Bilberry (*Vaccinium mytillus*)

Common Indications:

- Ischemic reperfusion
- Ulcerative Colitis
- Diarrhea
- Anti-inflammatory
- Hemorrhoids, varicose veins, venous insufficiency
- Eye disorders
- Hypercholesterolemia

General Comments:

Bilberry contains polyphenols such as anthocyanosides, methyl salicylate, farnesol, vanillin, vitamin C, chromium, and a host of other nutrients that help play a role in its pharmacological activity. During World War II when British air pilots ate bilberries, they reported an improved ability to adjust to glare and an increase in their visual acuity and nighttime vision. Bilberry extracts show promise as an antioxidant in the areas of diabetic retinopathy, macular degeneration, cataracts, glaucoma, and varicose veins.

Benefits & Mechanism of Action:

Antioxidant

Anthocyanosides are the main phenolic constituents in bilberry and have well-established antioxidant activity. [1-3] Anthocyanosides have exhibited direct superoxide radical scavenging properties, indirect antioxidant activity by amplifying endogenous antioxidant systems and cytoprotective activity against oxidative damage in animal models. [4]

Ischemic reperfusion injury

Bilberry anthocyanosides have been shown to improve ischaemic damage, preserve capillary perfusion, inhibit increased permeability of reperfusion and save arteriolar tone in an animal model of ischemic reperfusion injury. [5,6]

Anti-inflammatory

Biochemical and histochemical data show that the anthocyanins in bilberry decrease vascular permeability and alter capillary wall dynamics. This is mainly due to an increase in the endothelial

barrier effect as a result of stabilizing membrane phospholipids and increasing the synthesis of the mucopolysaccharides in the connective ground substance, thereby restoring the altered pericapillary sheath. [7] Nilberry and anthocyanins reduced inflammatory cytokines and decreased histological severity in experimental colitis in mice. [8]

Hemorrhoids, varicose veins, venous insufficiency

The considerable astringent and anti-inflammatory activity of bilberry provides a basis of use in this situation. Several human case series and a single-blind trial reported significant improvements in lower extremity discomfort; however further research still needs to be conducted to confirm results. [9]

Ophthalmic conditions

Bilberry preparations have been used to improve poor night vision, light adaptation and photophobia, myopia, and to prevent or retard diabetic retinopathy, macular degeneration and cataracts. Primarily the collagen-enhancing and antioxidant activities of bilberry provide a theoretical basis for these indications.

Hypercholesterolemia

Treatment with a purified anthocyanin supplement 160mg twice daily produced a significant increase in high-density lipoprotein and decrease in low-density lipoprotein in a randomized, doubling-blind, placebo-controlled study. [10]

Dose:

• 60-480mg daily of a standardized extract *Dosed to content of anthocyanosides*
*Note: There are various products with different dosages and standardizations to choose from. When choosing a dietary supplement, select those from reputable manufacturers.

Standardization:

• Bilberry products should be standardized to contain 25% anthocyanosides, calculated as anthocyanins. [11-13]

Cautions & Side Effects:

- Bilberry has been reported to be safe in recommended doses.
- Bilberry should not be used if there is an allergy to any component of this dietary supplement.

Drug Interactions:

- Anticoagulant and Antiplatelet Drugs
    - May increase bleeding risk, inadequate clinical evidence however
- Iron
    - Reduced absorption if taken at the same time as bilberry
- Hypoglycemic Agents

    - Additive effects
- Topoisomerase chemotherapy drugs
    - Bilberry may reduce effectiveness of this cancer drug class; however theoretical

References:

Antioxidant

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Ischaemic reperfusion injury

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Anti-inflammatory

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Hemorrhoids, varicose veins, venous insufficiency

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Hypercholesterolemia

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Standardization

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