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Historical and Contemporary Uses of Sea Buckthorn, *Hippophae rhamnoides* L., in the Nordic Countries

ABSTRACT Human interest in certain plants can vary considerably over time. At the end of the twentieth century, the orange-yellow fruits of sea buckthorn, *Hippophae rhamnoides* Linnaeus, became a trendy addition to the diet in some Nordic countries, especially in Sweden and Finland. The soft and juicy fruits are very rich in vitamin B12, C and E, and this fact has greatly contributed to its popularity among contemporary health-conscious consumers. As a cultivated plant, it is nowadays suitable also for a colder climate, and yields an abundant harvest.

In pre-industrial times, the sour-tasting sea buckthorn berries were rarely harvested, although some examples are known from older sources. In 1732, Carl Linnaeus recorded that the berries were used to make a kind of simple sauce served with fish along the Swedish coast of the Gulf of Bothnia. In the nineteenth century, increasing availability of sugar made it possible to consume and preserve the berries on a larger scale, and today they are used in confectionery, cordial, ice-cream, jam, juice, marmalade, mash, parfaits, smoothies, sweets, beer, yogurt products and hygiene products (shampoo and soap).

This article discusses how a rather unknown wild shrub, mostly unnoticed in peasant folk botany along the northern European coasts, has become common as a cultivated plant. Sea buckthorn is a classic example of how the interest in a particular plant and its edible parts varies over time due to economic, cultural and social changes. Ethnobiologist must study not only the human-plant relationships (folk knowledge and utilisation) in the specific socio-cultural context, but also answer questions about how a plant was utilised and viewed, when, where and by whom, as well as why.

KEYWORDS: berries, folk medicine, historical ethnobiology, ornamental plants, traditional wild food

Introduction

Sea buckthorn, *Hippophae rhamnoides* Linnaeus (fam. Elaegnaceae), is today a popular berry not only in Nordic countries such as Sweden and Finland, but also in Russia, the Baltic states, Germany and other countries, in Central and East Asia, as well as in North America. Sea buckthorn has, according to some researchers, "gained the status of one of the most sought-after plant in the pharmaceutical and cosmetic based industries, besides health food processing industries the world over" (Suryakumar & Gupta 2011). It is a versatile plant which today is vastly used in the food industry, for medical purposes, and in the cosmetic industry (Bal *et al*. 2011). Sea buckthorn also has some regional significance: in western Finland and the Åland Islands, sweet dishes made from the berries are nowadays considered regional specialities. The shrub itself is a provincial plant of Satakunta, located on the western coast of Finland (cf. Enkola 1940).

Today, sea buckthorn is a widely spread garden plant, and most berries used for consumption are harvested from cultivated plants. Picking berries from the wild shrub has become a rare hobby. Prior to sugar becoming a common and inexpensive product in the nineteenth century, the sour-tasting fruits of the wild plant were hardly ever used. Another probable reason why the berries were overlooked is that the wild shrub has sharp thorns, which makes harvesting difficult. This undemanding and hardy shrub is today suitable for cultivation also in a colder climate. It is commonly used as an ornamental element in gardens because of its decorative foliage and colourful berries. Furthermore, it is considered to possess great potential in modern landscaping (Svanberg 2013: 940).

One of the earliest records mentioning sea buckthorn use in Sweden is found in Carl Linnaeus' *Flora lapponica* (1737: 296). Linnaeus reported that fishermen along the coasts of the Gulf of Bothnia used the astringent berries of sea buckthorn for preparing a tasty but simple sauce, which was consumed with fish. He had the opportunity to observe the thorny shrub in Österbotten (Ostrobothnia) and the Åland Islands during his journey to the north of Sweden, Lapland, and the eastern province of Finland, in the summer of 1732. He also recorded a couple of local folk names, *finnbär* 'Finn berry' and *surbär* 'sour berry' near the town of Vasa in Österbotten (Linnaeus 2003: 188).

This observation is one of very few older notes showing traditional utilisation of the berries. In general, the berries were left untouched by both humans and animals. According to observations from the Åland Islands, dating to the beginning of the twentieth century, only crows ate the berries in late autumn, although the islanders observed that small birds also sometimes picked at the berries (Palmgren 1913). Also globally, the berries were hardly noted in any folk botany, and it is not until recently, from the end of the twentieth century, that sea buckthorn products have become more widely spread for commercial purposes and made available to consumers.

This article discusses how a little known and rarely used shrub and its berries, chiefly unnoticed in traditional folk botany, has become a popular health product which is much in demand among innovative chefs, especially those influenced by the concept of the New Nordic Cuisine movement (Nordic Council of Ministers 2008). Various botanical, ethnographic, gastronomical and topographical sources are used for this study, which connects with our earlier publications and expands our long-term historical ethnobiological work on traditional plant use (e.g., Ståhlberg & Svanberg 2010; Ståhlberg & Svanberg 2011; Łuczaj *et al*. 2012; Svanberg 2012; Svanberg & Ståhlberg 2021). All translations of quotations in Nordic languages are by the authors of this article.

Fig. 1. Sea buckthorn plant with fruits at Harnäs, Gästrikland, Sweden. Photo: Ingvar Svanberg, 2008.

Botany and Ecology

Sea buckthorn is a thorny, silver-leaved deciduous shrub, usually between one and six metres high. The thorns can grow to a length of up to ten centimetres. It is dioecious, meaning it possesses male and female plants. The male flowers are located in short spikes near the base of the branches, while the female flowers are single. In the autumn, the bush carries yellow or reddish orange fleshy berries densely attached to the shoots (Jeppsson 1999; Svanberg 2013: 937).

The wild shrub is found in coastal areas in northern Europe, the Baltic Sea region and the British Isles, and above the tree line in mountainous areas of central Europe, Russia, Central Asia and China (Hultén & Fries 1986). The shrub is very weak in territorial competition with other plants. It is only found on meagre, pebbly, sandy, or shingle soil in the beach zone, while higher up it is replaced by other bushes and trees (Svanberg 2013: 938). In the Nordic countries, it is distributed on both sides of the Baltic Sea coast from the Uppland and Gästrikland provinces in Sweden, and is found only sparsely northwards; in Finland it grows along the coast of the Gulf of Bothnia, from Åland and Uusikaupunki (Nystad) to Tornio (Torneå) in the north. It can also be found as a coastal dune shrub in Denmark and around the Trondheim Fjord in mid-Norway (Hultén & Fries 1986).

Local Names

Sea buckthorn is currently known as *havtorn* (*hav* 'sea' and *torn* 'thorn') in Sweden, the Åland Islands, and the Swedish-speaking parts of Finland. The name was first recorded in 1745 as *hafstorn* in Roslagen, the coastal area of the province of Uppland in Sweden (Linnaeus 1745: 296; Thedenius 1871: 469). Among Swedish speakers in Österbotten, Finland,

it was earlier known as *hafstörne*. Similar names are recorded in the late nineteenth and early twentieth century in the Åland and Åboland archipelagos in Finland (Olsson 1896; Liro 1915: 21; SLS: FMK 39, FMK 81). The Swedish name can be compared with the local German phytonyms *Seedorn* 'sea thorn' and *Meerkreutzdorn* 'sea cross thorn' (Marzell 1972: 874).

A historical name is *finnbär* 'Finn berry', recorded for the first time in 1729 on both the Finnish and Swedish sides of the Gulf of Bothnia (Artedi [1729] 1985). This name was still in use in the twentieth century and has been explained by the fact that the Finns gathered and ate the berry, or possibly that it came to Sweden from Finland (Linnaeus 1737: 296; Fries 1880: 38; Grapengiesser 1936: 37; Ahlbäck 1992: 52; ILF: ULMA 19 857; Fridner 1999). *Törnbär* 'thorn berry' is a name recorded from Holmön, Västerbotten (Westrobothnia) (ILF: ULMA 29403: 19). On the island of Vätö in the Norrtälje archipelago, the shrub was known as *altornsbuske* (Schagerström 1889: 6).

In Norwegian, the name *tindved* was recorded as early as 1772 (Gunnerus 1772: 11; see also below). Other names are *tørn*, *tørne* 'thorn' and *tistelved* 'thistle wood' (Høeg 1974: 385). In Danish, sea buckthorn has been called *havtorn* at least since the late eighteenth century (the earliest record is from 1767) and in Jutland it is referred to as *sandtidse* 'sand thistle' (first recorded in 1796). Local names such as *klintepil* 'cliff willow' (Møn), and *strandpil* 'beach willow' (Møn, Falster) have also been used until fairly recently in Denmark (Lange 1959: 718; Brøndegaard 1979: 31). The common Finnish name *tyrni* (first recorded in 1850) is probably derived from Swedish *thörne* 'thorn' (Suhonen 1936: 177; Häkkinen 2004). Meänkieli speakers in the northernmost part of Sweden also know the bush as *tyrni* (Erling Wande *in litt*. 2015).

Fig. 2. Sea buckthorn, *Hippophae rhamnoides* (Palmstruch 1809).

Folk Botany and Local Use as Food

Although the sea buckthorn berries have a unique taste, the documentation about their historical utilisation is scarce in the Nordic countries. A dissertation from Åbo Academy in Finland from 1789 mentions, but contains little information about, the traditional economic use of sea buckthorn (Hellenius 1789). Sea buckthorn berries were, however, harvested and used. Linnaeus and Artedi noted during the early eighteenth century that fishermen living along the coast of the Gulf of Bothnia used the astringent crushed berries for a kind of

sauce served with fish dishes (Artedi [1729] 1985; Linnaeus 1737: 297; Linnaeus 1749: 60). Linnaeus' record that the berries were eaten also in the Åland Islands has often been quoted, but this was a lapse of memory, which Fredric Wilhelm Radloff was able to prove already in 1795 (Radloff 1795: 235).

In northern Sweden, coastal inhabitants used to break off whole branches with berries, which they then left to dry below the ceiling. During the winter, they would peel off the berries and make a custard of them, a habit known until the beginning of the twentieth century (Grapengiesser 1922: 315; Ågren 1976). A recipe by Selma Brackander, wife of the lighthouse keeper at Gaddens fyr, Holmöarna, Västerbotten, was recorded in 1911. Her recommendation was that the berries should be consumed as juice, after being cooked in 10 litres of water:

> The berries are so juicy and have such a thin peel that they cannot be picked one by one, one has to use the whole branch. The water is brought to the boil and the branches are dipped in the water until the berries are crushed. The branch is then pulled up to the pot's edge and the berries and juice will drop off by themselves. When the juice is thick enough, it is filtered through a cloth, put into bottles, corked, and the cork is sealed with resin. The juice is mostly and best used for custards. (ILF: ULMA 29403:19)

The berries were also dried and used as a flavour additive on porridge or gruel in northern Finland (Svanberg 2013). They had to be picked after they had frozen in late autumn, otherwise the berries would be too acid and unpleasant to eat. After freezing, the berries were regarded as delicious and eaten also by children. In north-western Jutland in Denmark, peasants used the berries to make gruel (Brøndegaard 1979: 32) and in Norway, according to records from Ørland, children ate the berries as a snack (Furuset 2009).

Fig. 3. Market vendor at Fyris torg, Uppsala, selling products made of wild sea buckthorn berries harvested in Uppland, Sweden. Photo: Börge Pettersson, 2002.

Applied Economic Botany

Carl Linnaeus' notes about sea buckthorn inspired some eighteenth-century economic practitioners to harvest and use the berries. His pupil Pehr Kalm, who wrote extensively on ethnobotany and documented peasant habits, also became enthusiastic about applied economic botany. He harvested sea buckthorn berries one summer in the early 1740s in Grisslehamn, Uppland, in order to "try to squeeze wine [out of them], or some other pleasant drink, or at least vinegar, preferably, as these berries have a cooling and invigorating taste, albeit slightly sour" (Kalm 1745: 252).

This experiment failed, however: the pressed juice fermented and just as Kalm began to hope for something more, the gardener inadvertently broke the juice jar in the cellar. "All my happiness and hopes were crushed," he wrote. Still, he gained some results: the cloth, through which he had filtered the juice, had turned a yellow colour which was impossible to wash out. He had found a new dye plant, and recommended it to the textile industry for development. Kalm believed firmly in the future potential of his project and sea buckthorn, and hoped that others:

> who have the opportunity to stay and live at the coast, where this tree grows abundantly, and where they could easily get [berries and other materials from] it, would continue experimenting, as both berries and bark provide dye, and also try to use it to make wine, vinegar or some other beverage. If one or both of these [experiments] are successful, just think what use one could have from a tree which is abundant in our archipelagos in the most meagre places [soil] and among hard rocks, where other trees and herbs cannot grow or thrive. (Kalm 1745: 253)

No further attempts to transform the berries into wine are documented in older sources. For a successful fermentation, large amounts of sugar are needed.

Modern Developments

When sugar became cheaper and easily available in northern Europe in the nineteenth century, many kinds of berries, which had been too sour for the peasant's taste, suddenly became popular (Svanberg 2012). Sugar entered rapidly into every household (Mintz 1986) and changed both tastes and cooking habits. The evolution of taste and demand for sugar as an essential food ingredient also resulted in a major dietary change. Among the berries which became interesting to harvest were also sea buckthorn. Danish coastal dwellers picked and sold the berries, cooked into jam, in the weekly markets in Copenhagen (Brøndegaard 1979: 32). Harvesting wild sea buckthorn berries has continued in Denmark until today. It appears to have been especially popular in home-flavoured schnapps, although juice and jam were also, and are still being, made (Meyer 2017: 326; Steerup & Kyster 2014: 104).

Fig. 4. Sea buckthorn berries. Photo: Ingvar Svanberg.

Although sugar nicely camouflaged the sour taste, it was still difficult to pick the berries because of the thorns. In Sweden and Finland, sea buckthorn berry

Fig. 5. A sign at a vendor's stall with sea buckthorn products at Helsinki Market Square, Finland. Photo: Osva Olsen, 2008.

picking remained a marginal occupation for the population in Norrbotten (North Bothnia), Västerbotten and Österbotten (Ågren 1976). Older cookbooks contain no recipes containing sea buckthorn, either in Sweden or in Finland. In the Åland Islands, the berries were not sought after until the mid-1900s (Palmgren 1913; Liro 1915; SLS: FMK 39). Yet, a note from Lemland in the 1930s states that the berries were sometimes prepared into a tasty drink accompanying food (SLS: FMK 81). In the 1970s, a survey in Sweden showed that there was a small group of people who picked the berries and prepared juice, custard, soup, jelly, or even home-made wine, but data about their social or commercial dimensions are lacking (Armfelt Hansell 1978: 380–387).

It was not until the 1980s that the alleged positive health effects of sea buckthorn were discovered by a growing health-conscious customer base in some Nordic countries. Despite the difficulties for pickers, harvesting berries from wild bushes in Uppland and Åland began on a larger scale. Sea buckthorn suddenly found a new role as health food (Svanberg 1998; Svanberg 2012; Ingmanson & Holmberg 2002: 60–61). The soft and juicy fruits are very rich in vitamin B12, vitamin C, vitamin E, carotenoids, and a variety of bioflavonoids (Bal et al. 2011). A study of ten Finnish populations showed that the vitamin C concentration varied from 28 to 201 mg/100g of berries among shrubs, and from 60 to 122 mg among the populations (Yao, Tigerstedt & Joy 1992).

Especially along the coasts of Finland, sea buckthorn picking became a profitable business, as interest in the high vitamin and nutritional content of the berries created a strong demand. The sharp thorns, however, cause serious difficulties for harvesters, and in Uppland, Sweden, those who harvest the berries have developed their own tools. Since the 1970s, it has been forbidden in Finland to use tools which damage the bushes. Only picking by hand is allowed, but the law was amended in the autumn of 2005 to also allow certain tools, yet only during specified periods and in some regions. The berries are mostly preserved by drying or freezing (Yao, Tigerstedt & Joy 1992; Svanberg 2013: 939).

Cordial and marmalade have been available in the weekly markets in Uppsala, Sweden, since the early 1990s, but profits remained low and harvests small-scale in the first decade (Svanberg 1998; Ingmanson & Holmberg 2002: 61). Today in north-western Finland and the Åland Islands, dishes containing sea buckthorn berries are considered regional specialities. Innovative chefs develop new dishes, which are served in restaurants as delicacies. Sea buckthorn is nowadays an integrated part of the New Nordic Cuisine movement (Łuczaj *et al.* 2012; Svanberg 2013; Signer 2017). Sea buckthorn berries are made into confectionery, cordial, ice-cream, jam, juice, marmalade, mash, parfaits, smoothies, sweets, yogurt products, and much more (Svanberg 2013). The main Swedish provider of alcoholic drinks, Systembolaget, also offers a beer (Clarys Honungs- och Havtornsöl) flavoured with sea buckthorn berries in its shops.

Other Uses

Although the berries, leaves and roots of sea buckthorn have been used in traditional medicine in several regions in Eurasia, for instance Mongolia, China, Russia, Tajikistan, Tibet and Turkey (Khan, Akhtar & Mahmood 2010; Suryakumar & Gupta 2011), there are few reports of sea buckthorn berries having been used in folk medicine in the Nordic countries. According to Norwegian botanist Johan Ernst Gunnerus (1772: 11), the peasants in Bindal and Nærøy in Norway used a potion made from the bark, leaves and flowers as a diuretic. From Vendsyssel in Denmark, records tell of using the juice on warts (Brøndegaard 1979: 32).

Another use is mentioned by Høeg (1974: 385), who suggested that as the tough, hard wood of sea buckthorn was used to make rake teeth in Trøndelag in Norway, its vernacular name, *tindved*, should be interpreted as 'rake tooth wood'. This interpretation has recently been questioned. Closer examination has revealed only three records of sea buckthorn being used in this way, all limited to the same municipality. Instead, *tind* could be interpreted as 'spike' or 'thorn' (Furuset 2009). The plant was, as Høeg himself also states, never popular among the Norwegian coast dwellers (Høeg 1974: 385).

Twigs and shrubs of sea buckthorn have been gathered as fuel by coastal inhabitants in Jutland (Brøndegaard 1979: 31). There are also historical Danish records of the berries being used for feeding pigs (Lange 1959: 719). In northern Sweden, the bush has been used to produce yellow and brown dye, just as Pehr Kalm recommended in the 1740s. The berries provide a rich yellow colour, and branches and leaves brown and red-brown nuances (Fridner 1999; Kalm 1745; Sandberg & Sisefsky 1981; cf. Brøndegaard 1979: 32).

Sea buckthorn shrubs were planted in gardens for ornamental purposes in the eighteenth century in Denmark. It was also used as a hedge plant in order to keep out cattle, and to create hiding places for pheasants (Brøndegaard 1979: 31). The Danish Code (*Dansk Lov*) from 1683 forbade the destruction of sea buckthorn thickets on the western Jutland coast, as its roots prevented erosion; the shrub has a long history of binding dunes along coastal areas in northern Europe, especially in Denmark (Brøndegaard 1979: 31). In Germany, the shrub has long been planted for ecological rehabilitation of degraded lands and control of soil erosion (Suryakumar & Gupta 2011).

Twigs from the wild bushes have had some ornamental use. In the 1930s, there was a certain demand for branches in the Nordic countries, as they fitted the decoration ideals of functionalism. The breakthrough of functionalist interior design replaced palms and ferns with tight cacti; sea buckthorn twigs were brought into this fashion trend, and demand grew rapidly (Sundstedt 1934). The branches also became common as decorations in shop windows and homes in Denmark and Sweden, and were sold in weekly markets and shops. In Sweden, most twigs were harvested in northern Uppland, and in Denmark

Fig. 6. A cake with a layer of sea buckthorn jam served in a confectionery in Tartu, Estonia. Photo: Ingvar Svanberg, 2019.

in eastern Møn. After 1935, the trend declined and demand fell (Sandberg 1937; Brøndegaard 1979: 32; Persson 1987), but the thorny branches still have some ornamental value.

The regional significance of sea buckthorn is shown by the fact that it was chosen as the provincial flower of the Finnish province Satakunta; it is also important in Åland Island cuisine, as well as in the northern areas of the Gulf of Bothnia. Sea buckthorn is depicted on a Finnish stamp from 1991. The wild plant has become a cultural symbol, although the berries which are consumed usually originate from cultivated specimens (Svanberg 2013).

Cultivated Sea Buckthorn

Wild sea buckthorn berries remain a marginal food product in the Nordic countries today and picking the wild berries is a hobby for a few enthusiasts. However, the unique taste and high content of vitamins have awakened the interest of the food industry. As the berries ripen, the vitamin C content decreases, which means that an early harvest supports the preservation of high concentrations of this vitamin. This has created new developments in cultivation and today most of the berries on the market come from cultivated sea buckthorn bushes.

Sea buckthorn has been cultivated and experimented with in Siberia since the 1930s with a view to producing bigger berries. In the 1980s, the bush became a popular cultivated plant in Sweden and Finland, as well as in many other countries in the northern hemisphere (Bal *et al*. 2011; Svanberg 2013). The bush is easy to cultivate and unpretentious about the soil. During the past few decades, sea buckthorn plants without thorns have reached the Swedish market from Russia via Finland. In particular, the vendors target Norrland in the north of Sweden. Finnish and Swedish authorities have also promoted it as a new crop, a kind of niche product for the future (Svanberg 2013).

Since 1986, experiments have been carried out at Balsgård in Sweden, in particular with the cultivars *Romeo* and *Juliet* of Russian origin; the female cultivar yields bigger harvests. Both are apparently suitable for the Swedish climate, and they are resistant against the plant pathogen (bacterium) *Pseudomonas syringae*. In 1997, 3,000 plants from Russia were brought to Öjebyn in Norrbotten, in the hope that they would provide the region with future income and a plant which is useful for the food industry. The experiment has been a success and it is now extended into a transnational cooperation project in the region of the northern Gulf of Bothnia (Larsson 1997; Svanberg 1998).

Many different cultivars of sea buckthorn exist today for fruit production, but some are also grown for ornamental purposes as garden plants (Jeppsson 1999). Since the 1990s, distinguishing between cultivated and wild berries available on the market has become very difficult. However, the majority of the products are made from cultivated plants. In 2011, sea buckthorn was cultivated on 171 hectares in Finland (Klemettilä & Jaakkola 2011; Svanberg 2013), but in 2020 the 172 companies cultivating sea buckthorn used 95 hectares which yielded a total of 30,000 kg berries. Almost half of these companies were located in Österbotten and along the coast, while three were in the Åland Islands (LUKE 2020).

In contrast, the berries are still, or at least until recently, primarily harvested from wild shrubs in Denmark (Meyer 2017: 326), and some pick the wild berries for household consumption in Finland and Sweden, too. Yet, it was only when cultivated plants became available on the market and abundant enough to yield larger harvests that the interest in sea buckthorn berries as a commercial food ingredient, especially in restaurants and confectioneries, increased and reached its present levels. Successful marketing of its health

benefits, quickly echoed by mass media in the 1990s and 2000s, has had a great impact on the general public's awareness of the merits of sea buckthorn.

Final Remarks

From having been a little known and used plant, sea buckthorn became interesting when the availability and cheaper price of sugar enabled consumption and preservation of its berries in the nineteenth century. Since then it has been on a slow upward trend, which has accelerated since the 1980s, especially in some countries in northern Europe. The products are sold today as the "Nordic super berry" or a "natural vitamin bomb," and restaurants, especially in Sweden and Finland, serve the berries in various forms, from sauces to jams and ice-creams. A wide range of sea buckthorn products is available in shops and supermarkets, not only as food or an alternative medication, but also in the form of cosmetics and hygienic products (shampoo and soap). The bush is also cultivated in Estonia and Latvia, as well as in northern Germany, Russia, North America, and Central and East Asia (Svanberg 2013). However, sea buckthorn berries are still a fairly expensive product and demand seems to have diminished in recent years.

There have been some other uses of sea buckthorn as well, and there is still a demand for sea buckthorn plants as ornamental garden plants in both Europe and North America. The thorny shrub provides protection for small birds, and the yellow berries last all winter. In addition, the shrubs are both cold and drought resistant, and hardy survivors in the cold climate in most of northern Europe (Löwenmo 1962: 166; Svanberg 2013). The shrub is also recommended for hedges (van Elsen & Immel 2001). The question is now what impact climate change, which is already transforming the vegetation also in the Nordic countries, will have on the sea buckthorn and its growth areas.

Human interest in different plants varies over time and the reason is not just economic or successful marketing, but factors such as resilience, edibility and harvesting are also important (Łuczaj *et al*. 2012; Łuczaj & Pieroni 2016; Svanberg 2012). Without sugar and the growing awareness of the health benefits of vitamins, sea buckthorn would probably have remained a forgotten plant of only minor local significance. This overview of the history of sea buckthorn shows that a wild shrub can become so important that cultivation and developing cultivars without thorns to make harvesting easier are seen as necessary. The rise of sea buckthorn also reflects the (r)evolution of taste and the vast and fast-growing public interest in health issues. The journey of the sea buckthorn berries from fishermen's sauce to fine dining in luxurious restaurants also highlights the importance of plant characteristics, such as plant pathogen resistance and modest soil requirements, which are essential for the plant to survive in a region with a harsh climate. This plant has also, probably more than any other, provided opportunities for regional cooperation across national borders in northern Europe, and especially in the area around the Gulf of Bothnia.

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