

Industrial utilization of hardwood in Sweden

- With special focus on ash, elm, maple and lime tree

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Abstract

Sweden has about 23 million hectares of productive forestland. This means that forests cover more than half of Sweden's area. Sweden is located in the northern coniferous zone, with spruce and pine being the most common tree species.

Sweden is an important country with respect to production of pulp and paper and sawn wood based on softwood. An increased demand for hardwood to the pulp industry and a new way of looking at hardwood, not only as an industrial wood resource but also as a forest type with a rich biodiversity and a place for human recreation has resulted in a growing interest in hardwood forest.

The total stock of wood in Sweden's forests amounts to about three billion m³sk (forest cubic metres). Annual growth amounts to about 100 million m³sk, while the volume harvested each year is around 80 million m³sk. The annual growth of hardwood is roughly 20 million m³sk. The hardwood stock of wood has increased from about 300 million m³sk in 1920, to roughly 500 million m³sk today. The hardwood stock of wood stands for about 19 % of the total stock of wood in Sweden.

Birch is the dominating hardwood species standing for about 67,2% of the hardwood volume. Aspen stands for 8,9 %, alder for 7,7 %, oak for 6,1 % and for beech 3,6%. These five species stand together for 93.5 % of the hardwood stock of wood. The total volume of ash, elm, maple and lime tree is 7, 9 million m³sk which is less than 1, 6 % of the total hardwood volume.

In 2004 Sweden produced 11.6 million tonnes of paper. The export ratio in 2004 was about 86 per cent. Hardwood stands for about 15% of the wood consumption in the pulp industry. The total production of sawn wood was 16, 7 million m³ and of this, 11, 2 million m³ was exported. There are about 300 sawmills in Sweden producing more than 1000 m³ a year and about 1 600 mills producing 25 – 1000 m³ a year. In the small sawmills about 9% of the production is hardwood while it is only about 1% for larger mills. There are only three hardwood sawmills in Sweden producing more than 5 000 m³ a year.

The dominating consumer of birch, aspen, beech and alder is the pulp industry. Birch, beech and alder are also to a large degree used in the sawmill industry and further utilized for furniture. Oak and ash are used mainly in the sawmill industry. During the last 10 years there has been an increased demand for oak, ash and beech for flooring.

Quite a lot of the elm wood comes from cutting of dying trees due to Dutch elm disease and the wood is normally burned. Elm is otherwise used for exclusive furniture and parquet. The resources of maple are very little and the trees seldom reach a dimension, which is needed in the sawmill industry. A lot of Canadian maple in form of veneer is imported to Sweden. Linden is mainly used by carpenters. The demand for ash, which is quite good, has resulted in import from Denmark and Germany. The Swedish ash is said to have more dark heartwood than the Danish and German ash, but today the demand for the darker ash is as strong as for the light coloured wood.