

Folk Medicine

Amaranthus spinosus is used as a green food in South Africa, Southern Rhodesia, Portuguese, East Africa, West Africa, India and the Philippines. The plant is eaten by livestock and the seed by birds. The plant has been used as a remedy for menorrhagia, colic and gonorrhoea, as a mild purgative and as a vegetable in the Antilles, India, the Philippines and East Indies. In India and the Philippines it is used for eczema. Other uses of the plant are: in the Philippines the herb as a sudorific, febrifuge and galactagogue; in Ghana for piles and as an expectorant; in Malaya and Mauritius as a diuretic (Watt and Breyer-Brandwijk, 1962). In India, it is also used for skin diseases treatment (Yadav *et al.*, 2009; Prakash *et al.*, 2011), as a diuretic and for retention of urine (Punjani, 2010). *Amaranthus spinosus* is reported to be used in menorrhagia, gonorrhoea, eczema, colic and as a lactagogue (Chopra *et al.*, 1956; Banerji, 1980). In Nigeria the leaves decoction is used for abdominal pain, snake bite and piles (Ige, 2011).

Ethnomedicinally the plant is used as a source to treat several disorders such as the leaves are used as a laxative and applied as an emollient poultice to abscesses, boils and burns. The juice of the root is used to treat fevers, urinary troubles, diarrhoea, and dysentery. The seed is used as a poultice for broken ribs, and in the treatment of internal bleeding, diarrhoea and excessive menstruation. The root is known as an effective diuretic. In South-East Asia a decoction of the root is used to treat gonorrhoea and is also applied as an emmenagogue and antipyretic. The juice of the root is used to treat fevers, urinary troubles, diarrhea and for toothaches (Mathur *et al.*, 2010; Baral *et al.*, 2011). The root is also used as a diuretic and febrifuge (Kirtikar and Basu, 1984). The leaves and roots are applied as poultice to relief bruises, abscesses, burns, wound, inflammation, menorrhagia, gonorrhoea, eczema and inflammatory swelling. *Amaranthus spinosus* is also used as antiinflammatory, antimalarial, antibacterial, antidiuretic, antiviral and in hepatic disorders (Bulbul *et al.*, 2011).

The Nepalese and some tribes in India apply *Amaranthus spinosus* to induce abortion. In Thai traditional medicine, *Amaranthus spinosus* is used to treat diarrhea. In many countries, including those in Africa, the bruised leaves are considered a good emollient and applied externally in cases of ulcerated mouths, eczema, burns, wounds, boils, earache and hemorrhoids. The leaves are also used for gastroenteritis, gall bladder inflammation, abscesses, colic menorrhagia, arthritis and for the treatment of snakebites. The plant ash in a solution is used to wash sores. The plant sap is used as an eye wash to treat ophthalmia and convulsions in children. In Malaysia, *Amaranthus spinosus* is used as an expectorant and to relieve breathing in acute bronchitis. In mainland South-East Asia, it is also used as a sudorific, febrifuge, an antidote to snake poison, and as a galactagogue. During the rainy season which is also malaria endemic season, *Amaranthus spinosus* bark decoction is taken in a volume of about one liter three times a day to ward off malaria (Baral *et al.*, 2011). It is also used as febrifuge and to treat bronchitis and leprosy (Jamaluddin *et al.*, 2011). In India, the leaves are boiled and consumed for 2-3 days to cure jaundice (Jhade *et al.*, 2011b).

It is also used in the treatment of snake bites. Externally, it is used to treat vaginal

discharge, nose bleeds and wounds (Gul *et al.*, 2009).

In Chinese medicine, *Amaranthus spinosus* is used together with other plants for clearing away heat-evil, cooling blood, and promoting urination; and is used for treating acute gastroenteritis, acute hepatitis, acute contagious conjunctivitis, eczema, traumatic injury, dysentery, carbuncle, skin sore, common cold with cough, rheumatic arthralgia, and scorpion bite (Chen, 1993); for the treatment of gastrointestinal diseases (Sun *et al.*, 2008). Polyherbal Chinese medicines compositions (containing *Amaranthus spinosus*) are used for the treatment of hemorrhoid (Zhu, 2011), urolithiasis (Namdeo *et al.*, 2011; Ning, 2012) and gastroenteritis (Ye, 2012). The plant is among some Chinese herbs used for sunscreen and/or whitening in cosmetics (Lai *et al.*, 1997). A beverage, prepared from *Amaranthus spinosus* and other Chinese herbs has effects in clearing heat, and removing dampness (Su, 2007). A herbal dietary supplement composition for lactating mothers in India comprises *Amaranthus spinosus* and other herbs (Singh *et al.*, 2008b).