

Monk Fruit

WHAT IS MONK FRUIT?

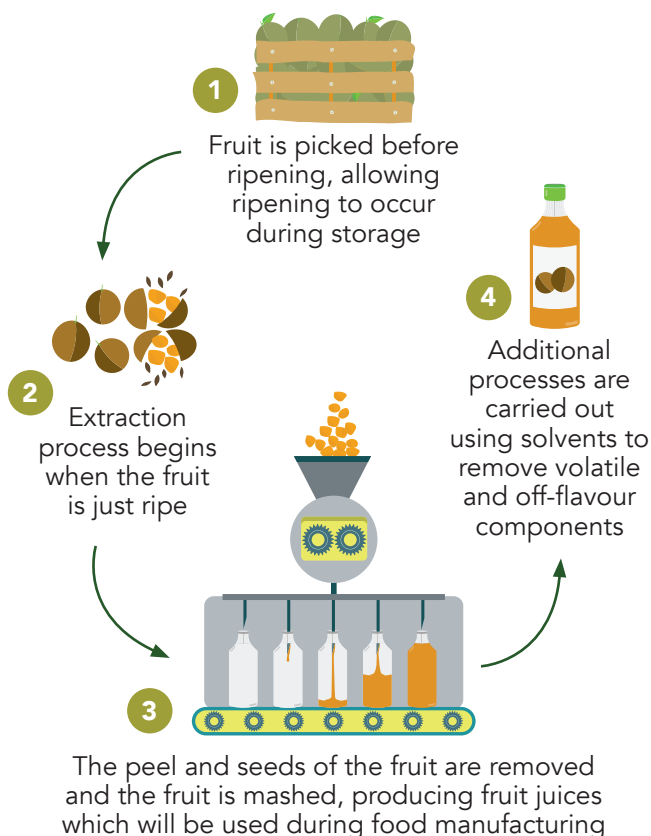
- A natural, high-intensity sweetener.
- Commonly known as Monk Fruit or *lo han guo*, this fruit is a derivative of the Chinese plant *Siraitia grosvenorii* which belongs to the Cucurbitaceae (cucumber or melon) family grown in Southeast Asia.
- The sweet constituents of the plant are known as triterpene glycosides or Mogrosides.
- Mogroside V is the most abundant mogroside in nature, of which 50% of its sweet constituents are present in mature fruits.
- Mogrosides occur at around 1% in the dried fruits.
- The fruit itself, though sweet, has additional flavours that make it unsuitable for widespread use as a sweetener.



HOW IS MONK FRUIT PROCESSED FOR USE IN FOODS?



Monk Fruit sweeteners are extracted from the plant based on the following process:



PROPERTIES OF MONK FRUIT



- Non-caloric, contributing to 0 kcal/g.
- 100-250x sweeter than sucrose.
- Empirically, Monk Fruit presents itself as a stable sweetener as it resembles the structure of Steviol glycosides which are known to exhibit excellent stability.
- While there are different type of Mogrosides within the plant, its structures vary. The configuration of hydroxyl group on the carbon of the Mogroside is the key factor determining its sweetness. The hydroxyl group with alpha configuration contributes to the sweet taste, while beta configuration turns into bitter taste.
- The amount of Mogroside present in the fruit fluctuates during the ripening process with the ripened monk fruit containing the most Mogroside V which influences the sweet flavour in the fruit extract.
- Monk Fruit sweeteners can leave a liquorice, cooling aftertaste.

APPLICATIONS



Monk Fruit have been used as an ingredient in table-top sweeteners, breakfast cereals and beverages as part of an overall sweetening system with other ingredients that can contain calories.

REGULATORY STATUS OF MONK FRUIT



Leading global health authorities such as the **European Food Safety Authority (EFSA)**, **FAO/WHO Joint Expert Committee on Food Additives (JECFA)**, **U.S. Food and Drug Administration (FDA)**, **Food Standards Australia New Zealand (FSANZ)** and **Health Canada** have found low and no-calorie sweeteners to be safe.

Monk fruit extract has been recognised as Generally Recognised as Safe (GRAS) by the FDA for use in foods and beverages since 2010.

An ADI has not been established for Monk Fruit as a numerical ADI may not be deemed necessary as the safety levels of the ingredient is well above the amounts needed to achieve the desired effect in food.



Monk Fruit in a Nutshell

Scientific Name

Siraitia grosvenorii

Common Name(s)

Lo han guo, Arhat fruit, Monk Fruit

Brand Name

Pure-Lo®, Monk Fruit in the Raw®

Sweetness Intensity

100-250x sweeter than sucrose

ADI Limit

Not Applicable

Safe for Children?

Yes

Safe for Pregnant and Breastfeeding Women?

Yes

Nutritive Value

0 kcal/g



References

- ¹ Mérillon, J. and Ramawat, K. (2018). *Sweeteners*. Cham, Switzerland: Springer Nature.
- ¹ Hartel, R., von Elbe, J. and Hofberger, R. (2018). *Confectionery Science and Technology*. Cham: Springer International Publishing.
- ¹ O'Donnell, K. and Kearsley, M. (2008). *Sweeteners and Sugar Alternatives in Food Technology*. 2nd ed. New York, NY: John Wiley & Sons.