

Potash burning at Kulbäcksliden



Photo: Lars Östlund

◀ Potash burning on a metal plate to collect as much ash as possible. From a potash experiment at Kulbäcksliden Experimental Forest, 2016.

A great deal of potash was burned at Kulbäcksliden in Vindeln during the 1800s. Potash was an important industrial chemical extracted from the ashes of deciduous trees. Researcher Lars Tirén studied this activity at the beginning of the 1900s and documented potash burning and burning sites at the experimental forest by examining fire-damaged trees. He concluded that potash burning came to an end due to a shortage of deciduous trees. Other researchers have since questioned this conclusion, instead arguing that this type of forest use came to an end due to completely different external factors. In conjunction with this later research, large-scale experiments were also conducted in which potash was burned again.

Studies of potash production at Kulbäcksliden

Professor Lars Tirén was science director at the Kulbäcksliden Experimental Forest in Vindeln from 1927 to 1958, and he studied the history of the experimental forest in the 1930s. He examined written sources and documented traces in the forest of potash production in the 1800s. Potash was used in the production of glass and soap.

Stands of young trees were found at sites that had been used to burn potash. Moreover, nearby trees had fire scars on the side that would have faced the fire. Using dendrochronology, Lars Tirén could date the fire scars left by potash burning. What's more, in two instances he also found trees engraved with years and initials consistent with the years extrapolated

using dendrochronology. According to Tirén, potash production came to an end due to the large number of deciduous trees required eventually resulting in a shortage of such trees.

Potash production in the 1800s

According to research, potash production at Kulbäcksliden began in 1837. This is also around the time that potash production peaked in Västerbotten County. Much of this potash production took place in areas west of Storkåatjärn, east of Storlidsmyren and north-northeast of Flakastugan. In some areas, the burning sites were closely situated, such as in area 74 where there were as many as 13 burning sites per hectare in 1843. This would suggest that there were plenty of birch trees in that particular area.



▲ Map of tar boiling and potash burning at Kulbäcksliden Experimental Forest. The years on the map indicate potash burning while T stands for tar boiling. Source: Lars Tirén, *Skogshistoriska studier i trakten av Degerfors i Västerbotten, 1937*

Two boiling areas have been found in the experimental forest, Ol-Jonskokstaden and Pottaskekostaden, although there were probably many more. Potash production continued until 1871, which is when the last potash burning has been dated.

Researchers produce potash

In the same area where Lars Tirén documented past potash burning, a research experiment was conducted by professor Lars Östlund and others in 1997. The researchers burned potash based on descriptions of the method provided by assessor C. F. Plageman, who taught potash burning methods in the 1830s and

1840s. Additional descriptions from Lars Tirén's report on the forest history of Degerfors from 1937 were also used.

The aim was to examine the yield, that is, how much refined potash is produced from a certain amount of firewood using these methods. The experiment was to enable a comparison with historical descriptions of yield and methodology.

The resulting potash yield was low, which means that a large number of deciduous trees were needed. However, according to their study, a shortage of firewood was still not the reason why potash production came to an end. There were most likely much larger



Photo: Lars Östlund

▲ Ash and water are reduced to a paste in a pot. The name potash stems from this use of a metal or clay pot. The photograph is from a potash experiment in 1991.



Photo: Lars Östlund

▲ A potash fire from a potash experiment in 1991.

numbers of deciduous trees in the area than Tirén estimated in his report. According to written sources, it is more likely that potash production declined due to competition from potash from German mineral mines or the cheaper alternative sodium carbonate. One indication of this is that potash production also declined in northern Finland and the USA at the same time. Moreover, tar production and logging increased during the same period.

Students burn potash again

In 2016, a group of students from the Swedish University of Agricultural Sciences reading a course in forest history conducted a new potash burning experiment

at Kulbäcksliden. The purpose was to compare the potash yield from raw birch wood with previous studies.

The birch logs that were burned were measured to calculate the volume used to produce the ashes. What's more, the firewood used to evaporate the water and dry the potash was also measured. The firewood was burned on a metal plate to more easily collect the ashes. Afterwards, the dried ashes were sifted to remove any larger pieces of charcoal.

The ashes were then boiled until only a paste was left, which was dried in a metal pan. The results differed from previous studies, providing a higher potash yield.



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Project PINUS, a project for innovative experiences in managed forests, aims to gather the tourism industry, the forest industry and forestry academia in efforts to create opportunities for tourism in managed forests. Project PINUS began in August 2016 and runs until November 2019. The Museum of Forestry in Lycksele is the project owner.



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