

# Chemical analysis and Quality Assessment of *Carissa carandas* Linn. - A potent antitumor plant drug

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## Abstract:

*Carissa carandas* Linn. (Apocynaceae) popularly known as ‘Christ’s thorn’ is an important minor fruit crop of Asian countries. Fruits possess appreciable amount of jelly grade pectin and is rich source of iron and Vitamin C. It contains therapeutically active phytoconstituents like Carrisin, Lupeol, Stigmasterol,  $\beta$ -sitosterol, Carrisone and is used as a remedy for arthritis, splenomegaly, hepatomegaly, cancer, piles, pyrexia, amenorrhoea, nervine, cardiac and hepatic disorders.

In the present research work, quality of fruits was assessed using modern scientific analytical tools. Proximate analysis and microscopic characterization were carried out. HPTLC and HPLC methods were developed and validated for phytochemical characterization and simultaneous quantitation of bioactive markers viz. Lupeol, Stigmasterol and  $\beta$ -sitosterol. Thus, the developed methods were applied to quantitate these markers from different plant parts and also to elucidate the variations in fruits collected from different geographical regions. To evaluate safety, heavy metal analysis and toxicity studies were also carried out.

The developed HPTLC and RP-HPLC methods can be applied as routine quality control tool for simultaneous quantitation of these markers from various plants and related ASU formulations.

**Key words:** Standardization, *Carissa carandas*, Chromatography, Lupeol, Stigmasterol,  $\beta$ -sitosterol,