

## **Bracken as Bedding**

### **Extracts from Nibblers online discussion group**

I have a student who is looking into using bracken as bedding for wintering stock. Does anyone have any experience of using bracken this way? Are there specific ways the bracken needs to be cut and collected, and otherwise prepared before it makes good bedding?

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Bracken is still cut on the Long Myndd (NT) for bedding, I think for local stables. Bracken used to be cut extensively in the uplands for bedding. You might find information about this in some of the old agricultural accounts, eg the Agriculture and Minerals of Derbyshire by Farey, 1815. He gives lots of detail on other management regimes eg for oak bark, coppicing, how to remove the heather from the limestone heaths(!), etc. There were similar tomes for most counties at about this time commissioned by the Government.

Penny Anderson

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Some farmers in NW Wales went back to using bracken for bedding in the late 1990's (still are as far as I know) as the cost of importing big bale straw escalated. As I remember they were cutting and baling, but I don't have any specifics: CCW or the Wildlife Trust may have contacts. Finding a machine to bale the bracken might be a challenge: baling contractors may not want to use their big-bale machinery on rough land and small balers are getting harder to come by/maintain.

Your student might also want to consider the carcinogenic properties of bracken and the potential for exposure at each stage of harvesting, storing and using the material as bedding. There is a lot of myth and whisper around this issue, but there is also some useful research.

Your student may also want to consider using bracken litter, in the same way that the Dutch use dried/crumbled turf from their plaggen systems as bedding in their sheep barns: many of us have areas of deep bracken litter that are virtually inert and that we would like to see cleared.

And of course we are all aware of the potential biodiversity value that bracken can bring to a site, so your student will need to consider the negative impacts of adopting a bracken harvesting regime

Best of luck with it!!

Regards

Steve

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Your student may be interested in the old story that if you can burn off the blanket of old dead bracken, this exposes the roots of the bracken to a severe frost to which it is very prone. Due to global warming we do not seem to get any really hard frosts so its application is a bit limited, assuming it is true. Bracken does not rot down like straw and so beware of using it where you have to muck out by hand !

Richard

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Dear David,

In the Isles of Scilly Tresco Estate 01720 422849 (ask for Paul Christopher) cut and bale bracken every year to use as bedding.

David Mawer Senior Conservation Warden  
Isles of Scilly Wildlife Trust

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Author wrote:

"Your student may be interested in the old story that if you can burn off the blanket of old dead bracken, this exposes the roots of the bracken to a severe frost to which it is very prone."

My feeling (from watching it being done in Welsh pastures) is that this is a good way of encouraging the bracken, which is more fire-tolerant than many other things. Better to trample or mow off the litter, leaving the other plants uncovered.

Richard

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In the New Forest bracken is still cut for bedding by a few people -- we had some ourselves one year as horse bedding.

It's cut and baled in late summer, when the fronds are beginning to turn. By the time it's dry it's dark brown, and as conventional bales it's light and easy to handle.

It makes very good bedding, but is rather different from straw.

Firstly, the animals don't eat it (we find both horses and cattle eat a good bit of a straw bed) therefore they need a little more hay as feed.

Secondly, it breaks down more than straw, and quicker. This means it makes good and quick manure, but also that you need to top up the bed a bit more (we deep-litter both horses and cattle).

The chap who cuts it near here uses it as bedding for kennels, and swears by it for that.

We also use tall sedge as cattle and horse bedding, cut in July or August & made like hay. Mainly lesser pond sedge (*Carex acutiformis*). It's almost dust-free, and the animals don't eat it much -- I think it would be particularly good for allergic horses, or for fat ponies on a diet. Again it makes good manure.

Richard

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A bit of personal experience: an early season heath fire that went into bracken caused an explosion of fronds later on which were sprayed with almost 100% control. Conclusion we drew was that the fire, or following frosts, had in some way activated a lot of the dormant frond buds and thus we got them in one hit.

Re frost as a controller of bracken; I guess this is only likely where the soils are very shallow so the rhizomes are close to the soil surface.

Nigel

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Thinking a bit more about this, I wonder if it depends upon what the bracken is doing.

The cases I was thinking of in Wales were where patches of bracken were spreading in acidic pasture, with some grass still within the bracken stands. The bracken was burnt in winter, and my impression was that this just killed off what little grass was left beneath the stand. In a similar situation where bracken was not burnt but pulled twice a year (young

fronds at crook stage, and when dying back in late summer), the bracken was very heavily hit and the grass sward recovered markedly the following year.

It may well be different where bracken is very well established with deep bracken and no other vegetation. Here it may well be that burning will removed the litter & some of the peat and expose the rhizomes to frost or trampling. In heathland need to be careful the fire does not kill surviving heather seedbank in the mineral soil beneath the bracken peat.

Incidentally, we find that cattle have a significant effect on bracken wherever there is still other vegetation beneath (grass, wood-sage, honeysuckle or even climbing corydalis). They graze through it, knocking aside bracken fronds and trampling it, opening up the canopy and damaging the bracken. However where the bracken is the sole vegetation they don't go in it much, except that they use small areas to lie up on. My impression is that sheep will readily graze under bracken, but they do so more delicately and so don't harm it. I wonder if this is one of the reasons that bracken is so prevalent in the uplands now.

Has anyone tried using pigs on heathland for bracken control? If so, how were they confined, what kind of pigs, what time of year, were they fed as well, what density etc? I've a feeling there was something on Countryfile last year about using wild boar for this...

Richard C

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Re bracken and fire - I studied the relative rate of expansion of bracken after fire on heather moorland in the Peak District after widespread spring fires in the 1980s, and found - as has been noted elsewhere, that bracken spreads quite a lot faster after fire – possibly because the other species like heather recover more slowly and are not as competitive as the bracken can be. Whether fire would stimulate bracken would therefore relate to when the fire was - late autumn could be usefully damaging, spring or summer could stimulate further spread. We have also studied sheep grazing on a moor - noting where they were every couple of weeks throughout the grazing season in relation to the vegetation type. We found that the sheep utilise the bracken patches extensively early and late in the year, grazing on the vegetation underneath before and after the fronds had come up or died down. There did not seem to be any in the bracken when the fronds were at the highest in the summer (although we may have missed some because of the height!). They did not use bracken without vegetation underneath at all except to pass through on small paths.

The spread of bracken in the hills is usually attributed to the increase in sheep and loss of cattle plus the trampling you mention, plus the lack of cutting for bedding which seems to have been undertaken on a wide and large scale. As bracken is a relatively competitive species, increased nitrogen deposition could also be having an effect?? We have also studied bracken on sand dunes in Jersey and found that in dry years, the fronds receded rather than expanded, and in wet years they expanded, resulting in fairly stable cover over time. When there were major salt-laden gales, though, the gorse on the site edges on cliffs died, and were replaced quickly by dense bracken. Interesting the dynamics of bracken?!

Kind regards,  
Penny

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Penny

There are a few factors which, I think, suggest that raised levels of N deposition might favour bracken. Bracken retains water on its leaf surfaces more efficiently than other species with which it normally grows. This, coupled with it's taller stature, should enhance its ability to both capture and absorb N. The N content of bracken, and that of the soil below bracken plants, tend to be higher than other species, which would tend to support this suggestion.

Bracken makes a very good horticultural compost and tends to have a higher ratio of N to P than farmyard manure, for example. The relatively low N content of FYM relative to P, particularly in composted FYM, probably limits its usefulness as a fertilizer compared to inorganic compounds, which normally contain a higher proportion of N (20:10:10, for example - remembering that the :10:10 are phosphate and potash, not P and K). It could therefore be that FYM made from bracken may have a higher N content than that made from straw, and may be a more useful fertiliser than conventional FYM - this would depend upon the stage of growth at which the bracken was cut, since much of the nutrient content of bracken is withdrawn as the plant dies back in the autumn. This may all be of purely academic interest, of course, until someone thinks it worthwhile funding some research into it!

Francis

Dr F.W. Kirkham  
Ecological Research & Consultancy

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All of which proves that standard rules for the Highlands of Scotland and Southern Greece is a lost cause. I wonder how many billions will be wasted by the commie Commissioners before they wake up to the battle cry "ask the locals".

Bracken on peat here started the peat burning in the summer of 1976. I do not know if Brussels has told the FC to stop digging first world war trenches yet.

The downwash of helicopters does a grand job of getting spray onto the fronds of bracken but you must then stock heavily to keep any volunteers in check.

Richard

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Author wrote:

"Bracken retains water on its leaf surfaces more efficiently than other species with which it normally grows. This, coupled with it's taller stature, should enhance its ability to both capture and absorb N".

Is this capture route significant compared with N deposition in rain? Also, the ability to capture N this way does not necessarily mean bracken will benefit from the capture -- it could just as easily favour other plants nearby when the fronds decay.

"The relatively low N content of FYM relative to P, particularly in composted FYM, probably limits its usefulness as a fertilizer"

I suspect this depends to some extent on the source and type of manure. For example, I notice that horse manure made from dung picked up off a paddock takes much longer to rot down than stable manure. I think this is because it contains no urine, and therefore presumably the N is much lower. (Presumably the P is from the dung?)

Likewise there's likely to be a difference between traditional stable manure (mucked out to the floor every day, lots of fresh straw) and deep litter manure (more straw put on the top every day, mucked out in spring). The former tends to have very much more straw in proportion, and be aerated more at an earlier stage. All manure from housed animals should contain most of the urine -- but I wonder how much of the N remains after rotting down? For example the reek of traditional horse manure is ammonia leaking away.

If what you say is right, bracken-based manure might be better on both counts.

"This may all be of purely academic interest, of course, until someone thinks it worthwhile

funding some research into it!"

Yes. And you can bet that any research won't be into low-intensity systems...

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I used to manage bracken in a similar way but without the fire. We crushed the bracken early in the season, either by thwacking it, or by riding over it on a quad (much more fun). This stimulated more vigorous growth later in the season, and then we'd spray in July with very good results.

Sarah Kessell

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I get a head of steam about the hope that Phosphate can be expected from FYM. If you run a system of stock raising then you take away phosphorus and must replace it. If it does not go in, it won't come out in the FYM! Cattle drink each other's urine in dry weather and this helps digest the coarse grass in the case of boran cattle. On Samburu advice I limited water to once every three days for 1000 head of dry stock. This allowed them access to eight times as much grazing, by coralling them half a day's walk from water. The Rhodies used to keep chickens with cattle and their N rich droppings got eaten helping digest the fodder whatever that was.

I have long been mystified as to what was so marvellous about FYM, but organic farmer Helen Browning says it is the bugs.

I think we used to get sulphur (and dioxin!) from the Llanwern Steel works but that has closed shop, so what goes on up wind of you may be relevant.

Spraying bracken with a chopper was great fun provided you got a ride to look at your patch and almost 100% effective with Asulox but that was thirty years ago.

If you get asked funny questions when you buy a CDA type sprayer it may be that it is ideal for dispensing droplets of bio/chem agents in the underground train system. Ebola, marburg's, sarin and tabon and VX come to mind. Anthrax is difficult to weaponise I read but probably do not believe.

The Yanks found all the ducks landing on the evaporation ponds of the Rocky Mountain Arsenal keeled over, so they put plastic ducks on the ponds to make it look better! This stuff does not make your hair stand on end, it just makes it fall out.

Richard

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