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**Reena**  
Department of Food Technology,  
Maharshi Dayanand University,  
Rohtak, Haryana, India

**Ritika B Yadav**  
Department of Food Technology,  
Maharshi Dayanand University,  
Rohtak, Haryana, India

## Nutritional and health benefits of cereal grasses: A review

**Reena and Ritika B Yadav**

### Abstract

Cereal grass, the young green plant which grows to produce the cereal grain is one of the “functional food” that is gaining popularity as a potential nutritional product with medical and health benefits. Young plant parts are characterized by increased content of some vitamins, pro vitamins, antioxidants and other bioactive substances. In the modern era consumers are very much aware about their health. So the demand of functional food is increasing day by day at the global level. A functional food is defined as “any food that has a positive impact on an individual health, physical performance or state of mind in addition to its nutritive value”. Cereal grass known as whole and green food with nutritional properties like have all amino acids, rich in minerals, vitamins and rich in different antioxidants. It is one of the foods that are included in the category of green food that is regarded as super natural nutrient source by health-conscious people. Cereal grasses are inexpensive and efficient source of nutrition. Cereal grass juice or powder is the richest source of chlorophyll, active enzymes, vitamin A, B, C, E, K, calcium, potassium, iron, magnesium, sodium, sulphur and amino acids. Regular consumption of cereal grass powder also eliminates toxin from the body, reduce cholesterol, improve digestion and balances blood sugar. Cereal grasses inhibit the cancer cell growth by combined effects of anti-oxidants, phytochemicals, flavonoids and chlorophyll. The dried powder and extract of cereal grasses can be easily used for the preparation of therapeutic and value-added food products having good nutritional value.

**Keywords:** Nutritional, health benefits, cereal grasses

### Introduction

- Cereal grass, the young green plant which grows to produce the cereal grain is one of the “functional food” that is gaining popularity as a potential nutritional product with medical and health benefits. Young plant parts are characterized by increased content of some vitamins, pro vitamins, antioxidants and other bioactive substances.

Cereal grass is an inexpensive and efficient source of iron and also provide many required nutrients and medicinal benefits for a healthy and rejuvenating body. It is one of the food that is included in the category of green foods that are regarded as super natural nutrient source by health-conscious people. It is believed that pharmacological potential of cereal grass is due to its high nutrient content and presence of bioactive compound, which makes it a medicinal plant for the treatment of various disease and life threatening conditions Cereal grass juice or powder is the richest source of chlorophyll, active enzymes, vitamin A, B, C, E, K, calcium, potassium, iron, magnesium, sodium, sulphur and amino acids. The procurement of fresh cereal grass is not practically feasible, but the dried powder of cereal grass can be easily used for the preparation of therapeutic food products having good nutritional value. The products prepared from cereal grass powder and juice can be commercialized and have a great potential to exploit the health promoting benefits of cereal grass. There is no previous scientific study on the processed food product enriched with cereal grass flour. A systematic study and evaluation of nutritional and health promoting components provided by cereal grass in the processed food products is required for recommending such functional and health foods to the population for the good health as well as to cure problem like metabolic syndrome, and cardio vascular diseases.

### Therapeutic Value of Cereal Grasses

- Cereal grass promote sleep, regulate blood pressure, enhances immunity, protect liver, improve gastro- intestinal function. It has lots of health effect such as hypolipidemic, hypoglycemic, preventive constipation, anticancer and antioxidant activity. Vitamins in barley grass promote sleep; have antidepressant, antioxidant and prevent cardio vascular diseases, decrease total cholesterol, LDL cholesterol and oxygen free radicals.
- Young cereal grass leaves help to suppress a number of health disorders including obesity,

### Correspondence

**Reena**  
Department of Food Technology,  
Maharshi Dayanand University,  
Rohtak, Haryana, India

diabetes, circulatory disorder, anaemia, excess cholesterol level and cancer.

- Cereal grass inhibits the cancer cell growth by combined effects of anti-oxidants, phytochemicals, flavonoids and chlorophyll (Kubatka *et al.*, 2016).
- Cereal grass contain a wide spectrum of vitamins, minerals, amino acids including eight essential ones that we must get from our diet, protein, enzymes, chlorophyll and phytochemical. It is rich in gamma-amino butyric acid (GABA), flavonoids, tryptophan, chlorophyll, vitamin (B1, C and E), dietary fibre, polysaccharide and polyphenol.

- Cereal grass is promoted as a source of antioxidants, the most important being O-glycosylisovitexin, superoxide dismutase (SOD), catalase (CAT) and carotenoids.
- Regular consumption of cereal grass powder also eliminates toxin from body, reduce cholesterol, improve digestion and balances blood sugar. It is believed that pharmacological potential of cereal grass is due to its high nutrient content and presence of bioactive compound, which makes it a medicinal plant for the treatment of various disease and life threatening conditions.

**Table 1:** Functional ingredients of barley grass for therapeutic chronic disease

S.no	Chronic disease	Functional ingredients
1.	Antioxidants	Chlorophyll, saponarin, glutathione, SOD, flavonoid.
2.	Anticancer	Alkaline, flavonoids, chlorophyll, SOD
3.	Antidiabetes	Saponarin, dietary fibre, Ca, SOD
4.	Enhance immunity	Arabinoxylan, polysaccharide, GABA
5.	Regulating blood pressure	Saponarin, lutanarin, K, Ca, GABA
6.	Antidepressant	GABA, saponarin, vitamins and minerals
7.	Preventive heart disease	K, GABA
8.	Promote sleep	GABA, Ca, K, tryptophan, vitamin C
9.	Preventive constipation	Dietary fibre
10.	Protective liver	Saponarin, SOD, GABA
11.	Calcium supplement	Ca
12.	Improve cognition	GABA, K, SOD
13.	Improve gastrointestinal	Dietary fibre, selenium, GABA
14.	Hypolipidemic	Saponarin, polysaccharide, alkaloid SOD
15.	Anti-inflammation	Chlorophyll, saponarin, SOD, GABA, tryptophan

Source: Zeng *et al.* (2018).



**Fig 1:** Cereal Grasses



**Fig 3:** Cereal Grass Juice



**Fig 2:** Cereal Grasses



**Fig 4:** Cereal Grass Powder

### Benefits of Cereal Grasses

- Boost immune system.
- Protect body against cancer.
- Effective in treating in ulcerative colitis.
- Helps to prevent sign of ageing.
- Reduce risk of excess acidity in body.
- Aids in strengthening and detoxification of liver.
- Help to protect skin against harmful UV rays.

### References

1. Chen GT, Zhao LY, Qi GH. Effect of barley green on nutritional physiological functions of growing rats. *Sci. and Tech. of Food Ind.* 2012; 33(3):361-368.
2. Das A, Raychaudhuri U, Chakraborty R. Effect of wheatgrass for enhancing the nutritional, textural, total antioxidant and sensory characteristics of 'Idli'-An Indian steam rice cake. *Journal of Food Technology.* 2013; 11(3):63-74.
3. Ivana P, Ehrenbergerova J, Gabrovaska D, Havlova P, Winterova R. Evaluation of barley grass as a potential source of some nutritional substances. *Czech J Food Sci.* 2007; 25:65-72.
4. Kubatka P, Kello M, Kajo K. Young barley indicates antitumour effects in experimental breast cancer *in vivo* and *in vitro*. *Nutrition and Cancer.* 2016; 68(4):611-621.
5. Lahouar L, El-Bok S, Achour L. Therapeutic potential of young green barley leaves in prevention and treatment of chronic disease: an overview, *The American J of Chinese Medicine.* 2015; 43:1311-1329.
6. Rahman R, Hiregoudar S, Veeranagouda M, Ramchandra CT, Nidoni U, Roopa RS, Kowalski R, Ganjyal G. Effects of wheat grass powder incorporation on physicochemical properties of Muffins. *International Journal of Food Properties.* 2015; 18:785-795.
7. Zeng Yawen, Xiaoying PU, Jiazhen Yang. Preventive and Therapeutic role of functional ingredients of barley grass for chronic diseases in human beings. *Oxidative Medicine and Cellular Longevity*, 2018, 15.