



# Buckwheat

## Golden crop for future

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## Introduction

Buckwheat is an important underutilized crop in mountainous regions. It has been cultivated since ancient times for use as food, feed, medicine, and manure. It is well known for its nutritional properties. In recent times, consumer awareness and a growing demand for well-balanced foods have led to the growth of buckwheat. Its flour has gluten-free proteins and an amino acid profile that is well balanced, and it also contains numerous bioactive compounds. It is a dicotyledonous plant from the Polygonaceae family (Joshi *et al.*, 2020). Buckwheat is a common term for two cultivated species, i.e., common buckwheat (*Fagopyrum esculentum* Moench) and tartary buckwheat (*Fagopyrum tataricum*

Moench) (Zhou *et al.*, 2018). It contains the name "wheat," but it is not related to wheat and belongs to different taxa. It can be included in cropping systems for diversification (Boukid *et al.*, 2018). It has great potential due to its short life cycle. It can be grown at high altitudes and in marginal ecosystems. It is a multipurpose crop (Li and Zhang, 2001). It also improves soil structure and phosphorus availability. It is a fast-growing crop, so it can be used as a smoother crop for controlling weeds. It could not be popularised on a large scale due to low productivity. It is called by various names in India, such as Kutu in Hindi, Phaphar in Garhwali, and Oggal in Kumaoni.

## Distribution

Common buckwheat grows well at lower elevations, and it is cultivated in almost all cereal crop-growing countries in the world. Tartary buckwheat grows well at higher elevations, and its cultivation is limited to Asia. In India, it is cultivated in the foothills of the Himalayas, ranging from Ladakh to Arunachal Pradesh. It is cultivated in Ladakh and Gurez valleys of Jammu and

Kashmir, Pangi, Lahul, and Pin valleys of Himachal Pradesh, Pindari and Darma valleys of Uttarakhand, Cooch Behar and Darjeeling regions of West Bengal, Lachen and Lachung regions of Sikkim, and Tawang, Bomdila, and Dirang regions of Arunachal Pradesh. On a smaller scale, it is also grown under the Nilgiris and Palani hills in southern India (Rana *et al.* 2012).

## Importance

Buckwheat is gaining status as a superfood because it possesses a higher amount of proteins, carbohydrates, lipids, minerals, and vitamins as compared to major cereal crops (Wei *et al.*, 2003; Sing *et al.*, 2020). It is rich in amino acids, especially arginine, aspartate, and lysine. Its flour contains easily digestible protein with well-balanced amino acids (Bonafaccia *et al.*, 2003). It is very useful for people suffering from celiac disease (Comino *et al.*, 2013). Its flour protein is also beneficial for people

suffering from cancer, diabetes, and hypertension. Its leaves, flowers, and seeds possess various bioactive compounds such as rutin, orientin, vitexin, catechins, flavones, flavonoids, phytosterols, D-chiro-Inositol, myo-inositol and other polyphenols. It is the only pseudocereal that contain rutin (Zhang *et al.*, 2012). Its grain contains phenolic compounds and flavones such as hyperin, quercitrin, and quercetin. These compounds have antihypertensive and antihypercholesterolemic effects. Its

grain contains high content of dietary fibre and low content of  $\alpha$ -gliadin. It is recommended for in typhoid and liver ailments. Buckwheat grains are rich source

### Buckwheat varieties:

The first buckwheat variety, namely Bogatyr, was developed in Russia. In India, improved cultivars of buckwheat were developed by various government research

### Conclusion

Globally, agriculture is undergoing significant changes due to the expanding demand for food and nutrition as a result of a burgeoning population and the effects of climate change. Buckwheat is named the "golden crop" of the future because of its nutraceutical values. It is a versatile crop, having multiple uses for food, feed, bakery items, noodles, pasta, buckwheat honey, and vegetables. It is also useful in the pharmaceutical industry for the

of various microelements, such as: Zn, Cu, Mn, Se and macroelements: K, Na, Ca, and Mg (Podolska *et al.*, 2021).

organisations such as Himpriya, Himgiri, VL UGAI, PRB1, Sangla B1, Himphara, etc.

manufacturing of syrups, capsules, and aqua. It has tremendous potential in the future due to the rising demand for nutrient-rich food. It is crucial for economic and agricultural sustainability. It is well suited for the diversification of cropping systems due to its short life cycle. Under changing climate conditions, it has a lot of potential due to its ability to grow under harsh conditions and on marginal lands.

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