

Lettuce: from weed to our daily food

Introduction

Lettuce is an economically important leafy vegetable which is cultivated and consumed worldwide. Cultivated lettuce (*Lactuca sativa* L.) has been developed thousands of years ago in the Middle East from a weedy ancestor. Via selection by humans, this wild ancestor has been made suitable for human consumption, this process is also called domestication. Cultivated lettuce does not show much resemblance to its wild relatives as it has no bitter taste, has no thorns on its leaves and stem, does not flower quickly and has strong head formation.

Since a number of decennia Dutch breeding companies are leading the development of new lettuce varieties, which are more resistant against diseases and plagues and which pay attention to new evolving consumer needs. The Centre for Genetic Resources, the Netherlands (CGN), which is part of Wageningen University & Research (www.cgn.wur.nl) is an important supplier of variation which is needed for the improvement of lettuce varieties. Also CGN has a large heritage seed collection which is used by organizations dealing with the cultivation of old lettuce varieties. As CGN manages over 2400 seed provenances, it maintains one of the largest lettuce collections worldwide.

The first written evidence of lettuce cultivation in Western Europe one can find in the *Ortis Sanitaris* (Schöffer, 1485). Already in the 16^e century lettuce was a much favoured vegetable as can be understood from herb books, like the one written by Dodoens in 1554. At the end of the 16^e century a large variation in head forms was present, which suggests that at that time artificial selection took place already. In the 19^e century a real explosion in the number of cultivated lettuce varieties took place. Currently seven main types of lettuce are recognized. Oilseed and stalk lettuce represent the more primitive forms of lettuce. Cos lettuce is thought to have been developed from stalk lettuce and can be seen as an important source of variation from which butterhead, crisp, cutting and latin lettuce have been developed. In the Orange list (www.oranjelijst.nl), an inventory of the Dutch national biocultural heritage, a list of 254 lettuce variety names are mentioned that have been cultivated and traded in the past four centuries in the Netherlands. Of these 254 varieties 33 varieties, with 105 names, are still available.

Lettuce types

- Butterhead lettuce is a head forming type to which the Dutch are very familiar with.
- Crisp lettuce also referred to als iceberg lettuce, is also a head forming type and particularly popular in the United States.
- Cutting lettuce, also known as oakleaf lettuce, produces many loose leaves which are suitable for ready-to eat bags which can be found in many supermarkets.
- Cos lettuce, also known als Romaine lettuce, is currently also offered in Dutch supermarkets. The leaves have a crunchy texture and have a strong taste.
- Latin lettuce is mainly produced in Asia, and the leaves sand the stem are cooked or are eaten raw.
- Oilseed lettuce is not eaten due to its bitter taste, but the oil from the seeds can be used for cooking.

Wild relatives of lettuce in the Netherlands

In the Netherlands prickly lettuce (*Lactuca serriola*) and bitter lettuce (*Lactuca virosa*) are the most common wild relatives of lettuce. Willowleaf lettuce (*Lactuca saligna*) occurred until the 1950s in the South West of the Netherlands but is now extinct. Prickly lettuce is a species which is not very sensitive with respect to its growing place. The species can be found on several places in the rural area, but also in parks in the cities, in between tiles of footpaths, etc. Bitter lettuce is much more picky than prickly lettuce, because the species occurs in nutrient rich growing places where only a few other plant species occur, so for example in recently cultivated land. An interesting trait of bitter lettuce is its ascribed medicinal action: its leaf juice is thought to have a tranquilizing and diuretic effect, which was already known by Hippocrates (460-370 BC). The story goes that the Roman emperor August survived from a serious illness due to eating bitter lettuce, because of this he erected a statue for this species! By the end of the 18^e century medical doctors increasingly used dried juice of bitter lettuce (lactucarium) as a replacement for opium. Ultimately bitter lettuce could not compete with opium and

its cultivation disappeared. Bitter lettuce became popular again in the 20^e century as the hippies in the sixties thought that the milky juice of the plant, which was for free, could make them euphoric and relaxed. However most of them ended up with a severe headache.

What can be seen in and around the Rijksmuseum French greenhouse?

Cultivated varieties of the abovementioned lettuce type and three wild relatives can be seen in and next to the French greenhouse and along the footpath in front of the pond.

In the Rijksmuseum

The most famous painting with lettuce in the Rijksmuseum is the painting of Adriaan de Lelie dating from 1796 entitled Morgenbezoek (= Morning visit).

More information

Centre for Genetic Resources, the Netherlands (CGN), Wageningen University & Research, Wageningen; www.cgn.wur.nl