



## Alternative use of the woody component: Ramial woodchip for improved soil fertility from agroforestry systems

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The application of uncomposted (ramial) woodchip at an appropriate phase in a crop rotation has been shown in some trials to increase soil organic matter, water holding capacity and nutrient levels of soils. However knowledge and research on the subject is limited. A group of farmers, foresters and researchers are investigating this in the UK through a series of on farm trials comparing the addition of uncomposted vs composted woodchip from on-farm woody resources as a soil improver.

The trials use material produced from the management (coppicing) of farm hedges, trees and short rotation coppice agroforestry systems. The self supply of fertility provides an incentive for the inclusion and active management of on-farm woody resources.



Figure 1. Spreading woodchip at Tolhurst Organics, UK

Practical recommendations from the trials include:

1. Look at existing resources on the farm to establish availability of material and plan management.
2. Smaller diameter material with a larger percentage of bark is recommended (e.g. hedge or short rotation coppice material) as it is more nutritionally rich and breaks down faster.
3. As a guide 100m of traditional field boundary hedge managed on a 15 year coppice rotation will produce approximately 30-40 cubic metres of woodchip at each cut and 100m of willow short rotation coppice managed on a 2 year rotation 6-8 cubic metres of woodchip at each cut.
4. The trials have used application rates of between 40 and 180 cubic metres/ha, but there is not currently an agreed optimum application rate.
5. Apply the woodchip when green as soon after cutting and chipping as possible before the composting process starts, a rear discharge muckspreader can be used to apply the material.
6. To minimise the risk of nitrogen lock-up apply to the surface of the fertility building phase of organic rotations or if cropped in spring apply an additional source of nitrogen (e.g. manure or mineral fertiliser).

### References:

Free, G.R. (1971) Soil Management for Vegetable Production on Honeoye Soil with Special Reference to the Use of Hardwood. Plant Sciences Agronomy  
<https://www.agricology.co.uk/field/blog/agroforestry-and-using-woodchip-improve-soil-health>

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