INFORMATION LEAFLET
FOREIGN WOODS

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MUSIZI
Maesopsis eminii Engl.
(and M. berchemioides A. Chev.)
Family: Rhamnaceae

By

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Introduction

The generic name, Maesopsis, is derived from that of another genus, Maesa (Family Myrsinaceae), but the resemblance between the trees is rather slight and is noticeable chiefly in the shape and venation of the leaves. The species name, eminii, honors Emin Pasha (1840-1892), an African explorer, administrator, and botanist (9).[2]

Many botanists believe that Maesopsis eminii Engl. in East Africa and another species named later, M. berchemioides A. Chev. occurring in West Africa, are practically synonymous. The trees of both species are nearly identical botanically. From the point of view of the forester, however, the trees differ greatly in value for timber production, for they decrease in size across the African continent from the east to the west (11).

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[1] Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

[2] Underlined numbers in parentheses refer to the list of numbered references at the end of the report.

Distribution and Habitat

Musizi occurs from Liberia to the Cameroons, along the Gulf of Guinea, through the Congo to northwest Tanganyika and the Nyanza region of Kenya and Uganda (9, 10). It is found in the semitropical rain forest in Kenya, at an elevation of 5,500 feet, where it is said to be occasional or locally frequent (13). It is of local occurrence in Tanganyika. It is reported to grow in Uganda chiefly on soils from which the original trees were removed and on grassland at the edge of the forest. Musizi is considered of primary importance as a colonizer of the grassland (1, 7, 9). It is primarily a tree of the wetter forest areas and is not long lived (8).

Other Common Names

Musizi is known also by the following names (5, 7, 8, 9, 10, 13):

Awuru (Liberia)
Bu-Ay-Wreh (Liberia)
Essenge (Cameroons)
Muguruka (Uganda)
Muhongera (Uganda)
Muhumula (Uganda)
Muhunya (Kenya)
Mutere (Kenya)
Ndunga (Uganda)
Nsira (Uganda)
Omuhumula (Uganda)
Omuside (Uganda)

The Tree

Size and Form

Musizi usually attains a height of 50 to 90 feet, but in Kenya and Uganda it may reach 150 feet. It is seldom over 50 feet high in Nigeria and Togo. The diameter may range from 16 inches to 4 feet. The bole is generally straight and clear for 30 to 70 feet. When buttresses are present, they are usually short and blunt (7, 10, 13). Numerous small, persistent, leafless twigs often remain on the trees (9).

Bark

The bark is thick, silvery gray to almost white, coarse and deeply fissured. A cut or blaze may vary in color from pale red to yellow-white (7, 8, 9, 13).

Leaves

The leaves are alternate to sub-opposite, glossy, 3 to 6 inches long and 1 to 2 inches broad, with widely spaced serrations (5, 8, 9).

Flowers and Fruit

The small, green flowers are in axillary clusters. The fruits are 3/4 to 1 inch long, solitary, or in pairs or small clusters. They resemble small plums but are yellow at first, turning black after falling (8, 9).

The Wood

Color

The heartwood is bright yellow-green when freshly cut, becoming golden brown, russet, or dark brown on exposure. The sapwood is nearly white, sharply distinct from the heartwood and up to 3 inches thick (7, 8, 9, 10, 13).

Luster

Musizi has a satiny luster (5).

Odor and Taste

The wood is odorless and tasteless when dry (8).

Weight

Musizi weighs about 30 pounds per cubic foot, air-dry at 12 percent moisture content (4), and about 68 pounds per cubic foot in the green condition (7, 8, 10, 13).

Mechanical Properties

The wood is rated as soft and light but firm. It is reported to be generally stronger than most woods of the same light weight. Reports from the British colonies compare musizi with Scotch pine (Pinus sylvestris), with which it is about equal in both weight and strength when seasoned (7, 8, 9, 10, 13). Values obtained for the mechanical properties of musizi in the green and air-dry condition are presented in table 1.

Seasoning and Shrinkage

The wood air seasons fairly rapidly, but although Eggeling and Dale (8) report that there is no tendency to split or check and that knots remain sound, small-scale air-drying tests made at the British Forest Products Research Laboratory show that the wood there has a tendency to split,

warp, and collapse in drying (10). Kiln schedule 5[3] of the British Forest Products Research Laboratory has been recommended for this wood (3). The standard U. S. Forest Products Laboratory schedule that appears most appropriate for 4/4 stock is T6-D2.

The shrinkage in seasoning to 12 percent moisture content is reported to be about 1/2 inch per foot in a tangential direction and about 5/16 inch in a radial direction (9).

Durability

Musizi is not resistant to termites or fungi, and although it is much less susceptible to attack by decay and borers than many timbers of the same class, it should not be used in contact with the ground unless treated with a preservative. It takes treatment with preservatives well (1, 7, 8, 9, 10).

Working Characteristics

The wood is reported to be easy to work with most tools, and it finishes to a smooth, lustrous surface. It is liable to tear, however, in the area of pin knots and wound occlusions. A tendency to pick up in the planing of quarter-sawn stock can be overcome by a 20° cutting angle, and chipping in drilling and morticing can be prevented by adequately

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[3]Kiln Schedule 5, of the British Forest Products Research Laboratory (3) is as follows:

Moisture content (percent) of the wettest timber on the air-inlet side at which changes are to be made	Temperature (Dry bulb)		Temperature (Wet bulb)		Relative humidity Percent (approx.)
	°F.	°C.	°F.	°C.	
Green	120	48.5	115	46	85
60	120	48.5	113	45	80
40	125	52	116	47	75
35	125	52	114	46	70
30	130	54.5	116	47	65
25	135	57	118	48	60
20	140	60	120	49	55
15	150	65.5	122	50.5	45
10	160	71	123	51	35

supporting the timber. Musizi nails and stains well, but the wood requires a filler (5, 8, 9, 10, 13). Pin knots are often present, and flat-sawn material may show a marked waviness of the grain (8).

Uses

Musizi is said to be one of the most useful light hardwoods in Central Africa (9). It is used for some of the purposes for which imported softwoods, such as Scotch pine (Pinus sylvestris), have been employed (1). It has been used for many years in Uganda for the construction of missions and native buildings, and it is widely employed in the Belgian Congo. The wood is suitable for furniture, joinery, and indoor construction, except where high-quality paint finish is essential. It should not be used in contact with the ground unless it is first treated with a preservative (5, 8, 9, 10, 12, 13). The wood is also considered suitable for many of the same purposes for which Cedrela is used (11).

Other Products

An edible oil is present in the fruits of musizi. The bark is used in the Congo as a roofing material for native huts, and it is used extensively as a native medicine (9).

Structure

Growth rings are indistinct or absent. The pores are visible without magnification, variable in abundance but not crowded, mostly solitary but also in multiples of 2 or 3, rarely more. Parenchyma surrounds the pores, sometimes with winglike extensions that may become confluent. The rays are very fine; invisible without magnification on cross and tangential sections; low and inconspicuous on the radial surface. The wood resembles some of the softer leguminous woods and, like them, has vestured pits on the vessel walls (5, 6, 9).

Supplies

The timber is exported chiefly from East Africa, but supplies are also available in West Africa (10).

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Table 1.--Mechanical properties of musizi[1]

Property	Species and Origin: Musizi (Maesopsis eminii) Uganda, Africa
Moisture content	
Green	165
Air-dry	12
Weight per cubic foot	
At 50 percent moisture content, lb.	38
At 12 percent moisture content, lb.	30
Static bending	
Modulus of rupture	
Green, p.s.i.	7,600
Air-dry, p.s.i.	10,400
Modulus of elasticity	
Green, 1,000 p.s.i.	1,250
Air-dry, 1,000 p.s.i.	1,430
Work to maximum load	
Green, in.-lb. per cu. in.	7.4
Air-dry, in.-lb. per cu. in.	7.9
Total work	
Green, in.-lb. per cu. in.	13.4
Air-dry, in.-lb. per cu. in.	16.3
Impact bending	
Height of drop causing complete failure (50-pound hammer)	
Green, in.	27
Air-dry, in.	22
Compression parallel to grain	
Maximum crushing strength	
Green, p.s.i.	3,990
Air-dry, p.s.i.	6,420
Hardness[2]	
Green - end, lb.	800
Green - side, lb.	680
Air-dry - end, lb.	1,020
Air-dry - side, lb.	700

Table 1.--Mechanical properties of musizi[1] (continued)

Property	Species and origin
	Musizi (Maesopsis eminii) Uganda, Africa
Shear	
Maximum shearing strength parallel to grain	
Green.....p.s.i.	950
Air-dry.....p.s.i.	1,370
Cleavage; load to cause splitting	
Green.....lb. per in. of width	345
Air-dry.....lb. per in. of width	300

[1]This table shows strength values obtained in tests on musizi at the British Forest Products Research Laboratory (2).

[2]The load in pounds required to embed a 0.444-inch steel ball to half its diameter.