

***Stephania abyssinica* (Quart.-Dill. & A.Rich.) Walp.**

የአይፕሮስ ሐረግ፣ ዕፀ እየሱስ



***Stephania abyssinica* (Quart.-Dill. & A.Rich.) Walp.**

Local and common names: የአይጥ ሐረግ Ye'ayt Hareg፣ ዕፀ እየሱስ Etse Eyesus, እንጎቺጎ Engochit (Amh); Hidda Kalaalaa, Hidda hantuutaa, Kaalaala, Alaalaa (Oro); ሐረግ ባይታ Hareg bayta, መጎጎ ኢፍ Megogo if (Tig); Tale-telling plant (Eng)

Voucher number and identification: GA053/AHRI/2025

Synonyms: *S. abyssinica* is known by two synonyms, namely *Clypea abyssinica* and *S. hernandiifolia* var. *abyssinica*.

Varieties recorded in Ethiopia: *S. abyssinica* has two infraspecific taxa in Ethiopia, namely *S. abyssinica* var. *abyssinica* and *S. abyssinica* var. *tomentella*.

Family: Menispermaceae

Botanical and habitat distribution

S. abyssinica is a perennial, creeping, or climbing plant with long, slender stems that are usually green and sometimes tinged with purple. It can grow along the ground or climb over shrubs, trees, fences or any available support. Its leaves are large, broad, and almost round, with the petiole attached to the center like the handle of an umbrella. The plant produces small, greenish flowers in umbrella-like clusters at the points where the leaves meet the stems; male and female flowers are found separately on the same plant but look very similar. The fruits are small, round slightly oval berries that turn reddish or purple when ripe, each containing a single seed. The seeds are horseshoe-shaped, hard, and rough or slightly wrinkled (rugose), enclosed within the fruit. It typically grows in open grasslands, forest edges, hillsides, overgrazed fields, and hedge rows, around cultivated fields and in clearings, and near rivers or wet areas at elevations of 1050-3400 masl.

Conservation status

S. abyssinica is not currently included in the IUCN Red List. However, POWO reports that the species is not threatened, which broadly corresponds to the IUCN category of Least Concern.

Propagation method

S. abyssinica can be propagated from seeds sown in well-drained sandy soil. The outer fleshy layer of the fruit is removed, and the seeds are pressed into and lightly covered with soil. No pre-treatment is required. Additionally, whole plants can be collected and transplanted.

Cultivation in botanic garden

The plant was established in AHRI-ALERT botanic garden in October 2024 using a whole plant collected from the AHRI-ALERT Health Village Compound (Accession number 0103).

Ethnomedicinal uses

Root powder of *S. abyssinica* is widely used in Ethiopian traditional medicine; the powder is either taken alone or as part of poly-herbal prescriptions mixed with other ingredients, and is administered orally and topically. As a single-herb prescription, root powder is used against wound, gonorrhoea, diarrhoea, and syphilis. It is also employed for conditions including stomach-ache, hand tremor, retained placenta, and impotence. As part of poly-herbal formulations, its root powder is used to treat diseases such as rabies, tapeworm infection, syphilis, and diarrhoea, and is also applied topically as an ointment for eczema. It is also employed for haemorrhoids, frequent miscarriage (ጥጥር), menorrhagia, and as a traditional remedy to enhance intelligence. Freshly squeezed root juice is used as a remedy for breast cancer, while pulverized root is valued as an aphrodisiac. The leaf is also used medicinally: it is taken orally for insomnia and stomachache, and applied topically as an ointment against eczema and wound. A decoction of fresh leaf is used to treat gastritis and snakebite. Furthermore, the whole plant is used to treat various stomach disorders, syphilis and common cold.

Major phytoconstituents

Alkaloids such as (-)-curine, pseudocurine, isochondrodendrine, (-) pseudoisocurine and (-) 10-oxoaknadinine) and anthraquinone derivatives like chrysophanol, eomdin and physcion were reported from the leaves and roots of the plant.

Pharmacological and safety evidences

Preclinical Evidences

Antimicrobial effect: Dichromethane and methanol root extracts and isolated compounds demonstrated antibacterial activity against *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa*.

Antimalarial effect: The hydroalcoholic extracts and chloroform fraction of *S. abyssinica* showed antimalarial activity against *P. berghei* infected mice. Isolated compounds from leaf of *S. abyssinica* such as (-) pseudocurine, (-) pseudoisocurine and (-) 10-oxoaknadinine show antimalarial activity.

Gastroprotective effects: The aqueous and hydroalcoholic leaf extracts of *S. abyssinica* showed gastroprotective activities against experimentally induced gastric ulcer models.

Anti-diarrhea and anti-Spasmodic effects: The root and leaf extracts of *S. abyssinica* also showed antispasmodic activities both *in vivo* and *in vitro* models. Whereas the extracts significantly prolonged the time of diarrheal induction, increased diarrhea free time, reduced the frequency of diarrhea episodes, decreased the weight of stool, and decreased general diarrheal score in a dose dependent way.

Vasorelaxant effects: The aqueous and methanol extracts of *S. abyssinica* exhibited vasorelaxation effect on KCl-contracted aortic rings.

Other pharmacological effects: The root and leaf extracts of *S. abyssinica* were reported to have antioxidant, anti-inflammatory, analgesic and wound healing activities.

Clinical studies

No clinical trials report so far.

Safety

The aqueous and hydroalcoholic leaf and root extracts of *S. abyssinica* were found safe when given orally up to the dose of 2000 mg/kg. No deaths or signs of gross behavioural toxicity were observed over a 14-day observation period. Moreover, an acute dermal toxicity test of 2000 mg/kg of the 10% w/w crude extract was also found to be safe.

Research gaps and recommendations

Available data are limited and largely confined to Ethiopia, with no systematic review of existing evidence and no clinical trials. Rigorous pharmacological and phytochemical studies should be prioritized for health conditions supported by ethnobotanical information. Additionally, species specific Good Agricultural and Collection Practices (GACP) should be developed and implemented, to provide standardized, high-quality plant materials for sustainable herbal medicine development and registration.

References

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