LOCAL NAMES
Arabic (hhabb el misk,anbar bûl); Chinese (ye you ma,shan you ma,huang ku,huang kai); English (ornamental okra,musky-seeded hibiscus,musk okra,musk mallow,annual hibiscus,fautia,yorka okra); French (Ambretté,graine de musc,ketmie mosqué,gombo mosqué); German (bisamstrauch,bisameibisch); Italian (abelmosco,fior muschiato,ibisco muschiato,ambretta); Thai (chamot ton,mahakadaeng,som chaba); Vietnamese (cây bông vàng,búp vàng)

BOTANIC DESCRIPTION
Abelmoschus moschatus is a delightful, soft, herbaceous trailing plant, 0.5-2.5 meters high with soft hairy stems and a long slender tap root. It has an underground tuber and dies back to this tuber in the dry season, emerging again with the first substantial rains of the wet season.

Leaves alternate, rough, hairy,heart-shaped or 3-5 palmately lobed with serrated margins and linear-oblong or triangular lobes, 4-10cm x 4-9 cm.

Flowers regular, bisexual, involucral bracts 8-12, hibiscus-like, usually watermelon pink but sometimes white or cream - always with a dark center, very prolific and are borne between October and April in some places, depending on the timing of the wet season.

Fruit a hirsute capsule, 6-8 cm long, ovoid-cylindrical.

Seeds subreniform and black, held in hairy, tough but papery capsules, musky-scented.

The generic name Abelmoschus is derived from Arabic ‘abu-l-mosk’ (father of musk) in allusion to the smell of the seeds whereas the specific epithet means ‘musk smelling’.

BIOLOGY
It is in flower from July to September, and the seeds ripen from August to October. The scented flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects.

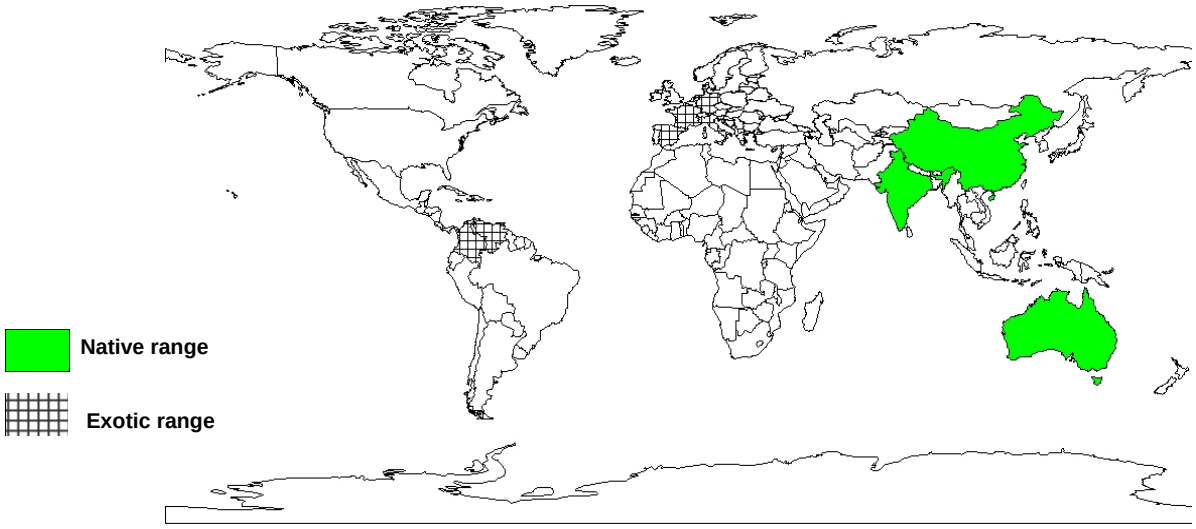
ECOLOGY
Usually weedy in open and disturbed areas. In Australia, it occur in open woodlands or grasslands, most often found on rocky hillsides but sometimes on flat lands. In Guam, it occurs in marshy locations. In Fiji, it is found from near sea level to an elevation of about 450 m as a weed naturalized in gardens, plantations, ricefields, and clearings, and also occurring along trails and on the edges of forests.

BIOPHYSICAL LIMITS
Mean annual rainfall: 1000-1400mm, Altitude: 450m

Soils: Plant prefers light (sandy), medium (loamy) and heavy (clay) soils and requires well-drained soil. The plant prefers acid, neutral and basic (alkaline) soils, it tolerates a pH in the range 6-7.8. It cannot grow in the shade. It requires moist soils.

## DOCUMENTED SPECIES DISTRIBUTION

Native: Australia, China, Cook Islands, Fiji, India, Samoa
Exotic: Colombia, Denmark, France, Germany, Italy, Netherlands, Spain, Venezuela




The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: It is a relative of the edible Okra and tubers and foliage were a source of food for Aborigines.

Essential oils: Ambrette oil obtained from seeds posses an odor similar to that of musk and its aromatic constituents have long been used in perfumery industry. Different grades of essential, or aromatic absolute, are marked in Europe as high-grade perfumes. The seeds are valued for the volatile oil present in the seed coat. Seed analysis report 11.1% moisture, 31.5% crude fiber; 14.5% lipids, 13.4% starch, 2.3% protein, volatile oil (0.2-0.6% ) and ca/ 5% resin. Analysis of volatiles report myricetin-3-glucoside and a glycoside of cyanidin in flowers, an aromatic constituent in seeds, beta-sitosteral and its beta-D-glucoside, myricetin and its glucoside in leaves and petals and beta-sitosterol from dry fruit husk.

Medicines: In India, roots, leaves (rarely), and seeds of ambrette are considered valuable traditional medicines. The bitter, sweet, acrid, aromatic seeds are used as a tonic and are considered aphrodisiac, opthalmic, cardiotonic, digestive, stomachic, constipating, carminative, pectoral, diuretic, stimulant, antispasmodic, deodorant, and effective against intestinal complaints, stomatitis; and diseases of the heart, allays thirst and checks vomiting. According to Unani system of medicine seeds allay thirst, cure stomatitis, dyspepsia, urinary discharge, gonorrhea, leucoderma and itch. Roots and leaves are cures for gonorrhea.

Fibre: The bark is processed into fibre and e root mucilage as a sizing for paper.

TREE MANAGEMENT
Ambrette is cultivated as pre-kharif crop in India. It is usually sown in March-April but as late as the first week of July in Central India. Seed rates of 41g/kg are optimum. Application of dried Neem leaves (500Kg/ha) at last ploughing increased oil content and quality. April sown crop start flowering in September; fruits ripen from November to January and are harvested when fully mature. Application of fertilizers improves growth of plant, and seed yields but some studies indicate that use of chemical inputs result in negative impact on oil content and quality. Harvested capsules are sun dried and seeds dehisce when the capsules burst. The oil for perfumery is extracted by steam distillation of crushed seeds.

PESTS AND DISEASES
No serious insect or disease problems have been reported. However, spider mites, slugs and whiteflies are to be controlled. Root rot may occur in poorly drained soils. It is reportedly susceptible to powdery mildews.

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