Hippophae Rhamnoides

TAXONOMIC CLASSIFICATION:[1]

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Rhamnales

Family: Elaeagnaceae

Genus: Hippophae

Species: Hippophae rhamnoides

INTRODUCTION:[2]

The seabuckthorn are deciduous shrubs that typically range from 0.5 to 6 m in height with equivalent spread, but may reach up to 18 m in central Asia. The staminate trees are more erect than the spreading pistillate trees. It naturally tends to sucker forming thickets if not properly maintained. They can survive temperatures as low as - 40°C, and are both drought and salt tolerant. Sea buckthorns require full sunlight for good growth and cannot tolerate shady conditions near larger trees. The branches are dense, stiff, and very thorny with both terminal and axillary twig spines. The linear or lanceolate shaped leaves, which are 3 to 8 cm long and less than 7 mm wide, are dark grey-green on the upper surface and a distinct pale, silvery-grey on the lower surface. Sea buckthorn is dioecious, with separate male and female plants. Flowers emerge prior to the leaves, are localized to the 2nd year-old wood, and occur in small racemes in the leaf axils along the entire length of the branch. Pollination of the female flowers occurs in mid-May, and is entirely dependent on wind to spread pollen from the male flowers. Fruit ripening occurs about 100 days after pollination. Sea buckthorn fruit can vary in both shape and colour, but are typically globose to egg-shaped berries ranging from yellow to bright orange in colour. The combination of fruit shape and size, together with the contrast between the colour of the fruit and leaves, contributes to the ornamental value of this plant.

PROPERTIES AND USES:[3]

- Antidiabetic effects
- Antioxidant effects
- Anticancer activity
- Gastroprotective activity

DOSAGE: [4]

The appropriate dose of sea buckthorn depends on several factors such as the user's age, health, and several other conditions.

SIDE EFFECTS OF EXCESS CONSUMPTION:[5]

Very few side effects from sea buckthorn have been reported. In some people who had high blood pressure, swelling, headache, dizziness and palpitations were noted. When used on the skin to treat burns, it sometimes caused a rash. Sea buckthorn can act as a blood thinner, causing bleeding. It may also cause low blood sugar in people with diabetes who take medication to lower blood sugar.

RESEARCH:

1. This study was designed to determine the anti-oxidant and immunomodulatory properties of seabuckthorn (Hippophae rhamnoides) using lymphocytes as a model system. Chromium(VI) as potassium dichromate was used to induce oxidative damage. The production of free radicals by chromium and the ability of alcoholic leaf and fruit extracts of seabuckthorn to inhibit the oxidative damage induced by chromium was investigated. Addition of chromium (10 g/ml) to the cells resulted in enhanced cytotoxicity, apoptosis, free radical production and decreased glutathione (reduced) levels. Chromium also caused a significant inhibition of lymphocyte proliferation induced by both lipopolysaccharide and concanavalin A. Alcoholic extracts of leaves and fruits of seabuckthorn at a concentration of 500 g/ml were found to inhibit chromium-induced free radical production, apoptosis, DNA fragmentation and restored the anti-oxidant status to that of control cells. In addition, these extracts also were able to arrest the chromium-induced inhibition of lymphocyte proliferation. These observations suggest that the alcoholic extracts of leaves and fruits of seabuckthorn have marked cytoprotective properties, which could be attributed to the anti-oxidant activity.[6]

2. Effects of the phenolic fraction from *Hippophae rhamnoides* fruits on the production of thiobarbituric acid reactive substances (TBARS, a marker of lipid peroxidation) and the generation of superoxide anion () in human blood platelets (resting platelets and platelets stimulated by a strong physiological agonist, thrombin) were studied *in vitro*. We also examined antioxidant properties of this fraction against human plasma lipid peroxidation and protein carbonylation induced by a strong biological oxidant, hydrogen peroxide (H_2O_2) or H_2O_2/Fe (a donor of hydroxyl radicals). The tested fraction of *H. rhamnoides* (0.5– 50 μg/mL; the incubation time: 15 and 60 min) inhibited lipid peroxidation induced by H_2O_2 or H_2O_2/Fe. The *H. rhamnoides* phenolic fraction inhibited not only plasma lipid peroxidation, but also plasma protein carbonylation stimulated by H_2O_2 or H_2O_2/Fe. Moreover, the level of in platelets significantly decreased. In comparative experiments, the *H. rhamnoides* fraction was a more effective antioxidant than aronia extract or grape seed extract (at the highest tested concentration, 50 μg/mL). The obtained results suggest that *H. rhamnoides* fruits may be a new, promising source of natural compounds with antioxidant and antiplatelet activity beneficial not only for healthy people, but also for those with oxidative stress-associated diseases.[7]

SPECIAL PRECAUTIONS & WARNINGS:[4]

Pregnancy and breast-feeding: There isn't enough reliable information to know if sea buckthorn is safe to use when pregnant or breast-feeding. Stay on the safe side and avoid use.

Children: Sea buckthorn is **POSSIBLY SAFE** when used orally for up to 6 weeks in children 1-7 years of age.

Bleeding disorder: Sea buckthorn might slow blood clotting when taken as a medicine. There is some concern that it might increase the risk of bruising and bleeding in people with bleeding disorders.

Low blood pressure: Sea buckthorn might lower blood pressure when taken as a medicine. In theory, taking sea buckthorn might make blood pressure become too low in people with low blood pressure.

Surgery: Sea buckthorn might slow blood clotting when taken as a medicine. There is some concern that it might cause extra bleeding during and after surgery. Stop using sea buckthorn at least 2 weeks before a scheduled surgery.

INTERACTION WITH MEDICATIONS:[4]

Medications that slow blood clotting (Anticoagulant / Antiplatelet drugs) interacts with SEA BUCKTHORN: Sea buckthorn might slow blood clotting. Taking sea buckthorn along with medications that also slow clotting might increase the chances of bruising and bleeding.

REFERENCES:

1. https://plants.usda.gov/home/classification/87002
2. http://www.omafra.gov.on.ca/english/crops/facts/seabuckthorn.htm
3. http://www.foodandnutritionjournal.org/volume3number2/hippophae-rhamnoides-safety-and-nutrition/
4. https://www.webmd.com/vitamins/ai/ingredientmono-765/sea-buckthorn
5. https://www.webmd.com/vitamins-and-supplements/sea-buckthorn-uses-and-risks#:~:text=Very%20few%20side%20effects%20from,Risks.
6. Anti-oxidant and immunomodulatory properties of seabuckthorn (Hippophae rhamnoides)—an in vitro study S. Geetha a , M. Sai Ram a , V. Singh b , G. Ilavazhagan a , R.C. Sawhney a,* a Defence Institute of Physiology and Allied Sciences, Lucknow Road, Timarpur, Delhi 110054, India b H.P. Agriculture Uniersity, Palampur, Himachal Pradesh, India
7. https://www.hindawi.com/journals/omcl/2016/4692486/