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Xylia xylocarpa (Roxb.) Taub.

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Forest & Landscape

SEED LEAFLET

No. 101 December 2004

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Xylia xylocarpa (Roxb.) Taub.

Taxonomy and nomenclature

Family: Leguminosae subfamily Mimosoideae
Synonyms: *Xylia dolabriformis* Benth, *X. kerrii* Craib and Hutch, *Inga xylocarpa* (Roxb.) DC, *Mimosa xylocarpa* Roxb.
Vernacular/common names: so-krach (Khmer), cam xe (Vietnamese), d(a)eng (Thailand, Laos); irul (Eng.)
Varieties: The genus contains 12 species mostly in Africa and Madagascar. Only one species in SE Asia. The species may be divided into two morphological varieties: *Xylia xylocarpa* var. *xylocarpa* from India and Myanmar with almost glabrous leaflets and anthers with glands, and *X. xylocarpa* var. *kerrii* (Craib & Hutch) Nielsen from Myanmar, Thailand and Indochina with hairy leaflets and anthers without glands.

Open pod with seeds. Photo: Lars Schmidt

Distribution and habitat

Native to Indochina, Thailand, Myanmar westward to India. Occasionally planted in Peninsular Malaysia. In Indochina occurring throughout Cambodia and in the south-central part of Laos and Vietnam, from approximately 17°N. Pioneer species in dry evergreen to semi-deciduous forest, and climax species in dry dipterocarp forest with 3-5 months of dry season. Grows on well drained sandy or rocky soils, usually on lowland plains or low hills, occasionally up to 850 m altitude (Bolawen Plateau, Laos).

Uses

The wood is hard and durable and makes excellent material for all kind of construction, boats, railway sleepers, furniture, turnery and household implements. Bark and fruits are used in traditional medicine.

Botanical description

Deciduous tree, in dry areas usually up to about 20-25 m tall; old trees on moist fertile sites occasionally up to 40 m. Bole often straight and cylindrical albeit sometimes with buttress development and somewhat fluted. Bark flaky, grey to light yellow-brown or pinkish, peeling off into irregular fragments. Leaves spirally arranged, bi-pinnately compound with 1 pair of pinnae, each with 3-6 pairs of opposite oval leaflets, largest terminal pair of leaflets up to 10-15 cm long and 5-6 cm wide; basic leaflets much smaller. Each leaflet has a basic gland. Flowers small, yellowish. Stamen 10.

Fruit and seed description

Fruit: flat, dehiscent, compressed, woody pod, 10-15 cm long, 5-6 cm wide, containing 5-10 seeds. The pod is light brown with prominent cross nervation outside and glossy red-brown inside; curling up when dry.
Seed: irregular but often round or ellipsoid, compressed, glabrous, light to dark brown, 7.5-9 mm wide, 12-14 mm long, and 1.5-2 mm thick. Pleurogramme inconspicuous and same shape as the seed. Seed weight 245-260 grams per 1000 seed, or about 4000 seeds per kg.

Flowering and fruiting habit

Flowers hermaphroditic or male. Main flowering normally before or just after leaf flushing. Often long flowering and fruiting season, in southern Vietnam Nha Trang) flowering in November to December, in southern Laos flowering season into April. Fruiting in southern Vietnam in end April-May, in Laos main fruiting in March to April. Reproductive success is variable from site to site and year to year. In poor crops pods may develop without or with very few developed seed.

Harvest

Fruits are harvested when they have turned dry and yellow and the first fruits have started to open; seeds should have lost their greenish immature colour. Fruits may be harvested directly from the tree before dehiscence, as the seeds are lost when the pods open. Harvesting implies climbing or use of long handled tools. The peduncle breaks relatively easily when the pods are about mature. Where the ground can be cleaned

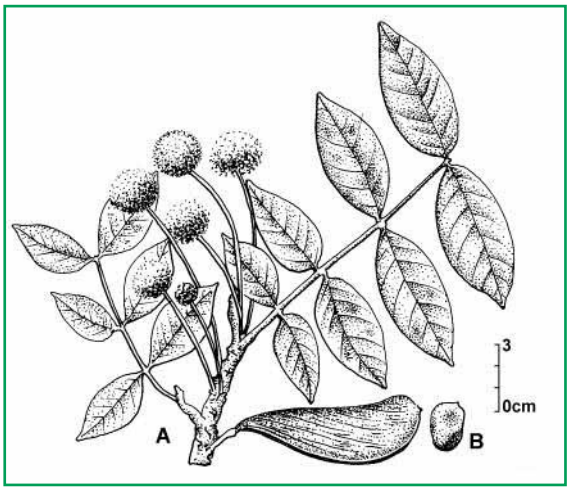
reasonably well for vegetation, the seeds can be collected on nets or tarpaulins under the trees or mounted as funnels. However, for large trees seeds may be dispersed quite far away from the trunk, so there is likely to be a large loss by that method.

Processing and handling

Harvested fruits are dried in the sun to dehisce. Often a relatively strong drying is required. The pedicel attachment is not strong, so the seeds are released when the pods open. The pods are removed manually. Seed can be cleaned by screening and blowing; it is easy to achieve a high purity.

Storage and viability

The seed is orthodox and imposes little problems when stored dry (< 8-10% mc) and cool in airtight containers. Reduction of moisture content to about 3% possible by additional sun-drying. Seeds can be stored for > 3 years at ambient termperature. Storage at ambient temperature may cause insect problems.



A, flowering branch; B, seed. From: Forestry Compendium, CABI International

Dormancy and pretreatment

Fresh seed needs no pretreatment. Dried, stored seeds need pre-treatment for imbibition and germination to take place. Pretreatment e.g. in 70-80 (-95)°C warm water (quick dip and left to cool in the water) or manual scarification (clipping, filing, burning).

Sowing and germination

Best sowing medium is sandy loam. The seeds will start germination after 3-4 days and germination is complete with most seedlings of a seed-lot with unfolded first pair of leaflets after 5-8 days. Germination is epigeal. Initial growth is fast. The seedling develops a deep taproot. First pair of leaves with one pair of leaflets. Normally sown directly in polythene bags. Deep bags are recommended in order to allow long root development.

Phytosanitary problems

Seed is occasionally attacked by coleoptera (brucheids) before harvest. Young seedlings can be attacked by caterpillars, e.g. leaf rolling caterpillars.

Selected readings

Forest Inventory and Planning Institute 1996. *Vietnam Forest Trees.* Agric. Publ. House, Hanoi. Page 448.

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