



GENESTRA
BRANDS®

Bilberry

Herbal Formula

Natural source of anthocyanosides

- Provides antioxidants that help protect against oxidative damage caused by free radicals
- Traditionally used in Herbal Medicine as an astringent and to help relieve diarrhoea
- Convenient capsule format
- **Improved**
 - Increased amount of bilberry per capsule – now provides 480 mg of bilberry fruit extract per day

Bilberry is one of the richest naturally occurring sources of anthocyanosides, which are derivatives of anthocyanins.^{1,2} Anthocyanosides are the primary bioactive compounds in bilberries and are responsible for their characteristic bluish-black colour.¹ Research has found that bilberries contain higher anthocyanoside levels than other berries, such as strawberries, cranberries and raspberries.¹ *In vitro* research has demonstrated that bilberry is able to decrease oxidative damage in cells, including light-induced oxidative damage in retinal photoreceptors.³ Bilberry is also used in Herbal Medicine as an astringent and to help relieve diarrhoea.



EACH CAPSULE CONTAINS:

Bilberry (*Vaccinium myrtillus*) Fruit Extract (80-100:1) 160 mg
12.8-16 g Dried Equivalent

Non-Medicinal Ingredients: Hypromellose, cellulose, ascorbyl palmitate

Recommended Adult Dose: Take one capsule three times daily or as recommended by your healthcare practitioner.

Product Size: 60 Vegetable Capsules **Product Code:** 07499A

NPN 80079560



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Scientific Rationale:

Bilberry is a plant native to northern Europe and Asia that is similar to blueberry.¹ It has been used in medicine since the 12th century and is rich in anthocyanosides (bioactive compounds similar to anthocyanins).^{1,2} Anthocyanosides exert potent antioxidant effects and are responsible for bilberry's characteristic bluish-black colour.¹ Research has shown that bilberry contains the highest anthocyanin level among small black fruits, including blueberry, blackberry, chokeberry and elderberry, and has greater levels of anthocyanoside than other berries as well, including strawberries, cranberries and raspberries.^{1,3}

Antioxidant

Oxygen is required for energy production in the mitochondria; however, the production of ATP can result in the formation of free radicals.⁴ As they are highly reactive, excess generation of free radicals can impair the function of cellular lipids, proteins and DNA.⁴ Antioxidants help maintain redox balance and protect cells against oxidative damage.⁴ They can be divided into two categories: endogenous (including chain-breaking antioxidants, antioxidant enzymes and metal binding proteins) and exogenous (critical supplements primarily obtained through dietary sources).⁴

Research has determined that dietary anthocyanins can directly and indirectly enhance antioxidant defence.⁴ Anthocyanins directly scavenge free radicals and chelate metal ions.⁴ Many anthocyanins also decrease the oxidation and peroxidation of LDL, and have antioxidant activities that are comparable to other important antioxidants, including α -tocopherol, catechin and quercetin.⁴ Anthocyanins also indirectly stimulate the actions of antioxidant enzymes and control mediators of redox signaling, such as glutathione peroxidase, superoxide dismutase, Nrf2 and NF κ B.⁴

Astringent and Diarrhoea

Bilberry is used in Herbal Medicine as an astringent and to help relieve diarrhoea. Acute diarrhoea has a sudden onset and usually lasts no more than two weeks.⁵ It is typically caused by a pathogen, although certain medication and alterations in cytokine balance can also lead to its symptoms.⁵ Diarrhoea is characterized by increased secretion or decreased absorption of ions and water.⁶ This may result from alterations in tight junctions (which mediate permeability between cells) or a loss in the absorptive surface of intestinal cells.⁶

Research has shown that bilberry has bacteriostatic effects, immobilizing viable bacteria cells and preventing their reproduction.⁷ Bilberry also contains tannins, which are astringent plant polyphenols.⁸ Astringent compounds may bind the small intestine lining and form a protective membrane around mucosa.^{5,8} Tannins and other plant bioactives also increase the reabsorption of electrolytes and water in the colon to decrease the occurrence of diarrhoea.⁵

Animal research has shown that bilberry decreases the secretion of pro-inflammatory cytokines, including IFN- γ and TNF, and promotes proper intestinal epithelial cell structure.⁹ Similarly, a clinical trial found that bilberry supplementation decreased the fecal levels of calprotectin (a protein released by activated immune cells), which was associated with improved cytokine balance in the intestine.^{10,11} And according to the results of a questionnaire, bilberry supplementation significantly improved bowel movement consistency, abdominal comfort and general well-being in over 80% of participants.¹⁰

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