

Kiwifruit is Fruit for Nutritional Security

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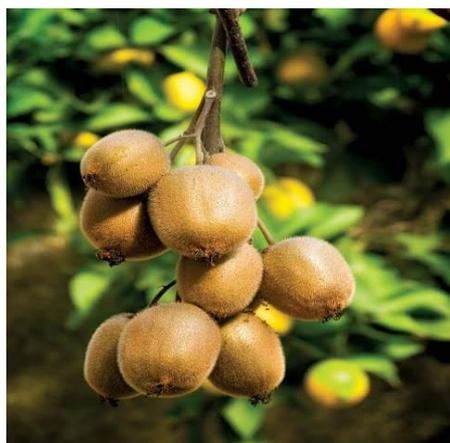
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SUMMARY

Kiwifruit is native to Asia and has become popular worldwide due to its sensory and nutritional properties. Kiwifruit are a nutrient-dense fruit and extensive research over the last decade on the health benefits of kiwifruit has linked their regular consumption to improvements not only in nutritional status, but also benefits to digestive, immune and metabolic health. Kiwifruits show a wide diversity in size, shape, fuzziness, and flesh and peel color and flavour. The export of fresh kiwifruit has led to rapid expansion of kiwifruit industry throughout the world. Kiwifruit has become a commonly consumed fruit and is easily available round the year. Kiwifruit is largely consumed as fresh but it is also available in processed forms as juices, fortified drinks, candies, and dehydrated and lyophilized products. Kiwifruit is also minimally processed to provide consumers with ready to eat products.

INTRODUCTION

Kiwifruit belongs to family Actinidiaceae and genus Actinidia. The kiwifruit of commercial cultivation are large-fruited selections of predominantly *Actinidia deliciosa*. Hayward (green kiwifruit) and an increasing range of gold varieties of various *Actinidia* species. Kiwifruit is well known for its flavour and vitamin C content. It is a climacteric fruit and is very sensitive to ethylene. Botanically, kiwifruit is a berry with various locules filled with numerous small and soft black seeds. Its flesh is divided into three regions: the outer pericarp, the inner pericarp with seeds, and the columella (Guroo et al. 2017). Kiwifruit are exceptionally high in vitamin C and contain an array of other nutrients, notably nutritionally relevant levels of dietary fibre, potassium, vitamin E and folate, as well as various bioactive components, including a wide range of antioxidants, phytonutrients and enzymes, that act to provide functional and metabolic benefits. The contribution of kiwifruit to digestive health is attracting particular attention owing to a growing body of evidence from human intervention studies (Kaur et al 2010) There are several plausible mechanisms of action that are likely to act together including the fibre content and type, the presence of actinidin (a natural proteolytic enzyme unique to kiwifruit which breaks down protein and facilitates gastric and ileal digestion and other phytochemicals which may stimulate motility (Ciardiello et al 2014).



Nutritional Value of Kiwifruit per 100 gm.

Name	Amount	Name	Amount
Water	83.9g	Calcium, Ca	35mg
Energy	58 Kcal	Iron, Fe	0.24mg
Protein	1.06g	Magnesium, Mg	15.7mg
Ash	0.63g	Phosphorus, P	34mg

Carbohydrate	14g	Potassium, K	198mg
Fiber, total dietary	3g	Sodium, Na	5mg
Sugars, Total NLEA	8.99g	Vitamin C, total ascorbic acid	74.7mg
Thiamin	0.027mg	Isoleucine	0.046g
Riboflavin	0.025mg	Leucine	0.059g
Niacin	0.37mg	Lysine	0.055g
Tryptophan	0.013g	Methionine	0.022g
Threonine	0.043g	Cysteine	0.028g

(Source: USDA database, 2019)

Health Benefits of Kiwifruit

- Antioxidant and anti-inflammatory activities
- Kiwifruit stores a good amount of proteolytic enzyme actinidin a protein-dissolving enzyme that improves the digestion of proteins.
- Kiwifruit is a good source of vitamin C which is essential nutrient that works in our bodies as an antioxidant to help prevent damage caused by the sun, pollution and smoke, smooth wrinkles, keep the skin young, vibrant and improve overall skin texture.
- Kiwifruit is a good source of protective polyphenols along with vitamin C, vitamin E and potassium. These are effective in the maintenance of cardiovascular health.
- Kiwifruit is a source of serotonin, which helps to promote better sleep. The consumption of kiwi may also help in improving the sleep onset and reducing the waking time after the onset.
- The consumption of this fruit facilitates the absorption of iron, which helps to prevent anaemia

CONCLUSION

Kiwifruit are a nutrient-dense fruit and extensive research over the last decade on the health benefits of kiwifruit has linked their regular consumption to improvements not only in nutritional status, but also benefits to digestive, immune and metabolic health. The health benefits of consuming fruit are well documented. Kiwifruit are exceptionally high in vitamin C and contain an array of other nutrients, notably nutritionally relevant levels of dietary fibre, potassium, vitamin E and folate, as well as various bioactive components, including a wide range of antioxidants, phytonutrients and enzymes, that act to provide functional and metabolic benefits. The contribution of kiwifruit to digestive health is attracting particular attention owing to a growing body of evidence from human intervention studies. There are several plausible mechanisms of action that are likely to act together including the fibre content and type, the presence of actinidin (a natural proteolytic enzyme unique to kiwifruit which breaks down protein and facilitates gastric and ileal digestion and other phytochemicals which may stimulate motility).

REFERENCES

- Boeing H, Bechthold A, Bub A, Ellinger S, Haller D, Kroke A, Leschik-Bonnet E, Müller MJ, Oberritter H, Schulze M, Stehle P, Watzl B. (2012) Critical review: vegetables and fruit in the prevention of chronic diseases. *Eur J Nutr.* 51:637–663.
- Kaur L, Rutherford SM, Moughan PJ, Drummond L, Boland MJ. (2010) Actinidin enhances gastric protein digestion as assessed using an in vitro gastric digestion model. *J Agric Food Chem.* 58(8):5068–5073.
- Huang HW, Ferguson AR (2007) Actinidia in China: Natural diversity, phylogeographical evolution, interspecific gene flow and kiwifruit cultivar improvement. *Acta Hort* 753: 31-40.
- Ciardiello MA, Meleleo D, Saviano G, Crescenzo R, Carratore V, Camardella L, Gallucci E, Micelli S, Tancredi T, Picone D, Tamburrini M. Kissper,(2008) A kiwi fruit peptide with channel-like activity: structural and functional features. *J Pept Sci.* 14(6):742–754.
- Guroo I, Wani SA, Wani SM, Ahmad M, Mir SA and Masoodi FA (2017) A Review of Production and Processing of Kiwifruit, *J Food Process Techno*, 8:10