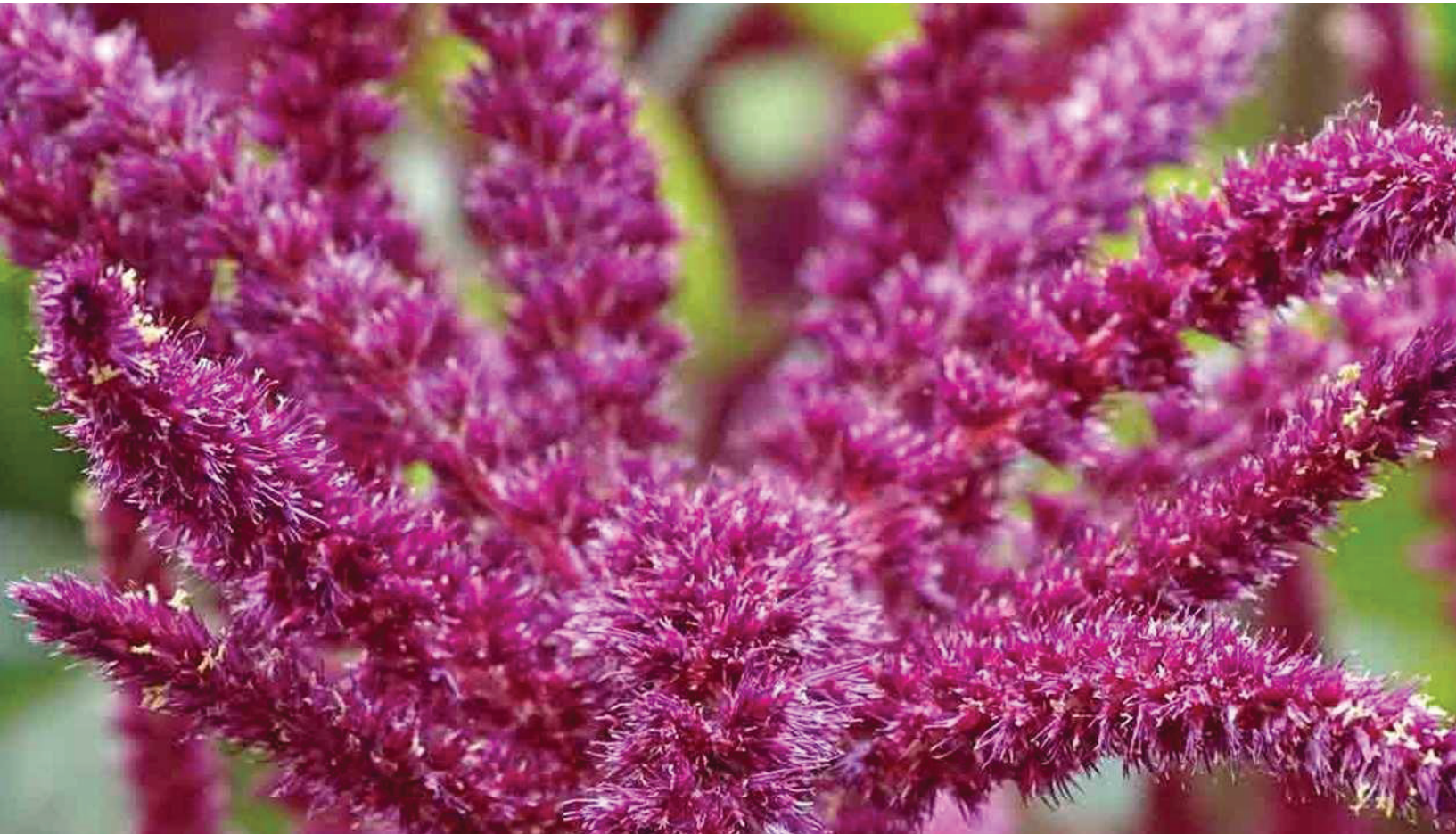




BIOINGRE
ENDEMIC EXTRACTS & RESEARCH

AMARANTH



Amaranthus caudatus

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General Information

Amaranth is a plant that belongs to the Amaranthaceae family and to the Amaranthus genus. Its scientific name is Amaranthus Spp. Amaranth is an annual crop plant that can reach 0.5 to 3 meters in height; it has broad and abundant leaves of bright color, spikes and purple, orange, red and gold flowers.

The Amaranthaceae family includes about 60 genera and more than 800 species whose characteristics change remarkably, depending on the environment in which they grow, which makes it difficult to identify the plant.

Historically, the origin of the amaranth plant has been located in Central and North America (Mexico and Guatemala) and South America (Peru and Ecuador).

Along with corn, beans and chia, amaranth was one of the main food products of the pre-Columbian cultures of America. For the Mayas, Aztecs and Incas, amaranth was the main source of protein and was consumed as a vegetable and popped grain. It was also associated with religious rites, the gods and the cosmic vision of these cultures.

Table 1. Taxonomic classification

Common name	Amaranth
Scientific name	<i>Amaranthus caudatus</i>
Order	Caryophyllidae
Family	Amaranthaceae
Genus	<i>Amaranthus</i>
Specie	<i>caudatus</i>

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Chemical composition

The amaranth grain has approximately 16% protein, a slightly higher percentage than that of traditional cereals: corn 9.33%; rice 8.77% and wheat 14.84%. However, its importance does not lie in the quantity but in the quality of it with an excellent balance of amino acids. It has an important content of lysine, an essential amino acid in the human diet, which is commonly more limiting in other cereals.

It is of high caloric value, carbohydrates, fibers and mineral salts, these small grains are also rich in 16.6% lysine, an essential amino acid found in milk in a proportion of 16.5%. Along with other amino acids, this grain is comparable in nutritional value to milk, which makes it ideal for children and women in pregnancy and breastfeeding.

Uses and applications

Products derived from amaranth are those industrialized such as enriched cereals, flours, concentrates, extrudates, starches, oils and colorants derived from amaranth, which serve as inputs for other food and beverage industries to produce amaranth products or, as raw material for industrial sectors (chemical, cosmetology, pharmaceutical, etc.).

The seeds have great potential in the production of biodegradable plastics. With the leaves of the plant you can make rich and nutritious soups and salads. Silver is also used as an ornament, to make flower arrangements. Its grain is used for seed, sprouts, cereals, flour and industrial inputs.

In addition to its high protein content, little used by the food industry, amaranth (*Amaranthus hypochondriacus*) contains about 20 nutraceutical compounds, two of which have been

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processed by scientists from the Iztapalapa Metropolitan Autonomous University (UAM-I) in order to combat high blood pressure.

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