of lumber and plywood industry, especially for tea chest plywood.

## REFERENCES

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