mediators. It is also established that antioxidant-rich sea buckthorn juice reduces the risk factor for coronary heart diseases in humans. No harmful effects of flavonoids were observed in renal or hepatic function. Sea buckthorn is traditionally used in the treatment of gastric ulcer and laboratory studies to confirm the efficacy of the seed oil for this application (Xing et al. 2002). Its function may be to normalize output of gastric acid and reduce inflammation by controlling pro-inflammatory mediators. Clinical trials have also shown that sea buckthorn extracts helped normalize liver enzymes, serum bile acids and immune system markers involved in liver inflammation and degeneration (Gao et al. 2003).

Sea buckthorn oil is also used as for the treatment of oral mucositis, vaginal mucositis, cervical erosion, duodenal ulcers, gastric cancers and skin ulcers (Li 1999). Bioactive oil obtained from young branches and leaves has been incorporated into an ointment for treating a wide variety of skin damage, including burns, bedsores, eczema and radiation injuries. In 1986, many of the Chernobyl nuclear disaster victims were treated with sea buckthorn oil. The oil absorbs ultraviolet light and promotes healthy skin. This unique property of sea buckthorn oil is being recognized and sought after by the cosmetic industry. This property has the potential to protect the skin in the event of nuclear warfare. It is thought that high level of tocopherol in sea buckthorn oil minimizes lipid oxidation, maintaining tissue integrity and reduces skin toughening and wrinkling.

The seed oil of sea buckthorn is characterized by high level of unsaturated linoleic and linolenic acids. These essential fatty-acids are claimed to relieve chronic eczema, cure dermatitis and maintain healthy skin. Flavonoids extracted from the fruits are used especially in the treatment of cardiovascular problems. Laboratory studies also demonstrated that sea buckthorn oil is effective in cancer therapy (Xu 1994). Investigations have also revealed many beneficial effects of tocotrienols present in sea buckthorn fruit and seed oil on human and animals, among which the hypocholesterolemic, antitumor and skin-protecting effects (Kato et al. 1985).

Radioprotection studies at the Institute of Nuclear Medicine and Allied Sciences (INMAS, Delhi) use an herbal preparation of sea buckthorn, RH-3, against whole-body lethal irradiation in mice, which has shown that a dose of 30 mg/kg body weight of RH-3 rendered 82% survival when compared to non-survival in irradiated control. The RH-3 inhibits the Fenton reaction and radiation-mediated regeneration of hydroxyl radicals *in vitro*, superoxide anion mediated Nitroblue tetrazolium reduction and $FeSO_4$ mediated lipid peroxidation in the liver (Goel et al. 2002). Possible contributions towards radioprotective efficiency of RH-3 is the maintenance of chromatin organization, induction of hypoxia, hydrogen atom donation, free radical scavenging and the blocking of cell at G2-M phase by interfering with topoisomerase I activity (Goel et al. 2003). The RH-3 administration protects spermatogenesis by enhancing the spermatogonial proliferation, enhancing the stem cell survival and reducing sperm abnormalities (Goel et al. 2006). It is also found to reduce chromatin compaction and significantly inhibit radiation-induced DNA break. Polyphenol/flavonoids present in sea buckthorn might be responsible for mitochondrial and genomic DNA protection from radiation-induced damage (Shukla et al. 2006).

Sea buckthorn has been studied extensively for its antioxidant properties. The leaf extract of sea buckthorn has been evaluated on chromium-induced oxidative stress.