

### **Folk Medicine, Pharmacological and Biological Activities**

1. *Carissa acokanthera* (Wintersweet): The fruit exudes a very toxic milky sap, which has been used as arrow poison (Radford *et al.*, 1986).
2. *Carissa carandas* L. (Karanda): It is a useful food and medicinal plant of India, widely distributed throughout subtropical and tropical regions. Traditionally, whole plant and its parts, mainly the fruits and roots, were used in the treatment of various ailments *viz.* anticancer, anticonvulsant, antioxidant, analgesic, anti-inflammatory, antipyretic, anti-ulcer, astringent, appetizer, antipyretic, anthelmintic, cardiovascular, antinociceptive, antidiabetic, neuropharmacological, hepatoprotective, antimicrobial and diuretic activities. It has been also reported as purgative, stomachic and antidote for snakebite (Kirtikar and Basu, 1984; Naim *et al.*, 1985; Itankar *et al.*, 2011; Singh and Uppal, 2015). The fruit is astringent, analgesic, anthelmintic, antiscorbutic and is used as a remedy for biliousness, anti-inflammatory, and to cure anaemia, to improve female libido, to clean wounds. The leaf decoction is valued in cases of intermittent fever, diarrhea, earache oral inflammation and earache. The root is employed as a bitter stomachic, antelmintic, vermifuge and it is an ingredient in a remedy of itches (Pakrashi *et al.*, 1968; Bhaskar and Balakrishnan, 2009a; Devmurari *et al.*, 2009, 2010; Hegde *et al.*, 2009b; Maheshwari *et al.*, 2012). The flowers are used to treat eye diseases (Gunasekaran and Balasubramanian, 2012). Extracts of the different parts exhibited analgesic, anti-inflammatory, antipyretic (Sharma *et al.*, 2007; Bhaskar and Balakrishnan, 2009a,c; Hegde *et al.*, 2010a; Hati *et al.*, 2014), antidiabetic (Itankar *et al.*, 2011; Paul and Sikdar, 2011), antioxidant (Hegde *et al.*, 2010b; Paul and Sikdar, 2011; Prakash *et al.*, 2011; Patil *et al.*, 2012), antibacterial (Siddiqi *et al.*, 2011; Israr *et al.*, 2012), antifungal (Siddiqi *et al.*, 2011), hepatoprotective (Bhaskar and Balakrishnan, 2009b; Hegde *et al.*, 2009d; Balakrishnan *et al.*, 2011), hypotensive (Shamim and Ahmad, 2012), anthelmintic (John *et al.*, 2007), anticonvulsant (Hegde *et al.*, 2009), anti-nociceptive and anti-arthritis (Hegde *et al.*, 2010a) activities.

Carissone, dehydrocarissone and carindone, isolated from the plant exhibited antibacterial activity (Lindsay *et al.*, 2000). An ethanolic root extract caused a free histamine increase in guinea pig lung, and in conscious cats vomiting, rhinorrhea, and diarrhea (Joglekar and Gaitonde, 1970). It is sometimes burned as fuel (Pakrashi *et al.*, 1968; Singh and Khanduja, 1984; Addis *et al.*, 2001).

3. *Carissa congesta* Wight (syn. *Carissa carandas*): The plant has used in traditional medicine to cure various diseases. The root is bitter, stomachic, vermifuge, antidiarrhoeal, antianthelmintic is an ingredient in a remedy for itches and a fly repellent. The ripe fruits are edible. The unripe fruit is used medicinally as an astringent. The ripe fruit is taken as an antiscorbutic and remedy for biliousness. The leaf decoction is valued in cases of intermittent fever, diarrhea, oral inflammation and earache (Devmurari *et al.*, 2010).
4. *Carissa lanceolata* R. Br.: The plant is used, in Australia, for the treatment of a variety of conditions such as chest pain, toothache, colds and flu. Extracts of the roots and the isolated compounds (2'-hydroxyacetophenone, carinol and carissone) were found to possess a significant antibacterial activity, confirming the indigenous use of this plant (Hettiarachchi *et al.*, 2011).
5. *Carissa macrocarpa*: The leaves are used to treat diarrhea in livestock. The different parts are used in South African folk to treat coughs and venereal diseases. The triterpenoids, isolated from the plant exhibited antibacterial and anti-adhesion activities. The immune boosting properties of the triterpene rich edible fruits are important, especially in South Africa, due to high incidences of human immune deficiency virus (HIV) and hepatitis in this country (Moodley *et al.*, 2011).
6. *Carissa opaca* Stapf ex Haines: It is used to cure fever, jaundice, hepatitis and eye disorders, and the fruit of the plant mixed with roots of *Mimosa pudica* is taken as aphrodisiac (Ahmed *et al.*, 2010b). In Pakistan, fruits and leaves are used as an alternative in cardiac disorders. The plant possesses antipyretic, aperients activities and is also used in the treatment of cough, asthma, cardiac dysfunction, microbial infections, diarrhea and fever (Sahreem *et al.*, 2011, 2013). Extracts of the leaves, fruits and roots showed antimicrobial (Bibi *et al.*, 2011; Saklani *et al.*, 2011; Awasthi *et al.*, 2013), antioxidant (Khan *et al.*, 2010c; Sahreem *et al.*, 2010), hepatoprotective (Sahreem *et al.*, 2011) and anticancer activities (Sahreem *et al.*, 2013).
7. *Carissa spectabilis* (Bushman's poison): The fruit exudes a very toxic milky sap, which has been used as arrow poison (Radford *et al.*, 1986).