

WRITTEN BY [DERIC CHARLTON](#)

Fodder from trees



When dry weather sets in during summer or early autumn and pastures shut up shop and brown off, farmers need to de-stock – but still need to find other feed for their remaining animals. Buying in balage or hay, and growing summer forage crops like Pasja or Hunter turnip-rape are all good options, but some trees and shrubs already growing big and succulent on the farm can provide excellent feed at these times.

Using trees for stock fodder isn't really new. Some versions of the Bible tell us (in Exodus Chapter 31) that Jacob fed his ewes on poplar foliage, and they grew really well. You might even be surprised to hear that more farm livestock are fed tree fodder on this planet than are grazed on pastures. This is especially the practice in tropical and developing countries where animals are shepherded on natural foliage through the day. Wild animals like giraffes feed naturally on trees anyway.

Back in 1986 a New South Wales farmer showed me the secret to his farming through two five-year droughts – he had bought the extensive property because it had kurrajong trees growing all over it. Each day he would climb a tree and saw off enough branches to feed the sheep.

In recent years I have met and visited quite a few New Zealand farmers who have been using trees as feed for many years. One Wairarapa farmer told me he'd been doing it for over 40 years and wondered why others were still not thinking of it. Willows thrive along river beds in this country and stand out like oases during summers, and some like crack willow are classed as weeds, so why not solve two problems at once and feed them to hungry farm stock?

So why isn't this common practice among Kiwi farmers? I'm sure there are several valid reasons, including cost, the effort of pruning them, the potential danger through untrained farmers using chainsaws on trees, and problems with fences and tracks as obstacles. There are more – like trying to tackle huge unmanaged trees that have to be dealt with by professional foresters. One farmer I heard of was stuck up a tree three times – he hadn't tied the ladder to the tree and his cattle soon kicked it away!

However, some farmers in the southern North Island have achieved impressive results with tree fodder, and some of them were recently



involved in a project backed mostly by MAF's Sustainable Farming Fund. This team comprised farmer groups in Wairarapa, Hawke's Bay and Rangitikei, land management officers from the relevant Regional Councils, and researchers from AgResearch, HortResearch, Massey University, and some individual enthusiasts (including me).

This team collected practical information on growing and using tree fodder, and ran on-farm trials comparing feeding willow and poplar foliage with other available feed resources. They also organised on-farm demonstrations and prepared reports, newsletters, media articles and a website, all of which encouraged farmers to use this feed source when they needed it.

Some of the findings that emerged are summarised below:

When to feed

Summer is the time to prune and feed willows and poplars – when feed shortages occur and ryegrass pastures are performing poorly in dry areas. Massey University research undertaken on their Riverside Farm in Wairarapa showed that feeding ewes willow foliage during mating on droughted pasture, for up to seven weeks during February-March, boosted lambing percentages – as though there was no drought.

Ewes fed high rates of tree fodder had weaning percentages of 122%, compared with 92% for ewes fed only on drought pasture. The total lamb weight weaned per ewe was superior for those ewes supplemented as they raised more lambs per ewe.

What to feed

Willows and poplars are the most suitable trees for supplementary fodder, as they are already planted on many farms for erosion control or as shelterbelts and shade trees. They can be bought as poles from regional council nurseries and other suppliers.

These poles are usually planted during late winter and early spring. A wide range of types has become available over recent years, developed by government workers at the now defunct Plant Materials Centre in Aokautere near Palmerston North. Some are more tolerant of possums whereas some poplars are resistant to poplar rust disease. Local regional council staff and tree suppliers will stock those most suitable for a particular district.

Feeding willows and poplar

These trees can be pruned every other summer – and they should be regularly pruned anyway or they grow too big and become dangerous to farmers and their livestock. Some farmers “pollard” their young willow and poplar trees (when they are about five years old) at about two metres above ground, so that they regrow as bushy, low-growing trees bearing plenty of fine branches for feeding – but out of stock reach. It is relatively easy and much safer to prune these thinner branches when growing at this height. These trees will still act as “water pumps”, helping to prevent erosion on unstable hill slopes.

Browse blocks of willows and poplars planted close together is another way to grow and harvest tree fodder. The poles are grown closely together, in rows at up to 6,000 per hectare and these can be

browsed by stock once well established. It then pays to trim the untidy remainder after browsing down nearly to ground level, to allow regrowth for the next summer. They can be grown on unimproved areas, preferably in swampy corners unsuited for good pasture growth – but a good pasture understorey will develop as the trees grow and will be grazed by the stock as they also browse the trees – two feeds for the price of one!

Pennies from heaven

Another means of obtaining useful supplementary feed from trees – especially poplars – is as “pennies from heaven”.

Poplars react to summer and autumn drought by shedding their leaves, which are usually more palatable than most available pasture at this time, unless they are infected severely by rust disease. The livestock grazing under these trees will eat all the available leaves as they land, and while they may not rate as highly as good pasture feed, they are rich in trace elements, and soon disappear.

Feed quality

Why are poplars and willows potential sources of valuable supplementary forage? Their foliage contains valuable compounds called condensed tannins (CT) and phenolic glycosides (like aspirin) and these can provide better feed value than poor or dried-up pasture, according to Professor Peter Kemp of Massey University.

Professor Peter Kemp found that a 5-10 year-old tree yielded up to 22 kg per tree of edible forage, and that poplars and willows were similar in nutritive value, although the CT level was usually higher in willows. The tree bark also had good nutritive value.

Is it worth it?

Consultants have analysed results from trials and reported that while there is a cost to feeding tree fodder, any feed is essential in a drought and feeding home-grown tree fodder can be a greatly satisfying morale booster for a farmer.

One Wairarapa farmer told me he used his chainsaw on a poplar tree, causing all the sheep to head quickly to the far corners of the paddock. But when he repeated his pruning the next day, when he started the chainsaw all the sheep ran towards him!

One Hawkes Bay contractor cut down an old poplar tree and fed the branches through a chipper, collecting three tonnes in his trailer. He parked it overnight in the corner of his deer paddock, but the following morning the chips were all gone, and his deer were keen for more.

One final warning however! Safety during tree pruning is imperative, so take a training course and only use the recommended equipment for tree pruning. Remember – the family and livestock need someone to feed them the next day too!