

## A MINI-REVIEW ON PHYTOCHEMICAL AND PHARMACOLOGICAL CONSIDERATION OF *CARICA PAPAYA* SEED

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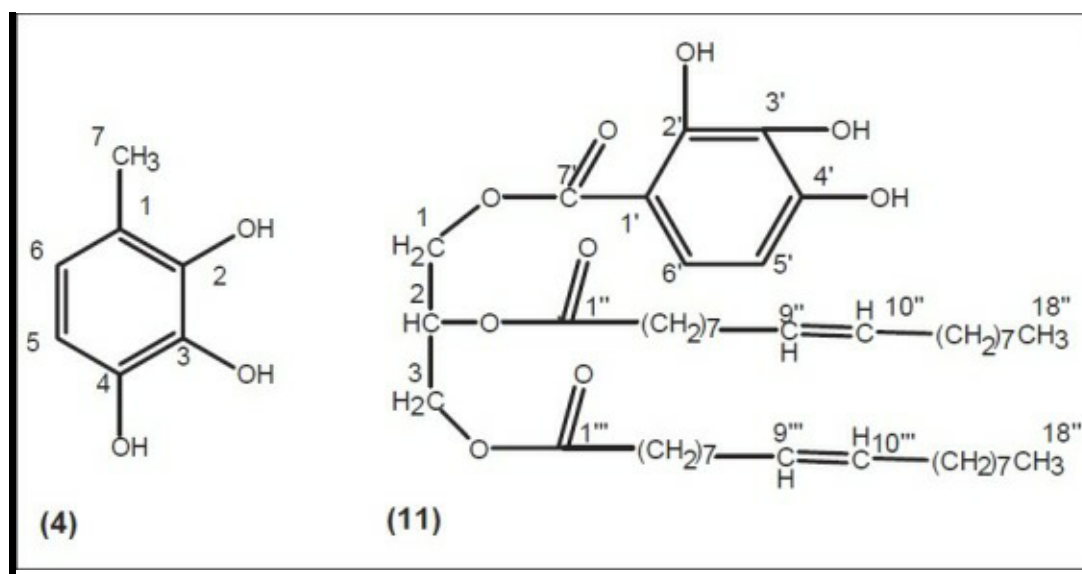
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### ABSTRACT:

The plant *Carica papaya* is native to Mexico and Central America. Now it is cultivated throughout the world. In Ayurveda it is denoted as Chirbita. The whole plant is a medically useful. In this scientific review it is focused on the untold secrets of papaya seeds. Papaya contains two important chemical constituents as papain and chymopapain. In male tree phenolic compounds are abundantly present. The other chemicals found are alkaloid, butonic acid, flavanols, linalool, tannin and terpene. The biological source of the medicinal plant is **Scientific name:** *Carica papaya* L. **Botanical family:** Caricaceae . the seed is use ful in various ways as intestinal worms, urinary troubles, fever, indigestion,wounds , toothache, arthritis as well as antibiotics. Defatted and undefatted seeds of papaya (*Carica papaya*)were analyzed for proximate composition, some toxicants, sugar composition, mineral content, physico-chemical properties of the seed oil and the fatty acid spectrum of the seed oil. The seed is a rich source of proteins (27·8% undefatted, 44·4% defatted), lipids (28·3% undefatted) and crude fibre (22·6% undefatted, 31·8% defatted). Of the toxicants estimated, glucosinolates occur in the highest proportion. The seed is low in free monosaccharides. Sucrose is the predominant sugar (75·0% of total sugars). Mineral content is generally low.

**Keywords :** *Carica Papaya*, crude fibre, glucosinolates, Benzylisothiocyanate papaine, alkaloid, intestinal worm

*Carica papaya* L (family Caricaceae) is a fast growing, short-lived, single-stemmed, small tree, 2-10 m in height with straight, cylindrical, soft, hollow, grey trunk roughened by the presence of large leaf- and inflorescence scars. The seeds are medicinally important in the treatment of sickle cell diseases (Imaga et al.2009), poisoning related disorder(Okeniyi et al.,2007). The leaf tea or extract has a reputation as a tumor destroying agent (walter 2008). Oil extract showed very high levels of oleic and palmitic acids. Oil extract of *Carica papaya* contains endosperm protein which is a good potential source of supplemental protein. Benzylisothiocyanate is a chemical constituent may be present, whose physiology has not been completely understood. The major sugars in papaya seed is sucrose. Beta xylose, beta -glucose, fructose and s-glucose. The minerals found in seeds are Ca, Na, K, and Mg. The seeds are having as carminative, emmenagogue, abortifacient, vermifuge and counter-irritant activity.<sup>1</sup> A seed extract is used to treat bleeding piles and enlarged liver and spleen. A seed paste with glycerine is applied to cure ringworm and psoriasis. The ripe seeds are taken with rice and useful to treat diarrhea.<sup>2</sup> The seeds contained a fixed oil composed of myristic, palmitic, stearic, arachidic, behenic and unsaturated fatty acids<sup>1,3</sup>, phospholipids, carpaine, benzylisothiocyanate, benzyl glucosinolate, glucopaeolin. The methanolic extract of the seeds of *C. papaya* was found to be ineffective at 1 mg/ml. However, the methanolic extract effective against *A. flavus*, *C. albicans* and *P. citrinum*. 2,,3,4-Trihydroxytoluene effective . against *A. flavus* and *C. albicans*.



**Fig.1.** 2,3,4-trihydroxytoluene (4) and glyceryl-1-2',3',4'-trihydroxybenzoyl)- 2,3-dioleate (11)

Thus, air-dried *C. papaya* seeds are efficacious in treating human intestinal parasites and without significant side effects. Their consumption offers a cheap, natural, harmless, readily available monotherapy and preventive strategy against intestinal parasitosis, especially in tropical communities.<sup>4</sup>

The results showed that oral administration of *C. papaya* seed extract prevented ovum fertilization, reduced sperm cell counts, revealed sperm cell degeneration, and induced testicular cell lesion. These observations led to the conclusion that *C. papaya* seed extract oral administration could induce reversible male infertility and therefore could be used for pharmaceutical development of a male contraceptive.<sup>5</sup>

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Like green papaya, the seeds of papaya fruit contain high levels of the proteolytic enzyme papain, which can help rid your body of parasites such as intestinal worms. In the same way that papain breaks down undigested protein waste from your food, it can also dissolve the protective biofilm and fibrin that covers parasites, and particularly their eggs, on the walls of your lower intestine.

Alongside proteolytic enzymes, the seeds from papaya also contain a unique anthelmintic alkaloid called carpaine that has been shown to be very effective at killing parasitic worms and amoebas. Liver cirrhosis is a disease, usually caused by excessive alcohol consumption over many years, wherein the liver shrinks and becomes hardened. In this state it is ineffective at removing toxins from the body, leading to a variety of serious health problems. Papaya seeds are often reported as an effective natural treatment for liver cirrhosis and overall detoxification of the liver. Good levels of digestive enzymes in your diet also help to improve and normalize your intestinal ecology, making it much less hospitable to worms and other parasites and much harder for them to breed.

The seeds of papaya have a strong antibacterial and anti-inflammatory effect on your digestive system. Studies have shown an extract made from papaya seeds is effective at killing E coli, Salmonella, Staph and other dangerous bacteria.

As a natural remedy for food poisoning, papaya seeds should be taken at the first sign of sickness and continued 3 times a day with each main meal until symptoms subside. Oxidative stress is common culprit in chronic kidney disease, particularly in patients with diabetes, and can lead to renal failure wherein your kidneys can no longer properly filter metabolic waste from your blood.<sup>7</sup>

Proteolytic enzymes, like papain found in papaya seeds, are some of the most powerful natural substances for breaking down undigested protein in your digestive tract. Eating a small amount of papaya seeds with a meal containing a lot of meat is a simple way to improve protein digestion and prevent problems like constipation and bad gas later on.

## CONCLUSION:

The mini article review study shows the very rare studies of this common and abundantly available plant have dominant medicinal properties. This has to be focused in research of pharmacy. The contraceptive effect on male, antihelmentic effects , antifungal, anti viral, anti bacterial effect showing *Carica papaya* a future herbal least side effect herbal medicine.

## REFERENCES:

1. Vol. 3. New Delhi: Publication and Information Directorate, CSIR; 1992. Anonymous, The Wealth of India, Raw Materials; pp. 276–9.
2. Mhaskar KS, Blatter E, Caius JF, editors. Vol. 5. Delhi: Sri Satguru Publications; 2000. Kirtikar and Basu's Illustrated Indian Medicinal Plants; pp. 1526–9.
3. Puangsri T, Abdulkarim SM, Ghazali HM. Properties of *Carica papaya* L.(Papaya) seed oil following extractions using solvent and aqueous enzymatic methods. J Food

Lipids. 2005;12:62–76.

4. Journal of medicinal food vol. 10 <https://www.liebertpub.com/> John A.O. Okeniyi Tinuade A. Ogunlesi Oyeku A. Oyelami Lateef A. Adeyemi 1 May 2007
5. Activity of Alkaloid Extract of *Carica papaya*. Seeds on Reproductive Functions in Male Wistar Rats [F.V. Udoh](#) [Department of Pharmacology, College of Medical Sciences, University of Calabar, Calabar, Nigeria](#), [P.B. Udoh](#) & [E.E. Umoh](#)
6. Effectiveness of dried Carica papaya seeds against human intestinal parasitosis: a pilot study . [Okeniyi JA](#)<sup>1</sup>, [Ogunlesi TA](#), [Oyelami OA](#), [Adeyemi LA](#). [J Med Food](#). 2007 March 10 (1)
7. Antibacterial Activity of Seed and Leaf Extract of Carica Papaya var. Pusa dwarf Linn Jyotsna Kiran Peter\*, Yashab Kumar, Priyanka Pandey and Harison Masih. **IOSR** Journal of Pharmacy and Biological Sciences (IOSR-JPBS) e-ISSN: 2278-3008, p-ISSN:2319-7676. Volume 9, Issue 2
8. Acute and chronic toxicity of pawpaw (*Carica papaya*) seed powder to adult Nile tilapia (*Oreochromis niloticus* Linne 1757 *EO Ayotunde, BO Ofem. African Journal of Biotechnology*