

TERMINALIA ARJUNA -SHOWING HIGH QUALITY OF MEDICINAL PROPERTIES**D.K. Awasthi¹**
Archana Dixit²¹.Department of Chemistry Sri J.N.M.PG. College Lucknow U.P. India². Department of Chemistry Dayanand Girls College Kanpur U.P. India**Abstract:**

Terminalia arjuna or Arjun tree is a large evergreen tree native to India. It is found throughout the country. Arjuna is a medicinal tree and its various parts are used in the treatment of a variety of ailments especially heart diseases. Its fruit paste is applied on wounds, bark powder is used in heart diseases, the bark paste mixed with honey is used to improve complexion. The tree bark is cardio tonic and effectively treats heart palpitation, angina and poor coronary circulation. The dried bark powder with rice washed water is used to treat blood in urine. Chewing fresh bark and swallowing the juice works as an antacid. It has antioxidant, anti-inflammatory and antimicrobial properties.

Arjuna helps reduce the risk of heart diseases. It strengthens and tones the heart muscles and helps in proper functioning of the heart. Arjuna tree also has strong anti-hypertensive property and helps reduce high blood pressure. For maximum benefits in case of heart problems, Arjuna chaal boiled in milk should be taken 1-2 times a day. Arjuna also helps control diarrhea, asthma and cough.

External application of Arjuna bark (Arjuna chaal) helps manage various skin disorders like Arjuna can be used for managing skin diseases such as atopic dermatitis, psoriasis, eczema, etc.

Description:

Arjun is the large size deciduous tree. The height of the Arjun tree reaches upto 60-85 feet. It is the evergreen tree with the yellow flowers and conical leaves. It has a smooth gray bark. Fruit is 2.5-3.5 cm long, fibrous woody, glabrous with 5 hard wings, striated with numerous curved veins. It has a buttressed trunk and a vast spreading crown from which the branches drop downwards. Its leaves are dull green above and pale brown beneath. Arjun flowers between March to June and fruits between September to November. Large evergreen tree; Bark smooth, whitish-grey smooth with 1/3rd inch width outside and flesh colored inside, flaking off in large flat pieces; Leaves simple, sub-opposite, oblong or elliptic, coriaceous, crenulate, pale dull green above, pale brown beneath, often unequal sided, nerves 10-15 pairs and reticulate; Flowers white, arranged in panicles of spikes with linear bracteoles; Fruits ovoid or oblong with 5-7 short, hard angles or wings, the lines on the wings oblique and curving upward. Arjunarishta, also known as Parthadyarishta, is a hydroalcoholic formulation of the herb *Terminalia arjuna* belonging to the Combretaceae family. It is sold as a herbal decoction. Arjunarishta is made up of fresh stem bark of Arjuna (*Terminalia arjuna*), Madhuka (*Madhuka indica*), Draksha (*Vitis vinifera*), Dhataki (*Woodfordia fruticosa*), and Jaggery (*Saccharum officinarum*). Arjunarishta has the highest percentage of Arjuna.² It is formulated via a fermentation process which generates alcohol. This alcohol acts as a preservative as well as solvent.

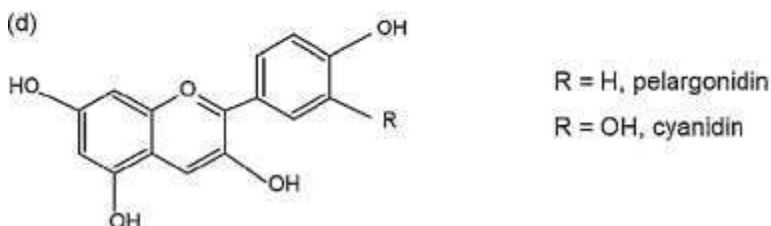
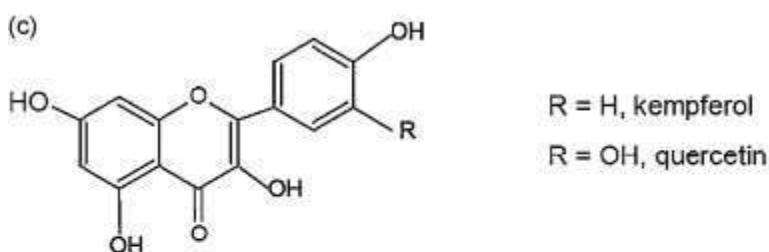
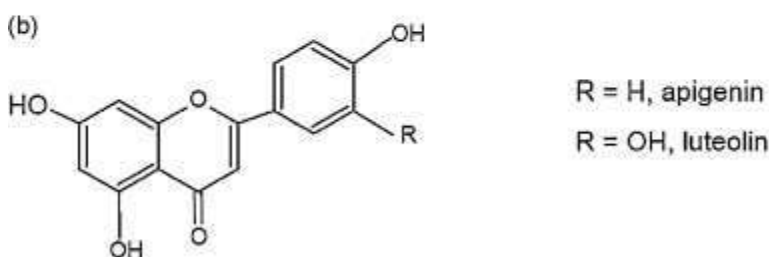
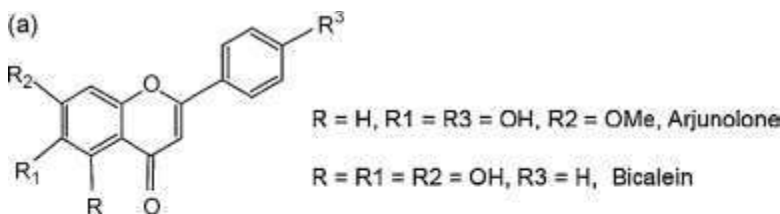


Fig-1 Arjuna Plant

Botanical Name: Terminalisa arjuna**Classification:**

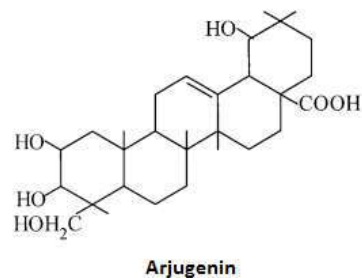
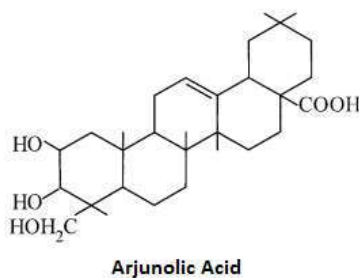
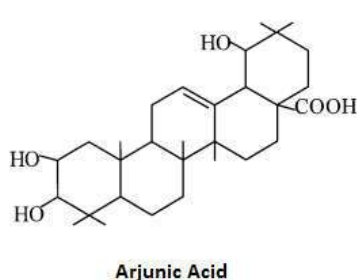
Kingdom Plantae, Division Magnoliophyta, Class Magnoliopsida, Order Myrtales, Family Combretaceae, Genus Terminalia, Species T. arjuna, Latin Name: Terminalia Arjuna, Synonym — Pentaptera arjuna Roxb., **Others names**
Sanskrit: Arjuna, Dhanvi, Indradruma, Kakubha, Karvirak, Dhananjaya, Partha, Virataru, **Hindi:** Koha, Arjun, Arjuna, Arjan, Kahu, **English:** White Marudah, Tropical almond, Arjun, Malabar almond, Arjuna, **Bengali:** Arjhan, **Gujarati:** Sadado, Sadada, **Marathi:** Arjuna, Arjun, Sadada, Sadura, **Oriya:** Arjuna, Sahajo, **Malayalam:** Marutu, Nirmarutu, Venmarutu, Attumarutu, Pulamatti, **Kannada:** Maddi, **Telugu:** Thella, Maddi, **Tamil:** Marudha Maram, Attumarutu, Nirmarutu, Vellaimarutu, Marutu, **Thai:** Dhanvi, Rok Faa Khaao, Kakubha

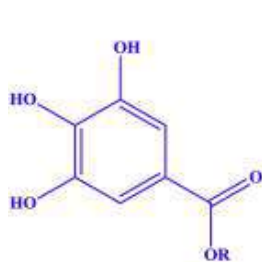
Chemical constitution: Fruits contain flavanones – arjunone and 5, 7, 2', 4' – tetramethoxy flavone and a chalcone – cerasidin, b-sitosterol, friedelin, methyloleanolate, gallic acid, ellagic acid and arjunic acid. Bark contains triterpene arjungenin, triterpene glucosides I, II and III, flavones – baicalein and arjunolone characterised as 6, 4' – dihydroxy – 7-methoxy flavone, oxalic acid and tannins and complex glycosides.

Chemical Constituents of Arjunarishta**Useful Drug for Cardiovascular**

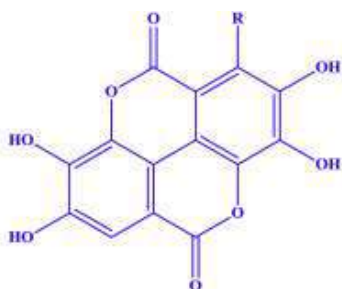
Arjuna bark contains many phytochemicals, triterpenoids, glycosides, flavonoids, tannins, beta-sitosterol, minerals, and trace elements.

Category	Phytochemicals
Triterpenoids	Arjunin, arjunic acid, arjunolic acid, arjungenin, terminic acid, arjunglucosides IV and V, arjunasides A-E, 2''alpha, 3''beta'' dihydroxyurs''12,18'' dien''28''oic acid 28''O''beta''d'' glucopyranosyl ester
Flavonoids	Arjunolone, arjunone, baicalein, luteolin, gallic acid, ethyl gallate, quercetin, kempferol, pelargonidin, oligomeric proanthocyanidins
Glycosides	Arjunetin, arjunoside I, arjunoside II, arjunaphthanolside, terminoside A
Tannins	Pyrocatechols, punicallin, punicalagin, terchebulin, terflavin C, castalagin, casuarinin, casuarinin
Minerals and trace elements	Calcium, aluminum, magnesium, silica, zinc, copper





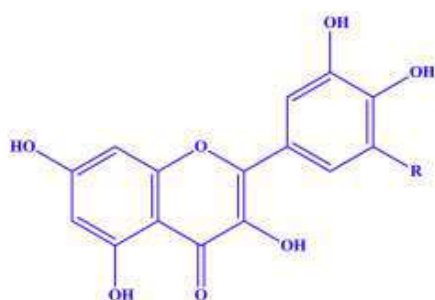
Gallic acid



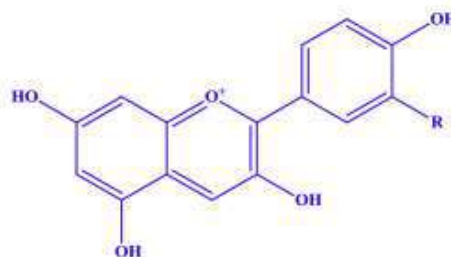
Ellagic acid



Arjunone



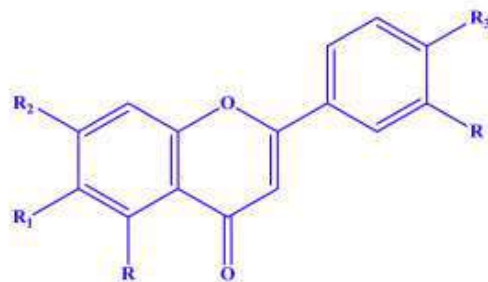
$R_1 = H$; Kaempferol
 $R = OH$; Quercetin



$R = H$; Pelargonidin
 $R = OH$; Cyanidin



$R = H$; Apigenin
 $R = OH$; Luteolin



$R = H$; $R_1 = R_3 = OH$; $R_2 = OCH_3$ = Arjunolone
 $R = R_1 = R_2 = OH$; $R_3 = H$; Biacalein

Medicinal Properties: The bark of Arjuna tree is a well-known heart tonic and is useful in the treatment of all forms of heart disease. It is one of the best herb for the heart diseases.

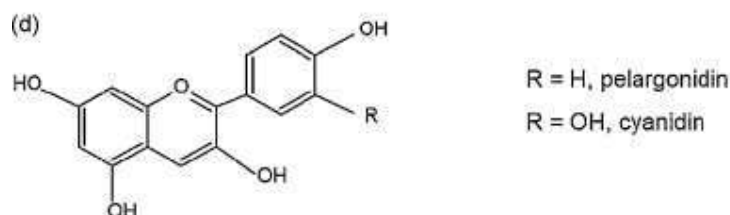
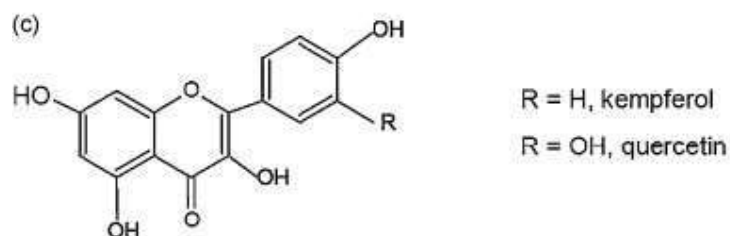
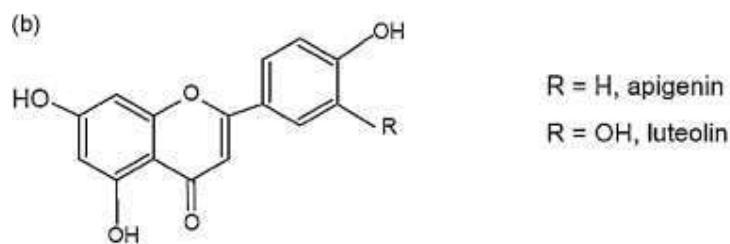
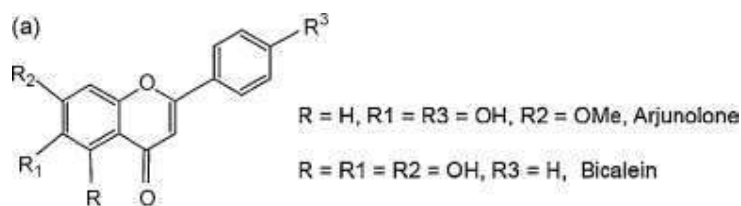


Fig-2 Arjun Bark

The bark is cardioprotective, cardio Tonic, removes obstruction from fluid channels, astringent and capable of reducing fever. It is effective in the treatment of elevated blood pressure, palpitation of the heart and angina. Arjuna bark tones the heart, stimulates blood circulation, stops bleeding and strengthens the heart muscle. The bark has anti-dysenteric, astringent, anti-asthmatic, fever reducing, expectorant, cardio tonic aphrodisiac and diuretic properties. Bark works on the central nervous system, circulatory system and reproductive system (aphrodisiac, abortifacient or induces abortion).

The various aerial parts of the tree exhibits semen coagulant activity. The fruits are deobstruent (possess power to open the natural ducts of the fluids and secretions of the body).

The tree bark is also useful in ulcers, fractures, cardiopathy, fatigue, asthma, bronchitis, tumors, internal and external haemorrhages, cirrhosis of the liver, anemia and diabetes. In bone fractures, bark powder is taken with milk. The bark has diuretic (stimulates urine production) action.



Fig-1 Arjun Plant

1. In heart palpitation, regular intake of 3-6 grams of Arjuna bark with one glass tomato juice is an effective remedy.
2. Arjuna tree bark oral intake is effective in managing high blood pressure. In high blood pressure, stress, headache due to high BP, decoction of bark should be taken. For preparing decoction, take bark powder (5 gm) and boil in water (200 ml) till volume reduces to one fourth. Filter this and drink.
3. In all types of heart diseases, regular intake of 3-6 grams of the tree bark with one cup milk is very effective. For chest pain, increased heart beats, anxiety and similar heart related problems, regularly eat Arjuna bark Halwa. It is prepared similar to any other halwa. First, wheat flour (20 g) is roasted well in Gau-ghrita (Cow's milk ghee). Then 3-6 grams of Arjuna bark, sugar/misri as per taste and water is added to prepare halwa.
4. In various heart diseases, palpitation, angina, weakness of heart and as a cardio Tonic, Arjun Ksheer Pak is an effective home remedy.

Decoction of Arjuna bark (in a dose of 40ml) after earlier heart attack, when taken twice a day strengthen heart.

Arjuna Bark in other diseases, Oral, gum problem, mouth ulcer, infections

Prepare decoction of fresh Arjun bark and gargle with this to cure oral gum problems and oral infections. Leucorrhoea (Shevt pradar), Soak bark powder (2 tbs) in water at night. Next morning drink this water. Or prepare decoction and drink regularly. Bone diseases, Bone fracture, Amoebiasis, Digestive problems Drink decoction of Arjun bark. Chronic fever, Sinusitis, cough Prepare decoction of Arjun bark powder, neem leaves and tulsi leaves. Filter and drink. Bloody dysentery, Haemorrhage or Rakta Pitta, chronic fever, Menorrhagia Regularly take Arjun Kshir Pak. Urine retention Drinking 40 ml decoction of bark has diuretic action and this gives relief in urinary disorders. Fractured bone Take 3-6 grams of bark powder with one cup milk. Ear pain Extract Arjun leaf juice and put few drops in ear. Hyperpigmentation, pimples on the face Apply paste of Arjun bark on the affected areas. Melasma, darkening or tanning of facial skin The tree bark is crushed finely and mixed with honey. It is applied topically on the affected facial area. Leucoderma (Safed Kustha) Prepare paste of Arjun bark, punarnava mool, Bakuchi seeds and apply on the affected area.

Application

- In Cardiac Disorders-Milk processed with arjun bark should be used.
- In Intrinsic haemorrhage-Bark of arjun, udumbar, vetas should be used combinely or separately to checks intrinsic-haemorrhage.

- In Koch's-Powder of arjun bark mixed with expressed juice of vasa leaves should be given with purified sugar-candy, honey and ghee.
- In wound, fracture and inflammatory condition-It is used internally and externally.
- In Meno-metrorrhagia, Leucorrhoea-Decoction of arjun bark & white chandan should be used.

Conclusion: The bark is cardioprotective, cardio Tonic, removes obstruction from fluid channels, astringent and capable of reducing fever. It is effective in the treatment of elevated blood pressure, palpitation of the heart and angina. Arjuna bark tones the heart, stimulates blood circulation, stops bleeding and strengthens the heart muscle. The bark has anti-dysenteric, astringent, anti-asthmatic, fever reducing, expectorant, cardio tonic aphrodisiac and diuretic properties. Bark works on the central nervous system, circulatory system and reproductive system

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