Barley

Latin Name: *Hordeum vulgare*

Also known as: Barley Grass, Pearl Barley, Pearled Barley, Pot Barley, Scotch Barley, Sprouted Barley, Sprouted Barley Malt

Scientific Classification

Traditional classification of barley divides similar forms of barley into separate species. For example, two-rowed barley with shattering spikes (wild barley) is Hordeum *spontaneum*; with non-shattering spikes, *H. distichum*; six-rowed barley with non-shattering spikes as *H. vulgare*, with shattering spikes as *H. agriocrithon*. These differences are minor. Form, structure and function of the plants are similar, leading most recent classifications to treat these variations as a single species, *H. vulgare.*

Family:	Poaceae/ Gramineae – grass family
Genus:	Hordeum – barley
Species:	*H. vulgare* – common barley
Species:	*H. distychum* (and many more)

Influence on the Body	**(PRINCIPAL ACTIONS are listed in CAPITAL LETTERS)**
Addictions	smoking
Blood and Circulatory System	ANEMIA • BLOOD PURIFIER • cholesterol • heart disease • high blood pressure
Body System	general ILLNESS • demulcent (softens and soothes inflammation of mucous membranes) • tonic (increases energy and strengthens the muscular and nervous system while improving digestion and assimilation, resulting in a general sense of well-being)
Cleansing	body odor • heavy metals • METAL POISONING • toxic conditions
Diabetes	Diabetes (blood sugar)
Digestive Tract	digestion • NUTRITIVE • ulcers • gastritis • constipation • POLYPS
Endocrine System	pancreatitis
Infections and Immune System	allergies • hay fever • infections • FEVERS • virus attack • herpes • leprosy • CANCER • AIDS • immuno-stimulant
Inflammation	INFLAMMATION • ARTHRITIS • MUCOUS MEMBRANE

Liver	hepatitis
Lungs and Respiratory System	bronchitis • asthma • tuberculosis
Muscles	lumbago (lower backache) • MUSCULAR DYSTROPHY
Nervous System	adaptogenic (increases resistance to stress) • anxiety
Reproductive System	syphilis *Male:* • impotence
Skin, Tissue & Hair	skin problems • emollient (softens and soothes skin when applied externally, and mucous membranes when taken internally) • acne • eczema • psoriasis • BOILS • LIVER SPOTS • ANTI-AGING
Urinary Tract	kidney
Weight	EXCESSIVE APPETITE • obesity

Key Properties:

• *NUTRITIVE – full of nutrients, builds blood, improves appetite, anti-aging, regulates blood sugar balance, provides bulk*

• *BLOOD CLEANSER – cleanses system, lowers blood cholesterol*

Primarily affecting: *BLOOD • COLON*

History	Barley is one of the most ancient of cultivated grains. Barley seeds have been found in tombs in Asia Minor dating from about 3500 B.C. According to Deuteronomy 8:8, ancient Israel used barley as one of the "Seven Species" of crops that characterized the fertility of the Promised Land of Canaan, and it had a prominent role in Israelite sacrifices. (Numbers 5:15). Alongside wheat, barley was a staple cereal and known as a sacred grain in ancient Egypt, where it was used to make bread and beer. Greek athletes attributed much of their strength to their barley-rich training diets. Roman athletes continued this tradition. Gladiators were known as hordearii, which simply means 'eaters of barley.' In the grain form, barley is known for its soothing and

strengthening properties. It is easy to assimilate into the digestive system. Barley water has been used for various medicinal purposes. An entire book on the benefits of gruel made from barley was written by Hypocrites (460-377 BC).

In Islam, the Prophet Muhammad (570-630 AD) prescribed barley for seven diseases. These included grief, high cholesterol levels, heart disease, treatment of cancer, diabetes, hypertension, and the effects of aging. It was also said to soothe and calm the bowels.

In his 11th century work, *The Canon of Medicine*, Avicenna wrote of the healing effects of barley water, soup and broth for fevers.

Europeans in the Middle Ages made bread with a combination of barley and rye because wheat was expensive and not always available. English herbalist and physician Nicholas Culpeper (1616 - 1654 AD) wrote of barley as giving 'great nourishment to persons troubled with fevers, agues, and heats in the stomach.'

The Spanish introduced barley to South America in the 16th century, while the English and Dutch settlers brought barley with them to the North American colonies in the 17th century. It was one of the first crops planted in the Virginia Colony in 1611.

Today, the largest commercial producers of barley are Canada, the United States, Germany, France, Spain, and the Russian Federation. Half of the United States' barley production is used as animal feed, with smaller amounts used for health food products and malting (principally for beer and whiskey manufacture).

Attributes

Whole Grain:
The whole grain cereal known as barley is a nutritious food source with significant contributions to health and healing. Although the grain is not considered an herb supplement, the health benefits are worth mentioning.

Barley Grass:
Young barley grass is what is typically referred to when discussing barley as an herb. It is used as a raw powder, freeze dried, evaporated powder or juiced product as health supplements.

Barley Grain

Barley is a wonderfully versatile cereal grain with a rich nut-

like flavor and an appealing chewy, pasta-like consistency (due to its gluten content). Its appearance resembles wheat berries, although it is slightly lighter in color. Sprouted barley is naturally high in maltose, a sugar that serves as the basis for both malt syrup sweetener and (when fermented) as an ingredient in alcoholic and non-alcoholic beer and other alcoholic beverages.

Nutrition Found in Whole Grain Cereal

Key Components: (including, but not limited to)

Vitamins B1 (thiamine) • B2 (riboflavin) • B3 (niacin or nicotinic acid) • B5 (pantothenic acid) • B6 (pyridoxine) • B9 (folic acid) • C • Calcium (most Americans do not get enough calcium in their diets) • Copper (a cofactor in essential enzymes affecting the substance and flexibility of blood vessels, bones and joints) • Iron • Magnesium • Manganese • Phosphorus (found in cell structures, bone matrix, DNA, and energy systems of the body) • Potassium • Selenium • Zinc • Dietary Fiber • Carbohydrates • Fats • Proteins • all eight Essential Amino Acids • Lignans

Digestion

For weak and fragile individuals, barley water and gruel has been used since ancient times to provide easily assimilated nourishment and for increasing strength and stamina.

Barley's fiber promotes regularity, overall intestinal protection and relieves diarrhea, gastritis and inflammatory bowel conditions. As a source of bulk, it decreases the transit time of fecal matter, lowering the risk of colon cancer and hemorrhoids.

Barley's dietary fiber provides food for the 'friendly' bacteria in the large intestine and as they grow in number, they crowd out pathogenic (disease-causing) bacteria from surviving in the intestinal tract. When these helpful bacteria break down barley's insoluble fiber, they produce a short-chain fatty acid called butyric acid, which helps maintain a healthy colon.

Cholesterol and Heart Disease

Numerous studies report a lowering of cholesterol and fatty lipids in the blood, measurably reducing the risk of high blood pressure and heart attack with the regular use of barley. (1)(2)(3)(4)(5)

Barley is one of the foods the FDA (U.S. Federal Drug Administration) permits to display a health claim stating consumption is linked to lower risk of heart disease and certain cancers. These include foods that have at least 51 percent whole grains by weight, low in fat, saturated fat and

cholesterol.

Blood Sugar

The dietary fiber in barley helps to prevent blood sugar levels from rising too high in people with diabetes. According to a recent study, eating whole grain barley can regulate blood sugar levels for up to10 hours after consumption. (6)

Barley and other whole grains are a rich source of magnesium, a mineral that acts as a co-factor for more than 300 enzymes. These include enzymes affecting the body's use of glucose and insulin secretion. Research now suggests that regular consumption of whole grains reduces risk of type 2 diabetes. (7)(8)(9)

Asthma

Increasing consumption of whole grains and fish can reduce the risk of childhood asthma by about 50 percent, according to the International Study on Allergy and Asthma in Childhood. (10)

Cancer

Barley packs a two-sided attack against certain cancers. By providing fiber needed to minimize the amount of time cancer-causing substances spend in contact with colon cells, and by being a good source of selenium, which has been shown to significantly reduce the risk of colon cancer. (11)

Lignans found in barley are thought to protect against breast and other hormone-dependent cancers, as well as heart disease. Studies found that a diet rich in fiber from whole grains (such as barley) and fruit offered significant protection against breast cancer for pre-menopausal women. (12)(13)

Obesity

Studies have clearly shown that dietary fiber is an important tool in the prevention of obesity. Compared to an average American meal, a fiber-rich meal is processed more slowly and nutrient absorption occurs over a longer period of time. Nutritionists conclude that fiber promotes satiety (feeling full) and satisfies the body's craving for nutrients by increasing the absorption of micronutrients. Long term observational studies consistently report lower weight in individuals consuming higher levels of fiber. (14)(15)(16)

Barley Grass

Young barley grass contains more concentrated nutrients than adult barley grass, having increased amounts of live enzymes, protein, vitamins, minerals and chlorophyll. I have seen the biggest change and improvement in people's health when they add what I call 'greens' to their diet. By 'greens', I mean barley grass and alfalfa grass.

Taking 1 or more tablespoons of greens a day, mixed in juice or water, is like adding jet fuel to your engine. You feel it and your body responds by using the blast of added nutrients to help the body heal. I believe it to be, by far, the best daily supplement anyone can take. Try it for yourself. Take 1 tablespoon of greens for 30 days, and you will be a believer!

Nutrients in Barley Grass

Key Components: (including, but not limited to)

Vitamins

A (in the form of beta carotene, comparison tests have shown barley grass juice powder to have as much as 6 times more than that found in spinach) • B1 (thiamine - has 30 times more than cow's milk) • B2 (riboflavin) • B5 (pantothenic acid) • B6 (pyridoxine) • B9 (folic acid) • B12 (cobalamin, works to overcome fatigue and anemia) • C (has nearly 7 times more than an equal amount of oranges) • E

Minerals

• Calcium (11 times that found in cow's milk) • Copper • Iron (5 times the iron in spinach) • Magnesium • Manganese • Phosphorus • Potassium • Sodium • Zinc • trace minerals

Other Components

• Chlorophyll • Enzymes • Super Oxide Dismutase (SOD, a free radical scavenger, in greater amounts than most any other food source available. It is an excellent blood and immune builder) • eighteen Amino Acids (including all eight essential ones)

Chlorophyll

Barley grass has very high chlorophyll levels. Chlorophyll accounts for many of the health benefits derived from taking barley grass. It works synergistically with other nutrients in barley to renew cell growth, to cleanse the body of wastes, bacteria, toxins, heavy metals, and pollutants, to facilitate the oxygen exchange in blood and to counter-balance acids and restore healthy pH levels (the measure of acidity and alkalinity) in the body.

Blood

An added benefit of green barley leaf proteins is that they are polypeptides (small proteins that can be directly absorbed by the blood), where they promote cell metabolism and neutralize substances that are bad for health.

The green pigment 'chlorophyll' is a protein found in most plants. Its molecular structure is similar to human red blood cell hemoglobin. So why don't we have green blood? The critical difference is the substitution of a magnesium molecule (in chlorophyll) in place of the iron (found in the

	heme group making up human hemoglobin). Chlorophyll in the blood has the same effect as iron, making it a natural blood builder and cleanser. This strengthens and may temporarily thicken the blood. As the body adjusts to the nutrients and cleanses the body of toxins and wastes, the blood ultimately thins to its natural level.
Cancer	According to Allan L. Goldstein, Ph.D., head of the biochemistry department at George Washington University's School of Medicine and Health Sciences in Washington, D.C., alpha-tocopherol succinate (a component of barley grass) seems to inhibit several types of cancer, including leukemia, brain tumors, and prostate cancer.
Cholesterol	Young barley grass and the juice powder helps reduces cholesterol.
Cleansing	Chlorophyll progressively cleans the blood, cells, tissues and organs while providing nutrients for new cell life. It absorbs energy from the sun and has been called 'liquid sunshine.' In high enough amounts, chlorophyll is able to affect every cell and organ of the body (inside and out). Barley grass is a great cleanser. It detoxifies cells, normalizes metabolism and neutralizes heavy metals such as lead and mercury.
Digestion	Barley grass and barley juice powder have been shown to be an anti-inflammatory agent, helping to heal stomach, duodenal ulcers and inflamed hemorrhoids.
Infections and Immune System	Barley grass boosts the immune system and reduces pancreas infections.
pH Balance	Barley grass contains buffer minerals: sodium, potassium, calcium, and magnesium, which help alkalinize the body and promote an ideal pH balance. Most processed foods (including red meat and coffee) are acidic. When we consume too many of them, the acidity/alkaline balance is upset.
Skin and Tissues	Barley grass promotes natural tissue repair and nourishes anti-aging mechanisms of the body. Chlorophyll accelerates the healing of damaged tissues by providing nutrients to the cells, increasing cell activity and growth, and cleansing out dead cell matter and wastes. It also stimulates wound healing on the skin and in the bowels while destroying toxins and disease-causing bacteria.

	In Japan, where barley grass extract is popular, it is reported to help the body heal from many illnesses. In one informal study, a Japanese dermatologist observed a group of seven patients with skin diseases ranging from melanosis (darkening of the skin) to eczema. The patients who took barley grass extract healed faster than those who did not take the extract. The patients taking barley grass extract also noticed improvements in appetite and bowel regularity. Antioxidants found in barley grass have been isolated and reported to have antioxidant activity equal or superior to that of Vitamin E. Research has further shown that when barley grass juice is added to injured cells, their DNA (deoxy-ribonucleic acid – contains the genetic instructions for the development and function of living organisms) is rapidly repaired. This may contribute to preventing the changes that often lead to cancer and rapid aging.
Herb Parts Used	The whole grain cereal is considered a food, providing substantial health benefits, nutrients and sustenance to the body. The young leaves and young grass made into powder are used for herbal supplementation.
Barley Grains	**Preparations and Remedies** Barley grain can be found in the market in various forms, including the following: *Hulled barley:* The outermost hull is removed. It is considered to be the whole-grain form of barley and is sometimes called dehulled or hulless barley. *Pearl (or pearled) barley:* The grain is steam processed to remove the bran, then polished or 'pearled' to varying degrees. The total procedure takes off the outermost hull, the bran layer and some of the inner layers. Most nutrients are in the outer bran layer. The amount of polishing determines the amount of nutrients lost in the end product. Pearl barley should always be washed before being boiled, as it is apt to accumulate dust. *Pot (or scotch) barley:* The grain is only slightly polished to remove the hull, leaving most of the grain intact. In many countries, pot barley is popular in soups, giving it its name.

Barley flakes:
Flattened and sliced, flakes are similar in shape to rolled oats. Flakes can be made from hulled or pearl barley and varies in nutrient content for this reason.

Barley grits:
Barley that has been toasted and cracked. Grits are similar in appearance to bulgar. Barley grits can be made from hulled or pearl barley and varies in nutrient content for this reason.

Storage

Grain barley may be stored in tightly covered glass containers in a cool, dry place. Barley may also be stored in the refrigerator during periods of warmer weather.

Preparation Tips

Mix barley flour with wheat flour to make breads and muffins. Use cracked barley or barley flakes to make hot cereal.

Like all grains, rinse thoroughly before cooking barley, removing any dirt or debris that you may find. Add 1 part barley to 3-1/2 parts boiling water or broth. After the liquid has returned to a boil, turn down the heat, cover and simmer. Pearled barley should be simmered for about 1 hour, while hulled barley should be cooked for about 90 minutes.

Combine cooked barley and healthy sautéed mushrooms for a pilaf. Toss chilled, cooked, hulled barley with chopped vegetables and dressing to make a tasty cold salad. Add barley to your favorite stews and soups to give them extra heartiness and flavor.

Poultices

A poultice made of barley meal or flour boiled in vinegar and honey, eases inflammations where applied and has been used for swellings, leprosy, gout and itching skin.

Decoction and Gruel

Barley Water (Decoction) and Gruel:
Barley prepared in the form of a watery decoction, affords a mucilaginous drink much employed from the time of Hippocrates to the present. Pearl barley is preferred for the preparation of the decoction. It may be used for infants and convalescents, as it prevents large milk curd formation.

Pour four pints of boiling water over two ounces pearl barley. Boil away to two pints and strain. Use the infused liquid as barley water or mash the cooked barley for a nutritious gruel.

	Keep the gruel closer to its liquid state for weaker stomachs (prone to vomiting), gradually adding more substance (cooked barley) as can be tolerated. *Optional:* Lemon juice or raisins may be added to gruel for the last ten minutes of cooking time, to suit taste.
Barley Grass	*Vitamin and Nutrient Supplement:* Barley grass is generally cut, dried and powered by evaporation at low temperatures (to protect the vital and sensitive nutrients found in barley grass) and used as a green drink powder in juice or water, or put into preparations or capsules for tasteless ingestion. *Eye Poultice*: Saturate white bread with the juice of freshly cut barley grass. Gently squeeze excess liquid from the bread and apply to the eyes while relaxing. This poultice will help clear eyes and relieve eye pain.
Barley Grass Juice Powder	Barley grass juice powder is made by separating the juice in the barley grass from the grass solids by rapid freeze-drying in an oxygen-free environment. This evaporates the water from the juice, leaving barley grass juice powder. The process of freeze-drying concentrates and preserves the food elements which are in the whole barley grass.
Safety	There are no known adverse side effects attributed to barley or barley grass. Taking barley juice greens may temporarily alter blood thickness as the body adjusts to available nutrients and blood cleansing actions. Dosage requirements for individuals taking blood thinning medications may be affected. Contact your health care professional to correctly monitor blood thickness and adjust medications if needed.
Plant Profile	*Natural Habitat:* Barley originated and was cultivated for thousands of years in Ethiopia and Southeast Asia. It is now grown worldwide. Barley is a highly adaptable crop. It is currently popular in temperate areas as a summer crop and in tropical areas as a winter crop. Its germination time is anywhere from one to three days. Barley has a short growing season and is relatively drought tolerant. Barley can withstand more soil salinity than wheat, which might explain the increase of barley cultivation in

Mesopotamia from the 2nd millennium BC onwards. Barley grows well in cool conditions but is not particularly winter hardy.

Description

Barley is a cereal grain harvested from the annual (must be replanted yearly) grass Hordeum vulgare. The plant grows two to four feet high before harvesting. It has a long hollow stalk which bears an ear of grain at maturity. Each barley seed is enclosed in a strong hull which remains intact even during threshing. Barley is an important feed grain in many areas of the world.

Barley grass is the seedling of the barley plant. The young leaves are usually harvested about 200 days after germination, when the shoots are less than a foot tall. They have a tremendous ability to absorb nutrients from the soil and contain many vitamins, minerals, proteins, chlorophyll and other nutrients that make it a valuable herb supplement.