



Amendments and Bulkers

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From a composting perspective:

- An **amendment** may be any material used to modify moisture, structure (porosity), pH or the C:N ratio of incoming feed material. Amendments can thus include sawdust, woodchip, bark, paper, cardboard or even lime and urea.
- A **bulker** is a material that is added specifically to improve the structure or porosity of the waste. A bulker is therefore normally woodchip, bark, shredded wood or woody green-waste (or indeed plastic or inorganic media).
- It is important to differentiate between a bulker (such as woodchip) and amendment used for moisture adjustment (such as cardboard, paper or sawdust) as the latter do little to improve structure. Some materials, however, can fulfil a combined roll.

Bulker materials for moisture and structure

In order to provide structure and have the ability to adsorb moisture a bulker must consist of a range of sized particles. Ideally 50-70% of particles should be between 20-100mm along the longest axis and 20-30% less than 20mm. With the HotRot system, no material should exceed 150mm in its longest axis.



Ground waste timber – key approx. 7cm long



Chipped wood waste – similar to previous image

Both the materials above have a good range of particle sizes. Bark is another excellent material but as it is softer it will tend to breakdown more during the composting process. Hardy woody materials, as above, may be more resistant to breakdown and thus may be more easily screened from the compost and recycled through the process.



Shredded bark – up to 100mm long
but only a few millimeters thick is a good bulker

The bark as shown in ‘Bulker for structure only’ is also ideal but the effect of leaving this material in the rain is shown.

These materials **must be kept dry and undercover prior to use.**

Bulker for structure only

Wood chip and bark can sometimes be graded or screened. In these cases, many of the fines are removed. This can be advantageous where structure is lacking but moisture is close to being acceptable.



Decorative bark chip – may be expensive



Wood chip, more blocky and uniform than shredded material



Screened wood waste such as this can be recovered from the compost product

Amendments for Moisture only

The following materials can be used to adsorb moisture and their use with smaller quantities of structural bulkers with very wet wastes can be beneficial. Excess sawdust, cardboard and paper can result in excessively high C:N ratios that retard the composting process.



Sawdust is very fine but great for absorbing moisture



Shredded cardboard can make up to 10-15% of feedstock.



Straw bedding should be less than 200mm long

It is not necessary to shred cardboard as in the second photo above but by doing so you reduce its tendency to clump together when wet. Straw (photo directly above) is also best shredded or chopped to less than 200mm long.

Unsuitable Bulker

Material that is too large or too chunky (such as unshredded timber offcuts) is unlikely to perform well as a bulker and may cause damage to feed and discharge equipment. Chunky materials tend to also have poor surface morphology for absorbing moisture.



Wood blocks 50-150mm in size.



Oversized shredded timber >50mm in size.



Sawn timber off-cuts 10-20mm wide x >50mm long.