

Malabar spinach (*Basella alba*) is a Nutritious and Ornamental Plant

Mamatha Hanumappa

September 2019

Fact Sheet 004



Red Malabar Spinach

Background and Culinary Uses

Malabar spinach (also known as Indian spinach, Ceylon spinach, vine spinach and climbing spinach) is a perennial native of tropical Asia, widely consumed in Asia and Africa. It can be grown easily as an annual in summer months, as it does very well in hot weather, unlike real spinach. It is also highly ornamental and is a good candidate for edible landscaping. A vigorous, twining climber, the soft-stemmed plant can grow up to 10 feet long. It produces an abundance of dark green, glossy, oval to heart-shaped leaves which taste like spinach, though the two are not closely related. Like spinach, the leaves (and tender stems) may be eaten raw in salads, sautéed, steamed, boiled and curried. The thick, succulent, peppery-flavored leaves can also be used to condense soups and stew. Due to the mild okra-like sap in leaves, some people prefer to eat it cooked, rather than raw in salads.

Health Benefits

The leaves are a good source of vitamins A and C, calcium, potassium and iron, with many other vitamins and minerals in lower quantities. It has over 3 times more vitamin C than spinach, and over 1.5 times more vitamin A than kale. Shoots have many medicinal properties, and are febrifuge, diuretic and laxative, whereas roots are used to treat diarrhea. Leaf poultice is applied to treat boils and sores. The purple fruit juice is used to treat eye infections, and as a food colorant and dye.

Cultivation

There are two common varieties of Malabar spinach – green (*Basella alba*) and red (*Basella alba* cv. *rubra*, often listed as *Basella rubra*). The red variety has attractive red stems and pink veins on leaves. A tropical perennial, Malabar spinach can also be grown as an annual, and flourishes in hot, humid climates and moist, fertile, well-drained soils. It can tolerate both full sun and partial shade and does reasonably well in poor soils. The plant is flood-tolerant, but sensitive to frost, and will not survive if night temperatures dip below 60 degrees F. Dry conditions, low temperatures, and short days of less than 12 hours induce flowering. A temperature of 75-95°F is considered optimum for germination and growth. It can be grown on rooftops, in large planters, high tunnels, greenhouses, field rows (with black plastic mulch), raised beds, or in yards. This no-fuss plant is also suitable for hydroponics and aquaponics, and can even be grown indoors and in hanging pots, if placed in a brightly lit spot. It is easily propagated through seed and stem cuttings of 8-10 inch length. Seeds sown about an inch deep directly in the field with a spacing of 1 ft. between plants, will germinate in about 6 days, continuing up to 3 weeks. To ensure even and quick germination, seeds may be soaked overnight in water prior to sowing, or mechanically scarified with a file, sharp knife, or sandpaper. Trellising is required for the vine to climb and spread; as an ornamental, it can be grown in hanging baskets and large containers, trellised, or trained to climb on posts, fences, and live support. If sowing directly, seeds may be planted outdoors after the last spring frost date. If transplanting, seeds may be started indoors 6-8 weeks earlier. Plants are watered as needed, and a slow-release fertilizer may be used. Urban farmers who grow two crops of cool season species such as kale and spinach would be highly benefited by planting fast-growing Malabar spinach in the intervening months.

Different stages of the plant



Malabar spinach (*Basella alba*) is a Nutritious and Ornamental Plant

Harvesting

Robust and fast-growing, Malabar spinach is ready for harvest in less than two months. Removing tips of seedlings at 5-6 leaf stage promotes lateral branching. First harvest of 8-12 inches of tender tips and leaves can be done 30-45 days after planting, or about 50 days after seeding. Subsequent harvest can be done every 2-5 days. At the end of summer, when days get shorter, plants bear small white (green variety) or light pink (red variety) colored bisexual flowers on short spikes in leaf axils, quickly followed by purple-black berries (drupes). Both flowers and berries are edible. As the plant ages, and under prolonged high temperatures, leaves turn red due to the accumulation of anthocyanins, leading to a slightly bitter taste. Malabar spinach has a good shelf life and can be refrigerated for up to 4 days.

Pests and Diseases

Malabar spinach is highly resistant to insect and disease, with no known serious threats.

Saving Seeds

Flowers are bisexual and set seed easily. Ripe berries that fall to the ground sprout readily, as they do not undergo dormancy. If saving seed for next season's crop, ripe berries should be dried and stored in a cool, dry place. Over time, seed collected from robust plants will ensure progeny that are best adapted to local growing conditions.

Further Information

1. *Basella alba* - L. <https://pfaf.org/user/Plant.aspx?LatinName=Basella+alba>
2. *Basella rubra* 'Red Stem' <http://www.missouribotanicalgarden.org/PlantFinder/PlantFinderDetails.aspx?kempercode=f219>
3. *Basella* (vine spinach) nutrition facts <https://www.nutrition-and-you.com/basella.html>
4. Malabar spinach, *Basella alba* <https://wimastergardener.org/article/malabar-spinach-basella-alba/>
5. Malabar spinach (*Basella* spp.) <https://avrdc.org/malabar-spinachbasella-spp/>
6. United States Department of Agriculture National Nutrient Database for Standard Reference Legacy Release Basic Report: 11587, Vinespinach, (basella), raw <https://ndb.nal.usda.gov/ndb/foods/>

About the University of the District of Columbia

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, familial/parental status, income derived from a public assistance program, political beliefs, reprisal or retaliation for prior civil rights activity. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, this information is available in languages other than English. To file a complaint alleging discrimination, please complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office or write a letter addressed to US Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410 and provide in the letter all of the information requested in the form. Submit your completed letter or form to USDA via fax: (202) 690-7442; or email: program.intake@usda.gov. To request a copy of the complaint form, call (866) 632-9992. USDA is an equal opportunity provider, employer and lender.

The University of the District of Columbia is an Equal Opportunity Affirmative Action institution. The University prohibits discrimination or harassment against any person on the basis of the actual or perceived actual race, color, religion, national origin, sex, age, disability, sexual orientation, gender identity or expression, family responsibilities, matriculation, political affiliation, marital status, personal appearance, genetic information, familial status, source of income, status as a victim of an intrafamily offense, place of residence or business, or status as a covered veteran, as provided for and to the extent required by District and Federal statutes and regulations. This policy covers all programs, services policies, and procedures of the University, including admission to educational programs and employment. The University emphasizes the recruitment of minorities, women, disabled individuals, disabled veterans, Vietnam era veterans, and other eligible veterans.

El Departamento de Agricultura de EE. UU. (USDA) prohíbe la discriminación en todos sus programas y actividades por motivos de raza, color, nacionalidad, religión, sexo, identidad de género (incluida la expresión de género), orientación sexual, discapacidad, edad, estado civil, estado familiar / parental, ingresos derivados de un programa de asistencia pública, creencias políticas, represalias o represalias por actividades previas de derechos civiles. (No todas las bases prohibidas se aplican a todos los programas.) Las personas con discapacidades que requieren medios de comunicación alternativos para obtener información sobre el programa. (por ejemplo, Braille, letra grande, cinta de audio, lenguaje de señas estadounidense, etc.) debe comunicarse con la Agencia responsable o con el TARGET Center de USDA al (202) 720-2600 (voz y TTY) o comunicarse con el USDA a través del Federal Relay Service al (800) 877-8339. Además, esta información está disponible en otros idiomas además del inglés. Para presentar una queja alegando discriminación, por favor complete el Formulario de Queja por Discriminación del Programa del USDA, AD-3027, que se encuentra en línea en http://www.ascr.usda.gov/complaint_filing_cust.html, o en cualquier oficina del USDA o escriba una carta dirigida a Departamento de Agricultura de los Estados Unidos, Oficina del Subsecretario de Derechos Civiles, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410 y proporcionar en la carta toda la información solicitada en el formulario. Envíe su carta o formulario completado al USDA por fax: (202) 690-7442; o correo electrónico: program.intake@usda.gov. Para solicitar una copia del formulario de queja, llame al (866) 632-9992. USDA es un proveedor, empleador y prestamista con igualdad de oportunidades para todos.

La Universidad del Distrito de Columbia es una institución de Acción Afirmativa en Igualdad de Oportunidades. La Universidad prohíbe la discriminación o el acoso contra cualquier persona sobre la base de la raza, color, religión, nacionalidad, sexo, edad, discapacidad, orientación sexual, identidad o expresión de género reales o percibidos, responsabilidades familiares, matrícula, afiliación política, estado marital, apariencia personal, información genética, estado familiar, fuente de ingresos, estado como víctima de una ofensa intrafamiliar, lugar de residencia o negocio, o estado como veterano, según lo dispuesto y en la medida requerida por los estatutos del Distrito y Federal y regulaciones. Esta política cubre todos los programas, políticas de servicios y procedimientos de la Universidad, incluida la admisión a programas educativos y empleo. La Universidad enfatiza el reclutamiento de minorías, mujeres, personas discapacitadas, veteranos discapacitados, veteranos de la era de Vietnam y otros veteranos elegibles.