

# Coptis chinensis - An amazing medicinal plant from China

Elizabeth Bedford B. Nat. Med., B.A., N.Z.A.M.H., N.M.H.N.Z and

Phil Rasmussen M.Pharm., M.P.S., Dip. Herb. Med.; M.N.I.M.H.(UK), F.N.Z.A.M.H.



Elizabeth is a medical herbalist and gardener, practicing in Auckland and the Coromandel. She is also involved in New Product Development for Phytomed.

Phil is an experienced phytotherapist with a clinic in Auckland where he has practiced for 25 years. He is also the founder and Technical Director of Phytomed Medicinal Herbs Ltd, a New Zealand-based manufacturer of herbal medicines sold to both practitioners and consumers in NZ and export markets.

Before pursuing herbal medicine Phil worked for more than 10 years as a pharmacist, and undertook research on antidepressant drugs and serotonin. He has lectured to naturopathy, herbal and pharmacy undergraduates, presented at conferences in New Zealand, Australia, and the UK, been on various government expert advisory committees, and written extensively on herbal subjects for both practitioner and consumer publications, for many years.



## Introduction

Because of its declining habitat in the wild, Golden Seal (*Hydrastis canadensis*) is a herb that should only be purchased from cultivated rather than wildcrafted sources (Oliver, 2017). Even then, however, it is a challenging plant to grow, and securing sufficient volumes from the annual harvest, can be difficult. Therefore, continuing to place high-demand pressure on this herb is not considered ideal. Given that the alkaloid constituent berberine is widely regarded as having numerous pharmacological actions, and seems to account for a significant part of Golden Seal's antimicrobial actions, other medicinal plants rich in this phytochemical, are of interest. Other berberine-containing herbs are of course Oregon Grape (*Mahonia aquifolium*) and Barberry (*Berberis vulgaris*), but a very interesting one from China, is Coptis (*Coptis chinensis*), which generally contains much higher levels of berberine than Golden Seal.

## Huang Lian

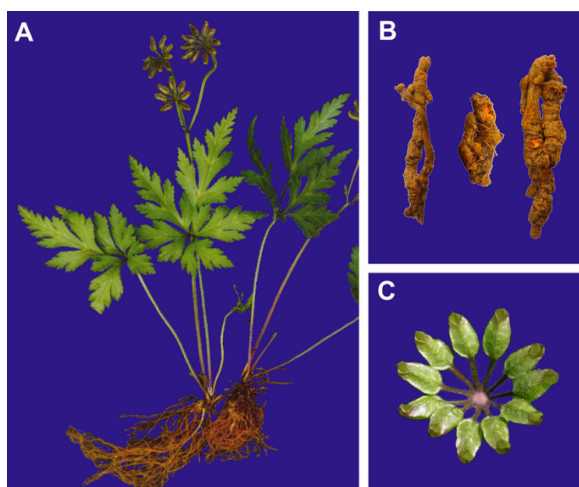
More than 380 papers have been published in peer reviewed journals on this medicinal plant, and Coptis (known as Huang lian in Mandarin), is one of the many Chinese herbs that stands out for its established medicinal properties. The name huang lian literally translates to "yellow thread", because of the intense golden colour (due to berberine content) of its rhizomes.

There are a number of Coptis species in use, but the most commonly used, with the greatest amount of research and traditional use, is *Coptis chinensis* (Coptis). It is a low growing plant indigenous to the mountainous regions of China. Originally a woodland understory plant, Coptis has now been cultivated in China for hundreds of years, and cultivated sources are preferred when they are environmentally sustainable (Qin, 2010).

One of the fifty fundamental herbs of Traditional Chinese Medicine, the rhizomes of Coptis have been used to treat digestive, respiratory, and infectious disorders for more than 2,000 years (Ho et al 2014). It's TCM properties are cold and bitter, with anti-inflammatory and antibacterial actions (A Barefoot Doctor's Manual, 1977).

Principle constituents include isoquinoline alkaloids such as berberine (3-8%), palmatine, jatrorrhizine, coptisine and columbamine; lignans, phenylpropanoids, flavonoids, phenolic acids and sterols (Friedemann et al, 2015).

One of these main constituents, berberine, has been intensively studied, and has many actions attributed to it, as alluded to earlier. Practitioners should note, however, the finding that berberine does not cross the gastrointestinal tract membrane readily; its actions are most focussed therefore, in the gastrointestinal tract itself, or on other bodily surfaces within which it comes into contact (Kamath et al, 2009).



*Coptis chinensis* A: whole plant. B: Dried rhizome. C: Carpels. (Creativecommons.org, n.d.)