Food from the gardens in Northern Europe – archaeobotanical and written records dated to the medieval period and early modern times

Voedsel uit noordeuropese tuinen – archeobotanische en geschreven bronnen uit de Middeleeuwen en Vroegmoderne tijd

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Abstract

This article is dedicated to Wim Kuijper, a garden lover and an enthusiastic archaeobotanist. Selected garden plants, including fruits and nuts, all recorded by archaeobotanical finds in the area around the Baltic Sea, and dated to the medieval and early modern time period will be discussed. The focus is on methodological questions of the representativity of these plants within the archaeological context. The question of the origin of specific spices and medicinal plants is raised. When and how did these plants reach the northern countries; are there earlier finds, e.g. from the Viking Age? Does the archaeobotanical dataset reflect a long-term tradition in the cultivation of garden plants?

Samenvatting

Dit artikel wordt opgedragen aan Wim Kuijper, liefhebber van tuinen en enthousiast archeobotanicus. Besproken wordt een aantal tuinplanten, inclusief vrucht- en notenbomen, die tevoorschijn zijn gekomen tijdens opgravingen rond de Oostzee. Zij dateren uit de Middeleeuwen en Vroegmoderne tijd.

Introduction

Seeds and fruits from archaeological excavations tell about the introduction and cultivation of garden plants. These so-called archaeobotanical proxies are the most important source of knowledge of garden plants for the time periods before written sources existed.

In Northern Europe a network of archaeobotanists from seven different countries compiled the botanical results from more than 75 archaeological excavations dated to AD 1250-1800 (Fig. 1, tab. 1). More than 150 species of useful plants from the countries, today known as Northern Germany, Northern Poland, Denmark, Estonia, Sweden, Finland, and Norway, were documented and presented in a monograph (Karg (ed.) 2007). Whenever possible written sources were taken into account and the information compared with the archaeobotanical records.

Country	site type	locality	dating to
Reference			century AD
Northern Germany			
Alsleben 2007	urban	Oldenburg	13 -17
	urban	Bremen	13 -16/18
	urban	Braunschweig	13 -16
	urban	Einbeck	14
	urban	Göttingen	13 -16
	urban	Hann. Münden	16 -18
	urban	Hildesheim	17/18
	urban	Höxter	13/14
	urban	Lüneburg	14 +16/17
	urban	Northeim	16
	urban	Schleswig	13
	urban	Kiel	13 -17
	urban	Lübeck	13 -17
	urban	Mölln	16/17
	urban	Rostock	13/14 +16/17
	urban	Stralsund	13 -18
	urban	Greifswald	13 +14/15
	urban	Pasewalk	13
Northern Poland			
Latałowa et al. 2007	urban	Kolberg	13-15/16
	urban	Danzig	13-18
	urban	Elbing	13-14
Estonia			
Sillasoo & Hiie 2007	urban	Tallinn (Reval)	13-17
	urban, castle	Tartu, Uue-Kastre	13/14-17/18
	urban	Pärnu (Pernau)	13-17
	urban	Viljandi (Fellin)	13-17/18
Finland			
Lempiäinen 2007	urban	Helsinki	15-18
	urban	Hämeenlinna	11-14
	urban	Porvoo	16-17
	urban	Tammisaari	17-19
	urban	Turku	13-19
	castle	Kaarina	14-16
	castle	Turku, Castle	15-18
	castle	Käkisalmi Castle	12-14
	rural	Lahti	15-18
	rural	Lieto	13-14
	rural	Naantali, Mannerheiminkatu	15-17
	rural	Perniö	14-15
	rural	Pori	11-18
	rural	Vesilahti	15-18
	monastery	Naantali, Convent Church	13-16
	monastery	Valamo Island	11-18

Country	site type	locality	dating to
Sweden			
Viklund 2007	urban	Uppsala	13-15
	urban	Sigtuna	10-13
	urban	Stockholm	
	urban	Norrköping	12-17
	urban	Söderköping	
Denmark			
Karg 2007	urban, monastery	Odense	13-17
	urban, church	Roskilde	12-15
	urban	Copenhagen	11-19
	urban	Helsingør	16-18
	urban	Hillerød	16-18
	urban	Holbæk	13-15
	urban	Næstved	12-19
	urban	Sakskøbing	17-18
	urban	Svendborg	13-16
	urban	Ålborg	13-15
	urban	Halmsted	12-18
	urban	Landskrona	15-16
	urban	Lund	12-19
	urban	Trelleborg	14-18
	urban	Visby	12-18
	castle, urban	Horsens	12-16
	castle	Taasinge	17-18
	castle	Tønder	13-16
	ship	Gedesby	13-14
	ship	Kolding	12
	rural	Amager, Tårnby Torv	11-17
	rural	Herstedøster	13-15
	rural	Lolland, Arninge, Hollenæs	12-14
	rural	Mors, Skarreborg	12-13
	rural	Ilstorp	13-14
	rural	Malmö	17-18
	monastery	Ribe	12-15
	monastery	Sorø	13-17
	monastery	Øm	13-16
	monastery	Dalby	12-14
Norway			
Hjelle 2007	urban	Trondheim	13-18
	urban	Bergen	13-18
	urban	Oslo	13-18

Table 1
List of the archaeological sites with botanical finds from Northern Europe (compiled by the author)

Lijst met archeologische vindplaatsen in Noord-Europa

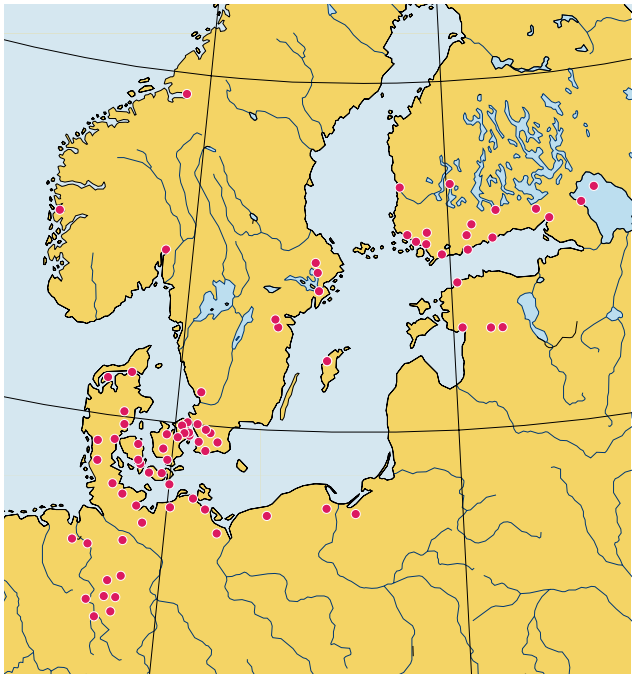

Fig. 1
Map showing the locations with archaeobotanical finds dated to the medieval period and early modern times
Design B. Helle, Bergen University, Norway

Kaart met de plaatsen met archeobotanische vondsten daterend tot de Middeleeuwen en vroegmoderne tijd

Latin name	English Name	Northern Germany	Northern Poland	Estonia	Finland	Sweden	Denmark	Norway
Fruits								
Arctostaphylos uva-ursi	Bearberry			■	■	■		■
Cerasus avium	Sweet Cherry	■	■				■	
Cerasus vulgaris	Sour Cherry	■	■	■				■
Cornus mas	Cornelian Cherry	■						
Crataegus laevigata	Common Hawthorn	■						
Cydonia oblonga	Quince	■	■					
Empetrum nigrum	Black Crowberry	■	■	■	■			■
Ficus carica	Fig	■	■	■	■	■	■	■
Fragaria vesca	Wild Strawberry	■	■	■	■	■	■	■
Malus domestica	Apple	■		■				
Malus sp.	Apple		■	■	■	■	■	■
Malus sylvestris	Wild Apple	■			■		■	
Mespilus germanica	Medlar	■						
Morus alba	White Mulberry		■					
Morus nigra	Black Mulberry	■						

Latin name	English Name	Northern Germany	Northern Poland	Estonia	Finland	Sweden	Denmark	Norway
Morus sp.	Mulberry						■	
Physalis alkekengi	Strawberry Tomato	■						
Prunus domestica	Plum	■	■	■	■		■	■
Prunus insititia	Bullace	■	■	■				
Prunus padus	European Bird Berry							■
Prunus persica	Peach	■	■				■	
Prunus spinosa	Sloe	■	■			■	■	■
Prunus sp.	Sloe/Cherry				■	■	■	
Pyrus communis	Pear	■	■	■				■
Pyrus sp.	Pear		■			■	■	
Ribes nigrum	Black Currant	■	■	■				
Ribes rubrum	Red Currant	■	■	■				
Ribes sp.	Currant			■				
Ribes uva-crispa	Gooseberry	■	■					
Rosa canina	Rose		■					
Rosa sp.	Dog Rose	■	■		■	■		■
Rubus caesius	European Dewberry	■	■	■		■	■	■
Rubus chamaemorus	Cloudberry			■	■	■		■
Rubus fruticosus	Bramble	■	■	■			■	■
Rubus idaeus	Raspberry	■	■	■	■	■	■	■
Rubus saxatilis	Stone Bramble		■	■	■	■	■	■
Rubus sp.	Bramble/Raspberry						■	
Sambucus nigra	Common Elder	■	■				■	
Sorbus aucuparia	Rowan	■	■	■	■	■		■
Sorbus domestica	Service Tree	■						
Sorbus torminalis	Wild Service Tree	■						
Vaccinium myrtillus	Bilberry	■	■	■	■	■	■	
Vaccinium oxycoccus	Cranberry		■	■	■			
Vaccinium sp.	Bilberry/Cranberry			■	■	■	■	■
Vaccinium uliginosum	Bog Bilberry	■	■	■	■			
Vaccinium vitis-idaea	Cowberry	■	■	■	■		■	
Vitis vinifera (incl. subsp. *sylvestris Vitis* sp.)	Grape Wine	■	■	■	■	■	■	■
Nuts								
Castanea sativa	Spanish Chestnut	■						
Corylus avellana	Hazel	■	■	■	■	■	■	■
Juglans regia	Walnut	■	■	■			■	■
Prunus dulcis	Almond	■	■					

Table 2
Fruit and nuts from archaeological sites dated to the medieval period and early modern times (12th -17th century AD) from seven different countries (compiled by the author). Nomenclature after Erhardt et al. 2000

Vruchten en noten van archeologische vindplaatsen gedateerd in de Middeleeuwen en vroegmoderne tijd (12e-17e eeuw AD) uit zeven verschillende landen

Project design

In order to correlate plant records from different archaeological sites with each other, it is important to define the context in which the plants were found, as well as the preservation condition of the layers, samples and plant remains. Can the site be characterised as an urban site or as a rural site? Was the context a latrine or a pit? Was the sample taken in a waterlogged deposit or in a burnt refuse layer? In the HANSA-project we defined categories that were followed by all the authors for their individual sites (Karg 2007a). In this article the selected group of garden plants will be discussed.

Fruits and nuts

A broad spectrum of fruits and nuts is extraordinary for the medieval period and the early modern times in the countries of Northern Europe (Tab. 2). The spectrum ranges from locally cultivated species to wild collected and imported plants. Up to now, no method has been applied to prove if a plant had grown locally or had been imported from abroad. Some of the imported species, such as fig and mulberry, could have been planted in the southern part of Scandinavia. Both plants today produce ripe fruits, as well as ripe seeds (Karg 2007b, p. 148). From written records we know that mulberry trees had been cultivated in Denmark in connection with silkworm experiments during the 16th and 17th century (Brøndegaard 1979). It is interesting that records of fig seeds occur in all the Nordic countries throughout all time periods of the Middle Ages (Karg et al. submitted). Fig was probably not only used as a fruit during periods of fasting (Sillasoo and Hiie 2007, p. 86) but served for other purposes too, such as an ingredient in medicines (Latałowa et al. 2007, p. 60). Other exotics, such as almond were definitely imported. The low number of records of almond nut shell indicates how exclusive those exotics must have been. Wild collected fruits and nuts played an important role in completing the daily diet in all the northern countries (Fig. 3). Berries were imported from the hinterland into the towns, as could be proven for cloudberries in Norway (Hjelle 2007, p. 170), and for bilberries in Denmark (Karg 2007b, p. 148). Other wild collected plants were used for tanning purposes, such as the leaves of bearberry (Viklund 2007, p. 124). Written records inform us about the fact that hazelnuts were treated as equivalent to currency. During the medieval period church tithes were paid in the form of hazelnuts (Karg et al. 2007, p. 188).

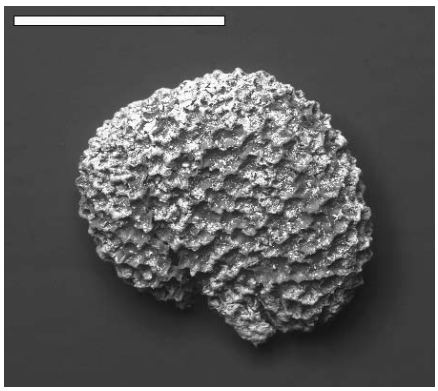

Fig. 2
Henbane seed from the Viking Age site of Fyrkat, Jutland, Denmark SEM-photograph M. Tauber and S. Karg, The National Museum of Denmark bar= 1 mm

Bilzenkruidzaad uit de Vikingnederzetting Fyrkat, Jutland, Denemarken maatstreepje= 1 mm

Herbs and spices

Archaeobotanical remains of herbs and spices are rarely preserved in a charred condition because they usually do not come into contact with fire during preparation methods. The best find circumstances are latrines that were excavated and sampled in only three of the countries. In Northern Germany, Northern Poland and Estonia these features could be studied for plant remains (Alsleben

2007; Latałowa et al. 2007; Sillasoo and Hiie 2007). Table 3 illustrates the diversity of herbs and spices based on the archaeobotanical finds in all seven countries. Written sources must be taken into account to supplement the spectrum. To mention only one very important book, the oldest cookbook of Europe. Originally written in French, this book was translated into Danish around AD 1300. The original manuscript is nowadays kept in the Royal Library in Copenhagen, and an excerpt was published by Veirup (1993). Original recipes prove that spices, such as pepper, nutmeg, cinnamon and ginger, were already known in these early times. The use of spices expresses identity and wealth, and only few persons could afford those luxury goods (Turner 2004). The nobility and royal families must have known about the existence of the cookbook and the existence of the valuable spices. Archaeobotanical investigations of aristocratic and royal deposits should be analysed in future.

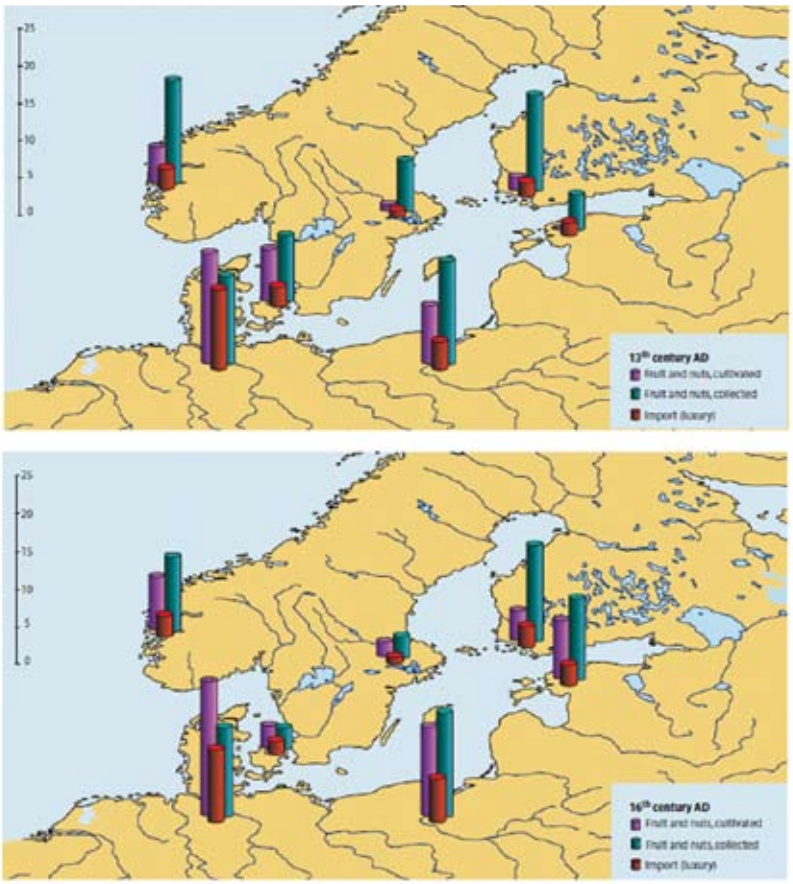

Fig. 3
Map showing the number of archaeobotanical records of cultivated and collected fruits and nuts dated to the 13th and 16th century in Northern Europe. The red column represents a summary of all the imported plant records (herbs, spices, fruits, and nuts)
Design B. Helle and K. Hjelle, Bergen University, Norway

Kaart met het aantal archeobotanische vermeldingen van gecultiveerde en verzamelde vruchten en noten met een datering in de 13e en 16e eeuw in Noord Europa. De rode kolom geeft een overzicht van alle vermeldingen van geïmporteerde planten (kruiden, specerijen, vruchten en noten)

Ordinary people had their own kitchen gardens and went into nature to collect herbs. Many of the aromatic tasting plants cannot even be cultivated because they require specific ecological conditions, such as for example Sweet Gale. This plant grows exclusively under wet conditions in bogs and along the borders of lakes. The leaves and buds are in use since the Viking Age as a beer flavouring (Karg and Günther 2002). Other herbs and spices were definitely already grown in gardens, as we assume of a wide range of vegetables (Karg 2008). Herbal gardens most probably already existed during the Viking Age, as several plant finds suggest. An accumulation of henbane seeds was detected in a woman's grave in a cemetery close to the fortification site of Fyrkat in Jutland, Denmark (Helbæk 1977). The seeds were kept in a small leather pouch that had been fixed to the woman's belt (Pentz et al. 2009). So far, this is the oldest record of henbane in Denmark (Fig. 2). During the medieval period this plant seems to belong to one of the most important medicinal plants in the North according to the frequencies in all the countries (Tab. 3). As henbane is not an indigenous plant to Northern Europe, it must have been cultivated as a garden plant.

Herbs and Spices (incl. Ergot)		Northern Germany	Northern Poland	Estonia	Finland	Sweden	Denmark	Norway
Latin Name	English Name							
Aethusa cynapium	Fool`s Parsley	■	■		■		■	
Aframomum melegueta	Grains of Paradise	■	■					
Anethum graveolens	Dill	■	■	■	■	■	■	
Angelica sylvestris	Wild Angelica		■					
Apium graveolens	Celery	■	■	■		■	■	
Artemisia absinthium	Absinthe	■				■		
Atropa belladonna	Deadly Nightshade	■						
Betonica officinalis	Betony		■					
Brassica nigra	Black Mustard	■	■	■			■	■
Capsicum annuum	Hot Pepper		■					
Carum carvi	Caraway	■	■	■	■	■	■	■
Chelidonium majus	Greater Celandine	■	■		■	■	■	
Claviceps purpurea	Ergot	■			■			
Coriandrum sativum	Coriander	■	■	■			■	■
Elettaria cardamomum	Cardamom	■		■				
Elettaria major	Sri Lanka Cardamom	■						
Filipendula ulmaria	Meadow Sweet					■		
Foeniculum vulgare	Fennel	■	■					■
Humulus lupulus	Hop	■	■	■	■	■	■	■
Hyoscyamus niger	Henbane	■	■		■	■	■	■
Hypericum perforatum	Perforate St John`s Wort		■				■	
Hyssopus officinalis	Hyssop	■	■					
Juniperus communis	Juniper	■	■	■	■		■	■
Laurus nobilis	Laurel						■	
Leonurus cardiaca	Motherwort						■	
Levisticum officinale	Lovage				■			
Myrica gale	Sweet Gale	■	■	■	■	■	■	■

Herbs and Spices (incl. Ergot) Latin Name	English Name	Northern Germany	Northern Poland	Estonia	Finland	Sweden	Denmark	Norway
Myristica fragrans	Nutmeg, Mace		■					
Nepeta cataria	Catmint	■	■				■	
Nigella sativa	Black Cumin	■						
Origanum vulgare	Wild Marjoram	■	■				■	
Petroselinum crispum	Parsley	■	■	■	■	■		
Pimenta dioica	Allspice		■					
Piper nigrum	Black Pepper	■	■	■	■			
Rosmarinus officinalis	Rosemary	■					■	
Ruta graveolens	Rue	■	■				■	
Satureja hortensis	Savory	■	■					
Sinapis alba	White Mustard	■						
Thymus serpyllum	Wild Thyme		■					
Thymus sp.	Thyme	■						
Valeriana officinalis	Common Valerian		■					
Valeriana sp.	Valerian		■					
Verbena officinalis	Vervain	■	■					

Table 3
Herbs and spices from archaeological sites dated to the medieval period and early modern times (12th-17th century AD) from seven different countries (compiled by the author). Nomenclature after Erhardt et al. 2000

Kruiden en specerijen van archeologische vindplaatsen gedateerd in de Middeleeuwen en vroegmoderne tijd (12e-17e eeuw AD) uit zeven verschillende landen

Conclusions

Trade in plants is not well documented in the written sources left by the medieval northern tradesmen. The Hanseatic League played a leading role in transporting goods, such as cereals, to the North. Trading goods, such as weed seeds, can be traced in archaeobotanical records. Cornflower is such an indicator of imported corn to Norway (Hjelle 2007, p. 168).

Pepper is named in the customs registers and accounts of the Hanseatic tradesmen in Lübeck (Hammel-Kiesow 2000), but is only rarely found in archaeological contexts because of the lack of suitable findspots, such as latrines. This picture will definitely be changed with new excavations and more investigations of the fascinating archaeological plant finds.

Recipe for Wim from King Valdemar`s cookbook: the oldest cookbook of Europe

De salso ualente ad tres dies et non amplius

Take mints and parsley, cinnamon and pepper, the same amount of all, grind and mix them with salt and vinegar. This sauce can be kept for three days.

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