

Tree hay: forgotten fodder

Making tree hay is not too onerous and has many benefits, as

Laura Gude and Jon Haines *explain.*

The practice of making tree hay in the UK and much of Europe outdates that of making hay from pasture, which became popular with the invention of the metal scythe. Even after focus switched to making hay from pasture, tree hay remained a crucial resource for many livestock farmers, particularly in times of need, until the European practice of growing winter root crops superseded it. But for some, tree hay remained a useful supplementary feed through hard winters but also through poor summers when making high quality grass hay was not possible.

Tree hay is the preservation of tree branches and leaves for feeding to livestock later. While no longer mainstream in the UK, some farmers still make tree hay and use it as a supplementary feed, rather than relying on it. If given access to tree browse (fresh tree leaves), livestock will naturally feed on a range of tree species. Since leaf nutrition varies according to season, age, and whether fresh or dried, experts recommend multi-species planting to provide a range of nutritional benefits for livestock [1]. Most species of tree are palatable, but if considering making tree hay (or browse) farmers should thoroughly research species toxicity before feeding it to livestock. For example, stone fruit tree leaves can be poisonous, particularly when wilted or dried.

Tree hay serving suggestion. Photo: Bill Grayson.



Species and season

In mainland Europe, elm and ash are generally said to produce the best leaf fodder [2]. In the UK, willow and poplar hybrids are popular trees as they are large-leaved, very palatable and their long straight stems make good bundles. Elm, sycamore and lime are also favourites; hazel and birch less so. As well as palatability, qualities such as leaf size, straightness of stems, and 'thorniness' (for the sake of the farmer's hands!) are important factors to consider.

Despite its historical importance, tree hay is far less mainstream today. Many are put off by the belief that it is very labour intensive or difficult, and it certainly seems so compared to the modern process of making forage hay or silage with machinery. However, most farmers making tree hay in the UK have a surprisingly simple approach: cutting branches, bundling them with twine and either standing or laying them under cover for at least a few weeks to slowly dry. In fact, some farmers find it can be much more forgiving than making grass hay, being less weather dependent and requiring minimal tools. It also provides more biomass; although rare in the UK (see article on page 12), a single mature aspen tree may provide a similar quality and volume of forage as a round hay bale.

Although the cutting and bundling of branches for tree hay can be done fairly simply, managing the rotation and fodder banks from which it is sourced takes more experience. Many farmers already take a rotational approach to on-farm tree and hedge cutting, but those thinking of making tree hay should fully consider how the trees will fit into the farm management system.

Normally coppicing and hedge cutting are carried out in the winter when trees are dormant, to make the most of higher energy reserves which allow trees to sprout more vigorously in the spring. Tree hay must be cut during the growing season, and optimising the timing is tricky. Some literature advises cutting with the first flush of spring growth, when the protein and dry matter digestibility peak, while others advise mid-summer cutting to optimise fodder volume and allow better tree recovery. In reality, timing your cutting involves weighing up a variety of different management priorities. In any case, cutting branches during the growing season can leave a tree short of energy for recovery, so consider longer rotations to allow more time to recharge plant energy reserves. Farmers should also consult the regulations which replaced cross compliance at the end of 2023 (cross



compliance prohibited cutting back trees and hedges between March and September).

Goats

Rosa and James at Tap o' Noth Farm in Aberdeenshire (see article on page 26) started making tree hay for their goats a few years ago. They have an agroforestry system which needed to be cut in rotation, and wanted to get a yield from a management task. Tree hay has become such a success on the farm that it is no longer considered a by-product, but integral to their whole system. They cut mid-summer, and try to keep the process flexible and practical, by favouring longer, straight branches which are easy to bundle but small enough to handle [3].

They started small: just a few bundles of ash, and with limited covered space they tried drying it outside. They quickly found that the rain ruined the bundle almost immediately. With several years of experience under their belts, Rosa and James favour a sunny and windy day to make their tree hay, and put it under cover immediately,

as even a little rain seems to ruin it. Crucially, other practitioners also recommend drying it out of direct sunlight otherwise leaves tend to go brittle and fall off. Rosa and James initially worried that the inside of the branch bundle would go mouldy but it turned out to be the best bit—they found it seemed more cured than dried.

James and Rosa have found that adding tree hay to the winter diet provides extra nutrition and minerals, as well as reducing parasite load. They find that the goats self-regulate their diet when tree hay is offered as a supplementary feed, seeming to know what they should and shouldn't eat as long as it is not cut up and they can tell what they are eating.

Cattle

Bill Grayson, a farmer based in South Cumbria, knows that his red poll cows also self-regulate their tree hay consumption, tending to browse the tree hay for a few minutes, then graze pasture, then return to the tree hay an hour or two later. He believes livestock can learn to eat tree hay and browse safely if the system is right. In his closed herd the cows have learned from generation to generation what

species they should eat and how much; even young calves. Despite his cows' ability to self-regulate, Bill knows he should not rely too heavily on tree hay as a main source of nutrition for cattle, as the tannins contained in the tree leaves can disturb rumen function, potentially to the point of causing the animal's collapse. (Goats, as specialist browsers are less sensitive to the tannins). Bill normally limits the daily feed to one or two branches per cow, and critically, he always gives them access to an alternative, such as grass or silage, so they can choose what to eat. Bill mainly uses sycamore, lime, ash and wych elm, and says that if the cows have access to tree hay they always eat it.

Browsing trees in wood pasture has been key to Bill's livestock management for over three decades, and he started making tree hay largely as a byproduct of tree and hedge cutting to avoid waste. He takes whole branches of anything palatable into his barn and lays them either flat or upright and dries them for a couple of weeks. Then he piles them loosely (for air circulation) into the corner of the barn for winter. It has become so important to him to supplement the cows' diets in the winter that if he runs out of tree hay he will cut and feed ivy.

With a changing climate it feels right to diversify winter livestock feed to prevent overreliance on one fodder source. In a well-managed system tree hay can be good for livestock health, and making tree hay adds another reason to value on-farm trees. Despite adding yet another job to the list of summer farm tasks, many farmers have found it works brilliantly within their system.

References

1. For further information on the nutritional value of fodder trees see the European tree fodder database at voederbomen.nl/nutritionalvalues.
2. Krawczyk, M. (2022). *Coppice agroforestry: tending trees for product, profit, and woodland ecology*. New Society Publishers.
3. A 15-minute film is available at youtube.com/watch?v=wavPT4JY0ws&t=102s.

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Tree hay store at Tap o' Noth Farm.
Photo: James Reid.