



Farming with pollards

A productive way of pruning

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Why pollard trees?

Pollarding trees optimises renewable biomass production and facilitates local production of firewood, ramial chipped wood (RCW), lumber and fodder. Harvest occurs over decades, depending on the chosen frequency of pruning and utilization. Many tree varieties can be pollarded to provide a range of products. Pollarded trees have an increased lifespan. As their growth is limited, they better resist wind and drought, and this may be of particular benefit in global warming conditions. Old pollards use compartmentation to ensure living cells are protected from diseases and dead cells in the middle of the trunk. The tree trunks, and even the roots, are also great biodiversity habitats for flora and fauna.



Sheep like to eat the leaves of ash trees
Ref: P. Van Lerberghe



Fuel-wood from pollarded ash trees Ref: D. Mansion

Where and how to pollard trees

Pollarding trees is a traditional and widespread practice found throughout the world. The technique involves reducing the height of the tree without reducing the tree bole. Pruning can be done every 6 to 15 years depending on the tree growth.

Pruning is best done with a chainsaw when there is no sap rise, and as soon as the tree reaches the desired block height. It is often done in winter. However, pollarding can also be carried out in summer in order to provide fresh fodder to cattle when there is drought and grass shortage. Pollards have a longer vegetation growing season, and for three years after pollarding can produce juvenile leaves late in the season, which are richer in nitrogen and more edible than that available from non-pollarded trees. Harvested leaves can be dried to provide fodder throughout winter. Larger branches can be processed into logs and smaller ones can be crushed to produce RCW or chips, to be used as mulch or as litter for livestock farming.



Ramial chipped wood is produced by crushing pollards branches Ref: D. Mansion



Advantages

Non-pollarded trees can only be harvested once after decades of growth. By contrast, pollarded trees can be harvested regularly over a prolonged period resulting in a range of economic products. This increases the resilience and stability of the system. Bulky trees can be pollarded instead of being cut down or removed. This same technique provides an opportunity to maintain a high number of trees by optimising space, as is the case with living hedges made of short pollards. This agroforestry system minimizes light competition from the tree and can alter the seasonal distribution of leaf growth



An old ash tree can produce up to 4 m³ of logs
Ref: P. Van Lerberghe

Large pollards of fast growing trees, such as willows or ash trees, can produce up to 90 kg of fresh branch biomass over the year following pruning. Branch woody biomass production is often far higher than trunk biomass production (between 5 to 20 times higher). A study showed that over a production cycle of 100 years, pollarded ash trees can produce between 1300 to 1700 kg of dry biomass (i.e. trunk and branches). Pollard biomass productivity depends on the tree species and its suitability to the environment, the health of the tree stand, and the maintenance regime. Labour demands can be fairly limited.

On the basis of the market demand for RCW along (around 50€ per cubic metre in 2017 in some regions of France) pollarding can be profitable although this depends on the location of the pollards, the availability of wood chippers and the available labour force. It is also important to recognise their value in terms of biodiversity and cultural ecosystem services.

Studies have been made on wood chips used as cattle litter. The first results are very positive, and show that dried wood chips can reduce disease levels over winter. They are stable and very absorbent (1 m³ absorbs about 350 litters of urine), and their use can lead to a reduction in incidences of mastitis and lameness. No case of intestinal occlusion or respiratory complications was reported. Owners of wood chip can use this to replace straw litter, which is an important in zones with limited straw resources. Used wood chip litter provides a very good compost similar to humus.

Further information

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Serre B (2012). Litière en plaquettes de bois La litière. Chambre d'Agriculture du Cantal.

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