



Strength of *Morus nigra* [A review]

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Abstract

Blackberry progresses a wealthier tasty berry as compare to white mulberry as well as it used up as a garden-fresh fruitlet, juicy sap for drinking. Therefore the situation is not required for depending on other imported ingredients especially on other foreign countries rosemary ingredients for the achievement of wanted research. *Morus nigra* is used in most areas as medicinal use and other herbal uses but it needs to be more make inquiries for well known about the uses of *Morus nigra*. It can be used directly without any treating or else procedures as a juice or as a fruit in our daily life. It can also be used of care of the skin by spread over it directly on our face for freshened plus glow our skin. Nowadays *Morus nigra* decreases in number due to lack of cultivation by farmers and others.

Keywords: Mulberry; Medicinal plant; Medicinal uses

Introductions

In English, we call it “black Mulberry” (retrieved 21 December 2017) and in Urdu, it’s known as “shah tut”. *Morus nigra* is a fast-growing plant when young, but it’s growth speed decreases as it gets older and in the rare case it grows between (30 to 50 ft.) but the very functional tree. Leaves organized interchangeably, humble and frequently lobed, it has saw-toothed edges. Lobes exist more communal in young branch than mature saplings. Its leaves present is rough at the upper surface and childish beneath, 7-12.5 cm long. A mulberry plant has multiple fruits approximately to 2-3 cm lengthy. Immature mulberries have snowy, green also pale yellow colour but after it ripens its colour becomes shady elaborate and dark. It has sugary taste once totally ripened. (Wiersema and Leon, 1999; Bircher and Birchers, 2000. A mulberry shrub with the crusty bay as well as typically cropped into lesser, wide-open and dispersal profile, create a fairly solid sunny cover. The florets detained undersized, emerald, swinging,

unremarkable edgings act in axils of the present time of year of the progress of branches continuously grownup timber. Flowers give the impression of 1.3 cm blackberry-frame as eatable produces.

According to botany, a single berry is not fruit however mutual berries are fruit, roofed via mouthwatering calyx; plump cores of cross-pollinated buds inaugurate swelling then finally turn into the wholly different texture in addition to colour, delicious, chubby as well filled fluid. The fruit does not classify giving to its colour that is kinds of mulberry but we can use their leaf also wood characters toward examining the species. The *Morus nigra* is a monoecious plant which means it may be male or female but also they may be present both male and female gametes found on the one plant and it becomes self-fertilization occurs within the single plant. It prefers well-lit sand, warm moist loamy, weighty mud soil, wish for well-sapped loam, appropriate PH; caustic unbiased also limy base lands. The original, pure dark mulberry tree, *Morus nigra* exists unaware compared most, if not all other more species. Its chromosome calculation is amazingly high (2 – 308). (Zeng, Q; Chen, H 2015) It is almost definitely a first cross cultivar whose inherited species are extinct. It has been cultivated for phases as well as its original inborn location unknown – but likely Chief Asia.

Habitat and Propagation

Mulberry devours house-trained above thousands of ages ago plus modified widespread areas of humid, subtropical, moderate regions of Europe, Asia, North and South Africa and America,. (O'zgen M, Serc,e S, Kaya C 2009). *Morusnigra* is a plant of warm extreme zone and the subtropics and it flourishes at height overhead sea level in stifling regions, mostly upstairs to 1,000 meters. Suitable environments for shadowy mulberry grow happening day time, where temperatures exist within choice 15-25 .c then again also bear 10-38 Ac.

Dusky mulberry prefers a yearly rainfall within the range of 700 – 1,500 mm, and tolerate 300 to 4,000 mm. and it also prefers a sincere soaking and well-drained loamy topsoil in a protected light situation with a nimble soil. The suitable PH is between the ranges of 5.5 – 7, it tolerates 4.3 – 8.3. It could tolerate atmospheric pollution. Mulberry plants take too many years aimed at grow plus producing well crops of mulberry fruit above 15 years presence average of the plant. The plant mostly nurtured in gardens due to its edible delicious fruits. It has been directly eaten from the garden for the reason that it is too lenient and easily spoiled for transport to market. (Hanelt et al., 2001; Orwa et al., 2009; Lim 2012).

Plants leaf grows late but as well in the first autumn colds, they lose their leaves when the tree becomes in leaf companies somewhat thick shadow. Mulberries plants have a fragile root that's why it needs to special care during us planting them. Trimming or cutting would only approve once a plant comes in the form of totally latent for reason that mulberries exploit badly for the period of cut. Mulberries generally planted on one occasion during the wet season to a height of 1.5 to 1.8 cm. It has been well-thought-out a tree with very long-life but nowadays there is a doubt in this statement, it is perhaps a fairly short-lived tree. The plants unaffected by any fungus, In Pakistan at steep regions like Gilgit-Baltistan, Mulberry start flowering from April to May and seed ripen from June to July. This plant will possibly nurture in a low amount of light.

This plant desires soaking territory too tolerates full of atmospheric pollution. It formerly a sub-tropical tree of fruit creation of Iran or China. It is only well-matched with the greater altitudes beyond 1000m in the tropic regions. In England, mulberry was grown down at an equal level of the sea. It is suitable for hot summer areas or lengthy famines. A sharp type, it honestly

resists cold but grows best at a lower height above sea level while protected from the wind in coastal areas. A delicious somewhat acid flavour, it is an excellent berry of the desert area also eaten by measure amount. Mulberry is fresh and juice-like taste, and yet the necessity to cast off without delay, for instance, it's ready (June to July) if not fruit will decay quickly. As fruitlet start tumbles down as of shrub for instance as entirely prepared. Fruit can be collected to dry it and creased into a powder. Diameter is 25mm. Fruits glowing in the south plus west Britain then need shield barrier more than northern when mulberry developed. A tree is best for grapes which grow on it. Those grapes are very difficult to collect, on the other hand, all the time they appear as a better plus healthy and protected from diseases like fungus. The seed incubates well when stratifies 2-3 months. The seed prepared without delay if possible if not it ripe in February with a cool environment. Kernels frequently propagate at the head of the springtime; however, sometime proceeds extra year. Plant on view in spring and good percentage takes, yet it sometimes fails to come into flower. Cut down of the advanced lumber in recent seasons of growing at 25-30cm by repair 24-month-old logs, in end or first springtime of an icy border or shaded layer outer. The stem is covered in moss to stop transpiration and with a few top buds not being covered.

Some mulberries exist as masculine or feminine saplings, so both monoecious plus dioecious will required edict at fruitlet production. Shrubs will every so often do the conversion of sexual characteristics as well as not sure to allow greatly drupe production for leading 15 years. Male mulberry trees occurred, when temperature high, strong light, and elongated days these are the issues to favour male plants while in other ways high stickiness favours the production of female floras or flowers. The species are wind-pollinated (Sheikh, 2008).

History

The *Morus nigra* species is well-known that it is fled from Denmark and Australia, where it nurtured plus fragile in South Africa, Southeastern Australian bushland as well as Spain. (Lumber's, TORRÓ, V. D., & Pablo, P. (2015) it has been state-owned as aggressive in Southern Brazil. In its Hostile characters, it includes its long life, fast-growth amount, acceptance for deficiencies, uncultivable and rocky soil, unaffected by cold weather, easy for pollination due to its sweet taste, insects are attracted to it, it is cultivated because it has the edible feature (Gasperin and Pizo, 2009). More study is necessary for this species to explore its hidden features. Its name in English together with blackberry was Persian, Spanish, common mulberry. British Keys 1548 introduced it if not previous. It was looked-for in North America plant scales outlet by 1771 but is still outstanding in North America. In most parts of this area, it is ill-appropriate. Much of internal area is too cold; much as Southeast too hot also steamy. On the pacific beach from B.C. through California, it grows well. But few sampling exist and sometimes it is cultivated without pollination by farmers, as in USA, California, where generally produce dual yields a year by self- productive saplings and they usually preferred self-fertile trees because it is fruitful. In the 1930s the firstborn sapling was mounting in UK, England, supposed to imbedded in 1548.s

M.nigra was an initial cultigen with the nameless origin, certainly, in the Middle East, which commonly planted at all deep extreme regions in Europe, Asia, and the Americas also Hawaii as foundation fruit lets (Wyk, 2005; Lim, 2012) These types acknowledged via utmost primary Roman plus Greek playwrights, actually on the way to be there familiarized in southern Europe on or after Iran and in Italy *M.nigra* nurtured as a tradition, besides, grown in Greece and Italy on the purpose to the commerce of silkworm till outline *M.alba*, contain superior

advantageous important silkworm. A sixteenth period ago *M.nigra* existed in primary at the United Kingdom, then much olden make known to the UK by the Roman. Grieve reported in 1931, the initial mulberry sapling after then England to be there introduced from Persian country (Iran) in 1548. It was usually lodged in England after mentions by King James I, while motivated for producing silkworms, have the first choice of *M.nigra*. *M.nigra* actuality purposely concentrated for farming, forest use, and to produce showy materials. Biotic factors are responsible for its distribution, we eat berry also it's eye-catching; the fruits are supposedly spread due to birds because it's very tasty so birds eat them and disseminated all over elongated areas. *M.nigra* shows adverse impression taking place non-intrinsic surroundings, freely emissions on or after gardening in line for general distribution via biotic flight path of its kernels, grows speedily, fight with further classes of animals for food, and so actually do fruits production for many years (Gasperin and Pizo, 2009).

Chemical compounds

Near 60 composites found in attendance segregated measures of dark mulberry, counting its roots, yelp, lumber, foliage plus fruitlet. Biochemical components initiate in dark mulberry, donate toward pharmacy belongings, which is cytotoxic, antihyperglycemic, counter to leukaemia cells, antioxidative, uncontaminated, anti-provocative plus reserve tyrosinase. Several composites enclosed with shadowy mulberry that is flavonoids, anthocyanins, as well as carotenoids, there are phenol combinations as a source used trendy shaded drupes. Mulberry pod is amusing of phenolic mixes as well as an activating sharp sensitivity. Commonly their fruitlet is responsible for maintaining tooth syndromes, anaemia, over-tension, diabetes, and stiffness. Inline for its food value which presents in mulberry fruit, it may be recycled up mutually directly or after processes (Venkatesh & Chauhan, 2008).

Berry pods are important bases of healthiness welfares composites. Mulberry fruits are spread out in many biological mechanisms, i.e. alkaloids (Asano et al., 2001), carotenoids and flavonoids (Hassimotto et al., 2007), vitamins, fat (mostly linoleic acids, palmitic acid, oleic acid), sugars (glucose and fructose) and natural resources (Ercisli and Orhan, 2007). The *Morus nigra* biological action, antioxidant contented (Yang et al., 2010), hypolipidemic outcome (Liu et al., 2009), and macrophage motivating effect (Kim et al., 2013), were associated occurrence of phenolic in mulberry fruit. Organic mulberry fruits contain, such as antioxidant content (Yang et al., 2010), hypolipidemic outcome (Liu et al., 2009), and macrophage inspiring influence related happening of phenolic in mulberry fruit. Mulberry berry colour rises from anthocyanins, which are lower than basic investigation for applications of several infections. Anthocyanins are responsible for the gorgeous colours fresh mulberry shrub nutrients contain caroty, rosy, purple, black and navy. (Wrolstad RE 2001) The colours are soluble in water too it can be mine with no trouble and usual squashy food stains, due to these qualities of mulberry its importance in food production is increasing and important (Hou DX March 2003).

Ethno medicinal

Black mulberry covers tannin, calcium, sugar, phytosterol, greasy acerbic, maleate, and phosphoric caustic. The black mulberry fruit contains an extraordinary ratio with phenol, flavonoid and ascorbic mordant. The substances are resulting which is present in dark mulberry is 0.7% protein, 0.5% obese, 12.2% celluloses, 0.8% grit, 0.4% mineral deposits and 86% H₂O. Black mulberry fruits intake value conditions that it contains 20 mg phosphate, 60 mg calcium, 2.6 mg/100g steely, 58 mg thiamine, 0.2 mg nicotinic acid, 92 mg riboflavin, and 10mg/100g

ascorbic caustic, (Venkatesh&Chauhan, 2008). Phenol mixtures in dusky berry capsule make available medical doings i.e. antioxidant 13, sterile 14, hypolipidemic weight 15 and macrophage stimulation effect 16. Phenol extreme meditation originates popular dark mulberry drupe (M.nigra) 17 or this extraordinary phenolic content has prospective for antioxidant doings 1, 18. A short-lived experimental explosion by Kim et al. had been set that extract from M. nigra devours a persuasive resisting importance liver microsomal cytochrome activities, with mortalities of midazolam 1, hydroxylation of $2.96 + 0.33\%$ (v/v with 20-min preincubation) and $6.22 - 0.47\%$ no preincubation. It is due to about 30% of drugs in clinic containing antibiotics, antiarrhythmics, benzodiazepines, susceptible modulators, humanoid immune deficiency infection (HIV) against the virus, antihistamines, blockage of calcium passage, plus statin digested using CYP3A, by linked consumption CYP3A substrates Morus nigra pod is chief for plasma medication marketing. (Pharmacol. Ther. 2013) (assessed on 11 February 2019).

Medicinal Uses

M.nigra devours so many usages customary medication. Main usages of M. nigra for production of syrup as a modern treatment which gained on or after disposed fruitlet on the way to give colour and flavour the other medicines (Majinda, R.T. Mazimba, O., & Motlhanka, D. (2011)) It has a dark violet otherwise florid liquescent, refreshes and pale odour, with honeyed acerbic perception (Venkatesh&Chauhan, 2008). Morus nigra exhibited shielding assets against several human organs and systems, which are mostly, founded its antioxidant ability. The consequences intensely proposed for M.nigra a progressive nutraceutical source to switch plus inhibit numerous chronic diseases. M. nigra are recycled in dispensary due to their caustic properties. M. nigra has antipyretic and purgative properties. Morus species famous plant which is ironic polyphenols besides mines used as a non-toxic natural therapeutic agent, which have great prospective tenders of skin-whitening causes due to many effective tyrosinase inhibitors which is isolated from different parts of the plant. (Chang TS 2009)

Black mulberry demonstrated varied range with biotic plus clinical healing belongings containing antinociceptive, against inflammation, diabetes plus microbes, anti-fatness, anti-hyperlipidemic, and anti-tumour accomplishments. The yelp presumed for anthelmintic, to dismiss tapeworms from body. A foil, floret or else core substances good for disinfected for diabetes, temperature, painful oesophagus plus enlarged voiced cords cured using fruitlet nectar. The purpose of berry exists for silkworm, plus uncooked material meant for production of jelly, juices, wines, vinegar and makeups. It is used as herbal medicine to treat gastrointestinal problems. Nigra moreover bared defensive also healing properties for central nervous coordination, liver, organ meats, digestive tract, female generative structure. M.nigra shows healing and apologetic possessions arranged dominant nervous organization, kidney, liver, digestive region and feminine reproductive structure. Morus nigra mine lead to a number of important on the other hand non-poisonous ups and downs in biological profile (reduced urea plus AST in men; pointed over-all dietary fat and AST in women) as well as leukocyte boundaries (amplified neutrophils of men while declined women snowy cell).

In Umami system dark mulberry has been used such as antitussive plus cough drug. Morus nigra was used to treating diversity disorders as well as used for therapy of cough, influenza, asthma and bronchitis. In olden times, mulberry is used as a prescription at china, and virtually wholly plant portion recycled single approach or else more. This plant has shown antibacterial and fungicidal activity. The plant is pain-relieving, soothing, and relaxing and foliage are uncontaminated, acerbic, diaphoretic and ophthalmic. They exist engaged within

treatments of iciness, respiratory tract infection, and bleeding nose. T (Zheng et al., 2010).The greeneries were together when minor colds on the end of the year as well as recycled in the renewed state but then again mostly dehydrated out. The trunks are situated hypotensive, diuretic and pectoral. Mixture or extract of the bay is castoff for release pain in the tooth. Woof of the root is an antitussive, diuretic, expectorant, and hypotensive then it is collected at wintertime, also, to become dry up aimed at far along usage. (Nomura and Hano, 1994) A berry holds stimulant influence on kidney energy furthermore used meant for constipation mostly designed for elders. Its main uses in herbal medicine are for premature brownish gray hair and urinary incontinence. Mostly homeopathic prescriptions made as of leaves.

Occasionally, foliage plus fruitlet of mulberry play a role for treatment of several sicknesses. Turkey people mostly famous this charity meant for handling sores, exclusively aperture diseases. Berry fermentation mostly responsible for mouth cure plus infection in the esophagus, purgative, anthelmintic and cough syrup. Foliage plays an important role in handling diabetes mellitus. For the time being, the sap of the underground part is capable of minor the sugar amount in the body fluid of diabetic persons. (Barati et al., 2012), this underground part also holds deoxynojirimycin (DNJ) it was operational in contradiction of HIV diseases. (Venkatesh & Chauhan, 2008)

Other uses of *M. nigra*

The fibre which is used in knitting is achieved as of tree bark. Red-bluish purple to dim purple bleach obtained from mulberry fruitlet. Blonde and olive green colour be there gained as of foliage. Lumber is castoff carving as well for fuel. Trees (mulberry) are planted for shade, shelter, barrier, by ornamental plus living hedges. It is a good tree for growing grapes into it while difficult to pick the grapes from the tree but the tree every time appear healthier and restricted from fungal diseases. Shrubberies had to be nurtured meant for purpose to silkworm for manufacture silkworms in Asian nation (*Bombyx mori* L.), for the reason that foliage in minor as well as significant nutrition basis on behalf of silk maggots. (Asian Pac.J.Trop.Biomed. 2017).

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