NEEM

NEEM Margousier, margosier

Azadirachta indica Meliaceae (Mahogany)

ECHO® PLANT INFORMATION SHEET

Description

The Neem tree is native to arid regions of Burma and India. It has been introduced to other arid tropical regions in Africa, Asia, and the New World. Trees will reach up to 30 m tall with limbs reach-ing half as wide.

Uses

The pharmaceutical and pest control properties of Neem substances have long been recognized. The twigs are used frequently as bactericidal toothbrushes. A leaf tea has been used to reduce malaria fever. Neem leaf juices have been used to alleviate human skin disorders such as rashes, boils, and fungal infections. Neem extracts are well known as foliar insect repellents and insecticides. Neem leaves mixed in with stored grain have traditionally been used in India to repel insects and prevent food and seed losses. The principal active compound in the leaves is azadirachtin, which repels pests, acts as an antifeedant, and disrupts insects' growth and reproduction. Several bioactive compounds are found in the leaves and other tissues, however, the Neem seed kernels are the main source of azadirachtin. Neem seed contains the most concentrated and accessible amounts of other potentially useful compounds as well. Neem seed extracts are effective in contolling bruchid beetle pests in grain storage and even dried leaves are effectively used to retard grain storage damage.

Neem seed oil, used primarily in soap and skin ointments production, is reported to be an effective human contraceptive due to the oil's spermicidal properties. Neem cake (residue left after oil is removed from the seed), sometimes used as cattle feed, is a useful soil additive supplying both high-nutrient fertilizer and nematode control. Apparently, Neem cake can also hinder soil denitrification, a frequent cause of soil nitrogen depletion. Neem's fast-growth rate and its tolerance of hot-dry climates have made it a valuable shade and firewood species in arid regions and a useful species for arid lands reclamation. This strong, dense, termite-resistant wood also may be used for charcoal production. The bark produces tannins, a fiber used to make rope, and a resin used to make glue. Bark is used medicinally as a remedy for fever, and fruit pulp is also used as a tonic. Leaves are used as mulch and green manure, and can also be used as fodder. The leaves have a crude protein content of 12-18%, but because they have a bitter taste, livestock usually prefer other foods.

Cultivation

- SOIL: WELL-DRAINED; WILL GROW IN POOR, UNFERTILE SOIL
- RAINFALL: 400-1500 mm (16-60 in) annually; drought tolerant
- LIGHT: FULL SUN
- TEMPERATURE: UP TO 48º C (111º F). Frost sensitive
- ALTITUDE: 0-1500 m
- GERMINATION: Neem propagates well from seed in regions with adequate rainfall. Germination occurs in 7-12 days. Neem seeds, however, are not long-lived. Planting needs to be done soon (within 3-4 weeks) after seed collection. Germination rates can be significantly increased by removing the endocarp (the outer shell) from the seed before planting. In arid regions, seedlings are initiated in nurseries and transplanted to the field when 10-20 cm (4-8 in) in height. Neem seedlings can be produced vegetatively by air layering, cuttings, grafting and tissue culture, however, they are usually grown from seed in nurseries as bare-root stock or in containers.

Harvesting and Seed Production

Neem trees begin bearing fruit at 3-5 years of age. Flowering and fruiting are seasonal. One-inch long oval fruits (drupes) contain 1/2-inch long seed surrounded by a resinous pulp. To sustain seed viability of home-grown seeds, the pulp of the freshly fallen fruit should be removed from around the seed and the seeds allowed to air-dry in the shade. Well-dried seeds

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may be shipped for later planting but viability declines rapidly in storage. Neem seeds purchased from ECHO or other sources need to be planted as soon as they are received because of Neem seeds' short viability period. Because ECHO's seed production is seasonal, Neem seeds may not be available on demand. The following agencies have been identified as other potential Neem seed sources:

- The Banana Tree ILCA, The Tree Seed Program, 715 Northampton St,. FLAG Unit Ministry of Energy and Easton, PA 18042; P.O Box 5689 Regional Development Phone: 215/253-9589 Addis Ababa, Ethiopia PO Box 21552 www.banana-tree.com Nairobi, Kenya
- Sandy Mush Herb Nursery 316 Surrett Cove Road Southwood Cove Leicester, NC 28748, ,
- Neem Tree Farm Company, 602 Ronele Dr. Brandon,FL 33511 Phone: 813/661-8873

Pests and Diseases

Azadirachta indica has few serious pests or diseases. The most serious insect pests are scale insects, including the neem scale (Palvinaria maxima) and the oriental yellow scale (Aspidiotus orientalis), both of which can cause considerable damage.