

New Forest Fact File

OPEN FORST MANAGEMENT Bracken Composting in The New Forest

Since 1992 the Forestry Commission and an independent scientist (Dr. Rona Pitman) have been carrying out trials on composting cut bracken. The reasons for starting these trials were two-fold:

- The Forestry Commission are obliged under the 1949 Act to maintain grazing areas for Commoners' animals on the forest. This includes the control of bracken encroachment.
- Bracken litter has been collected from the forest for many years by horticulturists and amateur gardeners alike for use as a mulch or potting medium.

Given these 2 factors it was decided to set up trials to investigate the possibility of successfully marketing a safe alternative to peat through composting bracken.

Sites are selected for cutting in the early summer through a series of field trips. Once a programme is drawn up and agreed the work can commence, this normally being at the end of August or the beginning of September and lasts for about 2 weeks. The Forestry Commission cut bracken this late so as not to disturb ground nesting birds, though it is generally accepted that cutting earlier would benefit the composting process.

The annual programme covers an area of about 60 hectares on 15 sites throughout the forest producing about 2000 cubic metre of cut material. The bracken, which is cut with forage harvesters, is transported to a central storage site where the composting takes place.

During the experimental trials the cut bracken was put into a series of storage bays each capable of holding 40m³. For two years these bays each received a different treatment.

The 1992 trials:

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| Bay 1 | Control - no further treatment. |
| Bay 2 | Bracken turned on a regular basis. |
| Bay 3 | Finer chopped bracken. |
| Bay 4 | Finer chopped bracken and turned on a regular basis. |
| Bay 5 | Ammonium nitrate added at a rate of 75kg/40m³ then turned on a regular basis. |
| Bay 6 | Ammonium nitrate added (at the same rate) and no turning. |

The 1993 trials:

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| Bay 1 | Ammonium sulphate added to it at a rate of 100kg/40m³, then sheeted with Polythene, as in silaging. |
| Bay 2 | Control heap - no further treatment. |
| Bay 3 | Turned on a regular basis. |
| Bay 4 | Urea added at a rate of 50kg/40m³. |
| Bay 5 | Ammonium sulphate added at a rate of 100kg/40m³. |
| Bay 6 | Sheeted with polythene and left |

The heaps for both trial years were closely monitored for physical and chemical changes. Part of this included the taking of temperature readings daily from the centre of each heap. It was established that moisture content was linked to the generation of heat, with the critical minimum water content being 70%. The ideal temperature for aerobic decomposition appears to be about 45°C, so heaps that failed to reach this temperature were wetted and re-turned

For the successful breakdown and depletion of carcinogenic compounds such as ptaquilaside the heaps need to be kept at 60°C for several weeks, though with lower temperatures this can be achieved after about 5 months.

Fresh cut bracken has a pH of 5.5-5.8 but within 3 months of composting this had increased to 6.8-7.0. In the fertilised heaps the pH continued to fall to a minimum of 4.8-5.0 over 6 months. Summer cut bracken appears to have a slower fall off rate of pH possibly due to the higher carbohydrate content. Though the material has acidified the pH appears to stabilise.

The results of the trials indicate that composting bracken produces a material similar to peat being lightweight, a low pH, good water retention and importantly, after a period of successful composting is safe to handle.

Its proven uses include;

- **A top dressing/mulch for flowerbeds and borders to suppress weed growth and aid water retention.**
- **A potting medium.**
- **A soil conditioner**

Composting bracken is especially suited for use with plants such as Azaleas, rhododendrons, Acers, wiegela, viburnums and erica species.

The composted bracken material currently produced by the Forestry Commission is forage harvested, put into one large heap and turned 2 or 3 times over the course of a year. There are always 2 heaps located at our storage site, one composting and one ready to market. A large proportion of our composted bracken is sold onto a local nursery owner. He buys it in bulk orders and puts it into 60 litre bags to sell from his garden centre. The remaining material is bought off the Forestry Commission by local authorities, amateur gardeners, gardening associations and small estates.



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