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Ethnopharmacological Note

## **An Observation of an Unusual Therapeutic Use of *Amaranthus spinosus* L. (Amaranthaceae) by the Garo Tribe of Bangladesh**

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*Amaranthus spinosus* L. is an annual herb which belongs to the Amaranthaceae family. The plant grows in the tropical and subtropical regions of the world (Baquar & Olusi, 1988; Brenan, 1981; Chweya & Eyzaguirre, 1999; Grubbens & Denton, 2004; Schippers, 2002; Van Epenhuijsen, 1974). It can often be spotted in cultivated fields as weeds, waste places, roadsides, garbage heaps and abandoned fields. It is capable of growing both in wet or dry sites. This herb is used as food in different tropical countries, hence known well among tribal and mass people (Kirtikar & Basu, 2001). It is multi-branched, smooth, herbaceous annual growing to 2 ft. Stems and leaves are smooth and hairless, sometimes shiny in appearance. Leaves and stems of the plant contain n-alkanes, octacosanoate, hentriacontane, sterols including fatty acids, free alcohols,  $\alpha$ -spinasterol, proteins and mixture of saponins, composed of oleanolic acid, D-glucose and D-glucuronic acid. It is a good source of calcium, also contains phosphorous, iron, nicotinic acid, ascorbic acid and protein. Roots contain octacosanoate,  $\alpha$ -spinasterol and a number of saponins,  $\beta$ -sitosterol, campesterol, cholesterol, stigmasterol, and stearic, oleic and linoleic acids, quercetin and rutin also isolated from the plant (Ghani, 2003; Ram & Mehrotra, 1993). According to Medicinal Plants Database of Bangladesh (*Amaranthus spinosus* L./ Medicinal Plants Database of Bangladesh), *Amaranthus spinosus* L. has many medicinal properties like astringent, diaphoretic, diuretic, emollient, febrifuge, galactogogue, cooling, laxative, stomachic, antipyretic etc. Ethanol extract of the plant has also been found to be spasmogenic (Azhar-ul-Haq Malik et al., 2004). *Amaranthus spinosus* L. is used in the treatment of internal bleeding, diarrhoea, excessive menstruation, snake bites, boils, stomach disorders, ulcerated mouths, vaginal discharges, nosebleeds and wounds. The root is heating and expectorant; lessens the menstrual flow; useful in leucorrhoea, leprosy and eczema. It is considered specific in gonorrhoea. Paste of the root is used in the treatment of menorrhagia, gonorrhoea, eczema and colic whereas the juice of the root is used to treat fevers, urinary troubles, diarrhoea and dysentery. Plant sap is used as an eye wash to treat ophthalmic and convulsions in children. It improves appetite; and is useful in burning sensation, hallucination, leprosy, piles, bronchitis, leucorrhoea, constipation and flatulence. Decoction of the herb is used as a mouth-wash for toothache. The boiled leaves and roots are given to children as a laxative; they are applied as an emollient poultice to abscesses, boils and burns. Root juice along with sugar or molasses is given in dysentery. *Amaranthus spinosus* has also been shown to have antidepressant activity (Ashok Kumar et al., 2014). It has been noted previously that in China, *Amaranthus spinosus* L. is used to treat diabetes, internal bleeding, diarrhoea and excessive menstruation. The Nepalese and some tribes in India use it for inducing abortion. The root of this plant has diuretic, antipyretic properties and can be applied as an emmenagogue. The root is used to treat gonorrhoea and the seed is used to treat broken bones (Igloo et al., 2005). In Bangladesh it is known in different names in different regions. According to Bangladesh Ethnobotany Online Database, this plant is known as “*Katanotey, Katadenga; Katamaris*” (Chittagong); “*Khuira Kata*” (Mymensingh). It is known as “*Gooyai Apang, Hanuhuya*” among Marma tribe, “*Unthamifi*” (Bawm tribe), “*Mo Gooyai Apang, Kanta Narich*” (Chakma tribe), “*Aangpadi-kaligon*” (Khumi tribe), “*Kan-Chu-Po*” (Murong tribe), “*Chuka hunkoni*” (Rakhain tribe), and “*Raktashol*” (Tripura tribe). A paste of the whole plant is taken for the treatment of malaria, and crushed



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roots of *Mallotus roxburghianus* Mull. Arg. (Euphorbiaceae) and *Amaranthus spinosus* L. are taken with water for the treatment of bleeding from the nose and mouth (Chakma). Fresh leaves are boiled and taken as vegetables (Khumi). Extract prepared from root is taken two to three tea spoonful twice daily until cure to treat pregnant woman with diarrhoea (Rakhain). Leaves and stem are taken as vegetable to treat constipation. The vegetable is also used as appetizer (Murong). Extract prepared from root is taken one cupful twice or thrice daily until cured to treat melaena (dysentery with blood). Paste prepared from leaf mixed with sugar candy is taken one or two tea spoonful twice-thrice daily by the Marma tribe for the treatment of dysuria (pain during micturition). Sap of root is taken once daily for two days for the treatment of dysentery (Tripura). Whole plant is cooked as vegetable with dry shrimp (Chakma, Tripura, Marmaand Bawm) (*Amaranthus spinosus* L./Bangladesh Ethnobotany Online Database). Recently, a new therapeutic use of *Amaranthus spinosus* L. has been noted among the Garo tribe of Sunamganj district in Bangladesh. This plant is named as “*Katakudhuri*” among the tribe. A sixty-five years old herbalist named Martin Munchin, who resides in Narayantala Mission of Sunamganj of Bangladesh, was spotted while using *Amaranthus spinosus* L. to treat burning sensation during urination and breathing difficulties. He has established a new way of using the root and flower of the plant. In case of treating burning sensation and pain while urinating, the root is soaked in water until it is softened. By using mortar and pestle, the root is grinded for extraction of the liquid. The patients are suggested to have one cup of the liquid as medication twice a day. The method for treating breathing problems in patients with *Amaranthus* is a unique one. In this case, peacock (*Pavo cristatus*) feather is used in concert with the flower of *Amaranthus spinosus*. Both are burnt to ashes and patients are prescribed to consume the ashes with pure honey twice a day. The plant was identified at the Bangladesh National Herbarium and accession number given as 43119. To the best of our knowledge, this specific procedure of treatment and medication using *Amaranthus* has never been reported previously.

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Figure 1. *Amaranthus spinosus* L.