Monograph of *Withania somnifera* (L.) Dunal

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*Withania somnifera* (L.) Dunal

Tibbi name : Asgand  
English name : Winter Cherry  
Botanical name : *Withania somnifera* Dunal  
Family : Solanaceae  
Parts used : Root, tubers, seeds, leaves, fruit

which is whitish brown in color. Leaves are simple and ovate. Flowers look like lucid-yellow or greenish and it contains small berries which is orange-red in color. Fruits are orange-red, containing many seeds. Floscence occurs in fall and spring (Davis and Kuttan, 2000).

**Active constituents:** Willherin A and withanolide D (Bhattacharya et al., 1997). Anafere (alkaloid), anahygrine (alkaloid), beta-sisterol, chlorogenic acid (in leaf only), cysteine (in fruit), cuscohydroine (alkaloid), iron, pseudotropine (alkaloid), scopoletin, somniferrine (alkaloid), somniferene (alkaloid), tropanol (alkaloid), withanine (alkaloid), withananine (alkaloid) and withanolides A-Y (steroild lactones), sommiferine, somnine, pseudo-withanine, tropine, pseudo-tropine, 3-a-gloyoxytropare, cuscohydroine, isopelleterine, anahydrine, sitodioside VII and sitodioside VIII (Chaurasia et al., 2000). Pseudo-withanine, tropine, choline, cuscohydroine, isoletetteine, anahydrine, 3-alpha-gloyoxy tropane (Arih and David, 1975).

**Medicinal use:** Abortifacient; Antiinflammatory, Adaptogen; Antibiotic; Aphrodisiac; Astringent; Deobstruct; Diuretic; Sedative; Tonic. According to Unani system of medicine, the root is better, tonic, aphrodisiac (Lumbreras et al., 2005), emmenagogue, anti-inflammatory (Kulkarni et al., 1991). Studies have shown asgandh to be effective in stimulating the immune system. It also appears to inhibit swelling and aid memory (Choudhary et al., 1995). It is especially beneficial in stress related disorders such as arthritis and premature aging (Archana and Namashayam, 1999). Withanolides possess remarkable antitumour, antisarotic, anti-inflammatoim and immnosupressive properties (Bhattacharya et al., 1997). Asgandh is used for treatment of rheumatism, hyperurcemia, and as sex stimulant (Al-Hindawi et al., 1989). Asgandh is one of the most widespread tranquillisers used in India and Pakistan, where it holds a position of importance similar to ginseng in China and Korea (Bown, 1995). It is an anti-inflammatory agent (Tyler Varro, 1994). It is used to improve vitality and aid recovery after chronic illness. The

**Fig. 1:** *Withania somnifera* fruit

**Fig. 2:** *Withania somnifera* root

**Description:** The plant is cultivated as an annual crop and this herb is found growing wild in Pakistan. Asgandh plant is erect, 30-100 cm high with fleshy roots

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leaves and the root bark, are deobstruent, diuretic, narcotic, strongly sedative and tonic (Uma and Akagi, 1996). It is also used to treat, debility, insomnia, impotence, infertility, multiple sclerosis etc. The seed is diuretic and hypnotic (Chopra et al., 1986).

Pharmacological activity: The effect of Withania somnifera root powder on paw volume and serum lysosomal enzyme activities was investigated in monosodium urate crystal-induced rats. The levels of β-glucuronidase and lactate dehydrogenase were also measured in monosodium urate crystal incubated Polymorphonuclear Leucocytes (PMNL). A significant increase in the level of paw volume and serum lysosomal enzymes was observed in monosodium urate crystal-induced rats. The increased β-glucuronidase and lactate dehydrogenase level were observed in untreated monosodium urate crystal incubated polymorphonuclear leucocytes. On treatment with the Withania somnifera root powder (500/1000 mg/kg body weight), the above changes were reverted back to near normal levels. Withania somnifera also showed potent analgesic and antipyretic effect with the absence of gastric damage at different dose levels in experimental rats. For comparison purpose, Non-Steroidal Anti-Inflammatory Drug (NSAID) indomethacin was used as a standard. These results provide evidence for the suppressive effect of Withania somnifera root powder by retarding amplification and propagation of the inflammatory response without causing any gastric damage (American Botanical Council, 1996).

REFERENCES