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FOOD SYSTEMS

Using woodchip to build soil health

Sustainable application and economics

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Sustaining and building soil organic matter (SOM) on regularly cultivated soils is a common challenge for farmers who often combine different methods to do so. Repeated compost applications alongside using legume leys and green manures can maintain or enhance SOM levels on stock-free farms but requires producing and composting on-farm (taking up space and time) or sourcing externally (costly and unsustainable). Using woodchip produced from tree and hedge management is an alternative; either composted or applied fresh as Ramial Chipped Wood (RCW). When used at an appropriate phase in a crop rotation it can increase SOM, water holding capacity and soil nutrient levels.

The ORC led the WOOdchip for Fertile Soils project to investigate using RCW as a sustainable source of organic matter for annual arable and horticultural production, encouraging farmers to manage woody elements on the farm as part of a whole farm system. Observations and results from 3 years of on-farm field trials are outlined in technical guides and include a focus on logistics and economics - see Further reading 2:

Freshly turned woodchip compost

- Farmers may choose RCW over compost when unable to produce compost, available compost or storage space is lacking, and / or they want to be input self-sufficient.
- Coppicing and chipping become cheaper per unit as volume increases and using larger more efficient machines becomes viable, but the scale of larger farming enterprises often creates less flexibility to change and adapt, ruling out doing things by hand or with smaller machines.
- RCW often makes most economic sense:
  - when coppicing to rejuvenate an old hedgerow
  - where local woodchip supply is limited, costly and/or quality cannot be assured
  - where hedge / tree management for logs produces brash not otherwise used.

Although both RCW and compost add to the SOM, they have different effects on the soil and can be used in a complimentary way.

FURTHER READING

1. Presentation by participatory trial farmer: tinyurl.com/2c3yk6ju
2. Westaway (2020) tinyurl.com/ushrkcdc
3. Project page on Agricology: tinyurl.com/4w5trs8w
4. ORC Bulletin 130, pp. 6-7: tinyurl.com/5esp9hem

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