

Useful Reusing - Tyre Batteries

- Using chipped wood and tyres to heat a polytunnel



Used tyres are in plentiful supply and we find them very useful at Windmill. There are some provisos though. Tyres should be intact, with no areas that seem to be crumbling or cracked. This is because they contain cadmium, a poisonous metal, along with a variety of other chemicals that you wouldn't want to eat. Don't let that scare you though - when tyres are new, they degas some volatile chemicals, but by the time they are worn, these are largely gone or trapped by an oxidised layer. A small amount of cadmium comes out of the tyre as dust as the tyre wears, but when the tyre is intact, it should stay put. If the tyre begins to break up, there is a theoretical contamination risk, so that's the time to seal it in the wall of a building or get it officially disposed of. For the same reason, we wouldn't use ground tyres as path covering in the allotment. If you want more information on potential contaminants from tyres in allotments have a look here: <https://www.thespruce.com/are-tire-gardens-safe-growing-veggies-848043>



The "Tyre Battery" was a name we coined for an experiment we did. We did it because we noticed that the wood-chip pile outside the allotment heats up in winter to such an extent that it thaws out cold feet if you stand in it. As you can see on this picture, we really did use it for that, and this class of children from Robert Shaw Primary School were very happy to make use of the heat after a very cold morning's hedge planting. We thought using composting wood-chip would be less risky for the polytunnel than a manure-based hot-bed heating which might not smell especially wonderful in an area we have to use for cold and wet weather accommodation.



We first placed some plastic on the ground, then a tyre. The plastic was to stop too much fresh wood chip being mixed into the topsoil of the polytunnel as it could reduce the nitrogen getting to plants later in the year. This was filled with fresh wood chip which also contained some green leaves. We mixed in a little soil to add microbes and moistened the wood chip.

We put on another tyre and filled this too, making sure to push the wood chip into the sides of the tyre, and again moistened it and added soil. We repeated this with a third tyre, and then created another pile next to the first. Putting a plank on the two piles made a shelf that we could use for putting seed trays on to stay warm. Over a few weeks,

the tyres did heat up, being often warm to the touch, but less than we hoped, so we also added some urine, which seemed to help, and fortunately didn't cause the pile to smell. The winter wasn't especially cold, so it is difficult to know how well these would have worked to keep the polytunnel frost-free, but we did find it warmer than expected. We probably should experiment with different wood-chip types and mixes, and more aeration, but we think this method is worth trying again.

