

# Goji berries

## 宁夏枸杞

*Lycium barbarum*

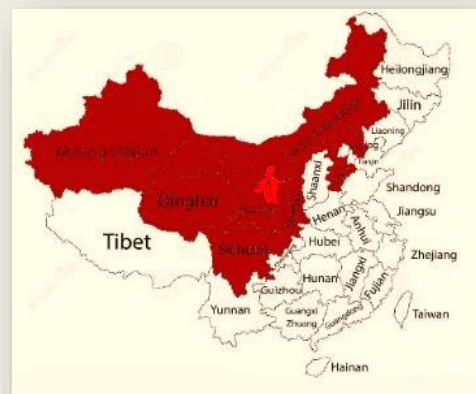
Wolfberry, Duke of Argyll's Tea

Goji berries have been important as a food plant and as an integral component of traditional medicine in China since at least the 3<sup>rd</sup> century CE, the time of the Han Dynasty. In recent years Goji berries have been marketed in western nations as a *superfood*, but what are they?

Goji fruit are the berries of a scrambling shrub, *Lycium barbarum*, that has its origins in the dry northern provinces of China, including Ningxia, Gansu, northern Hebei, Inner Mongolia, Qinghai, northern Shanxi, Sichuan and Xinjiang. The name Goji has been taken from the Chinese name 宁夏枸杞 Ningxia gouqi. Goji berries have been cultivated along the floodplains of the

Yellow River for more than 600 years, and in 2001, 13,000 tons of fruit was produced from Ningxia in north-central China alone. There is also a second species, *L. chinense*, important as a food product and for its medicinal qualities, but not considered to be quite in the same league as *L. barbarum*.

Ningxia borders three deserts and Goji plants are commonly established to mitigate erosion and to reclaim arable lands from desertification.





Cultivated Goji (*Lycium barbarum*) berries in China. Paul Gross (paul144) and Richard Zhang/Public Domain

Now they're not only cultivated but have become naturalised in many parts of Asia and Europe. In England, they can be found growing in hedgerows. They have also escaped cultivation and become naturalised across much of eastern Australia.

Goji berries as a food product contain significant levels of carbohydrates, proteins and dietary fibre, also Vitamin A, Vitamin C, and B vitamins Thiamine, Riboflavin and Niacin, and other essential and trace minerals. Seeds contain linoleic acid, an omega-6 fatty acid, and young shoots and leaves are harvested and used as a leafy vegetable. However, contrary to many sources, and probably disappointing to many, goji fruit only contain about half (29 mg/100 g) the Vitamin C of oranges (53 mg per 100 g).

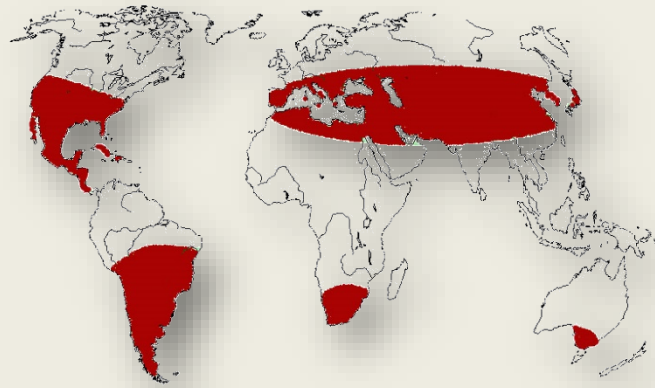
There have been endless health benefits attributed to goji fruits, but few, if any, have been substantiated. Claims include curing cancer and increasing longevity. There is a story that a Chinese man, Li Qing Yuen, supposedly ate goji fruits every day, and lived from 1677 to 1933 - to the grand old age of 256 years! However, this is possibly **fake news**! Few, if any, have been scientifically tested; some studies may have been tested *in vitro* only; many are non-compliant with regulatory guidelines; and there has been poor-quality control in manufacture. However, that doesn't mean that Goji berries are not worth eating. They are a tasty and nutritious snack.

Possibly the greatest concern would be the high levels of pesticide detected in imported goji berries. In the USA, these have included insecticides such as fenvalerate, cypermethrin and acetamiprid, and fungicides such as triadimenol and isoprothiolane, and the U.S. Food and Drug Administration has, at times, ordered that shipments be seized for destruction. Food Standards Australia New Zealand report chlorpyrifos, cyhalothrin, cypermethrin, difenoconazole, triadimefon and propargite in imported goji berries, but advised that the levels detected did not pose a medium or high risk to health.





There are about 80 *Lycium* species in the world, mostly in South America and South Africa, a few in Europe and in Asia. China has 7 species, and in Australia, in addition to 3 naturalised species, we have one endemic, *L. australe*, scattered across drier areas of western NSW, Victoria, southern South Australia and Western Australia. The fruit is edible. Don't confuse it with the African Boxthorn, *L. ferocissimum*, a significant economic pest in Australia.



World distribution of *Lycium*

Do the flowers and fruit look somehow familiar? They should, as this is yet another genus in the Solanaceae, that amazing plant family that includes tomatoes, potatoes, capsicums, chilis, egg plants, petunias and many more.

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*Flora of China: Lycium*

Flora of China: [http://www.efloras.org/florataxon.aspx?flora\\_id=2&taxon\\_id=200020536](http://www.efloras.org/florataxon.aspx?flora_id=2&taxon_id=200020536)

Food Standards Australia New Zealand. 2015. *Imported food risk statement Goji berries and Agricultural Chemicals*. [www.foodstandards.gov.au](http://www.foodstandards.gov.au)

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Wikipedia: [https://en.wikipedia.org/wiki/Goji#cite\\_note-Gross-12](https://en.wikipedia.org/wiki/Goji#cite_note-Gross-12)

Wikipedia: <https://en.wikipedia.org/wiki/Lycium>

Wikipedia: [https://en.wikipedia.org/wiki/Lycium\\_barbarum](https://en.wikipedia.org/wiki/Lycium_barbarum)

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