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Mulethi (*Glycyrrhiza glabra*): a plant used against cough in Uttarakhand

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ABSTRACT

Uttarakhand is a Northern state of India. It is known for its floral diversity having medicinal values. Among the floral diversity *Glycyrrhiza glabra* is very common and locally known as Mulethi. The root of Mulethi is used in cough, cold and other respiratory problems by the local communities. Authors gathered the information about Mulethi and present here.

Cough is the most common symptom of airway and lung disease for which patients seek medical attention from primary care physicians and pulmonologists (Blasio et al. 2011). It can happen when something irritates our nerve endings, called cough receptors. These nerve endings are in many areas inside our body, from our head and neck area to just above our navel. Inhaling particles, vapours, smoke, fumes, dust, or cold air may induce these receptors which may leads to cause cough (Irwin et al. 2014). This paper will discuss about an alternative medicine against cough that is Mulethi (*Glycyrrhiza glabra*). *Glycyrrhiza*

glabra, family Fabaceae, its root possess some nutritive values and medicinal properties. They are widely used as a cold beverage, in preparing some pharmaceutical preparations such as haematinic pills and to disguise the bitter taste of other remedies (Zadeh et al. 2013). It is one of the most extensively used medicinal herbs from the ancient medical history of Ayurveda. It is also used as a flavouring herb. The word Glycyrrhiza is derived from the Greek term glykos (meaning sweet) and rhiza (meaning root). *Glycyrrhiza glabra* Linn, commonly known as 'liquorice' and 'sweet wood'. It is a very

sweet, moist, soothing herb that detoxifies and protects the liver and is also a powerful anti-inflammatory, being used in conditions as varied as arthritis and mouth ulcers. Phytochemical analysis of *Glycyrrhiza glabra* root extract showed that it contains flavonoids, sterols, tannins, phenols, alkaloids and other constituents such as coumarins, sugars, amino acids, starch, choline, phytosterols etc (Arystanova et al. 2001). It was reported that *G. glabra* is significantly capable against cough like respiratory disorders. It is concluded that the *G. glabra* extract containing granules a significant antitussive effect in experimentally induced cough reflex in mice comparable to the standard drug codeine sulfate. Sharma et al. in 2017 reported that the licorice powder and extract was found to be useful for the treatment of sore throat, cough. It has antitussive, demulcent and expectorant loosening activities which may attribute due to presence of glycyrrhizin and helping to expel congestion in the upper respiratory tract as it accelerates tracheal mucus secretion. Damle in 2014 reported that *Glycyrrhiza* roots are useful for treating cough because of its demulcent and expectorant property.

Mechanism: The licorice powder and extract was found to be effective in treatment of sore throat, cough and bronchial catarrh. The specific mechanism of action is not explored till date. Licorice has been shown to work as efficiently as codeine in sore throat. It decreases irritation and produces expectorant effects. It is also able to stimulate tracheal mucus secretions producing demulcent and expectorant effects. Ethanolic extract of *G. glabra* was found to be responsible for inhibition of SO₂ gas induced cough in experimental animals (mice) (Damle 2014). Cough could

be due to a variety of reasons such as infectious, viral, bacterial, and fungal diseases. Based on the journals that were reviewed, it can be concluded that *G. glabra* is more potent against cough like respiratory disorder. Therefore, researchers can do complementary studies on this plant and also can conduct clinical trials to develop the anti-cough herbal medicines and help to make them commercially available.

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