

Compost produced from plant waste containing lignocellulose



compost • soil improvement material • microbiological material produced on a biochar

Key facts

- **Product Category:** PFC 1 Solid organic fertilizer
- **Input material:** microbiological material produced on a biochar carrier, plant biochar, plant stem residue, stable horse manure
- **General appearance:** earthy substance rich in humus
- **Nutrient Content (N-P-K %):** 0.70 – 0.30 – 0.40. Organic matter content: 69%
- **Product status:** prior to market introduction
- **Geographical area:** EU27, UK, USA, Australia and Japan



Summary

Lignocellulosic waste can be efficiently composted and thereby produce a crop-enhancing material. Composting is the most appropriate method of microbiological treatment of lignocellulose-containing plant residues and stable horse manure. In the composting process, in the presence of the appropriate nutrients (nitrogen and phosphorus), lignocellulose derivatives (straw, energy grass, hay and grass residues) are broken down using a lignocellulose/lignin-degrading fungal strain. Using an innovative solid-phase fermentation process, we produce the microbiological preparation from the fungal strain having an efficient lignocellulose/lignin-degrading ability, which promotes the transformation of stable horse manure containing lignocellulose into effective compost material. During solid fermentation, plant biochar is used as a carrier of the microbiological material. The compost product can be used as a plant nutrient. The microbiological material containing the lignocellulose/lignin degrading fungal strain produced by solid fermentation can also be applied directly to the soil. Applying it to farmland after harvesting can promote the breakdown of lignocellulose containing plant- and stem residues and thus their transformation into biofertilizer in the soil, which can lead to an improvement in soil quality and a decrease the number of plant pathogenic fungi, which are otherwise able to overwinter on the residues and then generate new infections the following year. Solid fermentation is specially used as a microbial soil inoculant, as well as inoculant for the preparation of controlled organic composts, where the special lignocellulose/lignin degrading fungus effectively promotes the breakdown of lignocellulosic materials. The recycling of plant residues containing lignocellulose as compost, biofertilizer, and biotechnological carrier material contributes to the circular utilization of plant biomass.

How to use

- **Type of farming:** organic, low input, conventional
- **Cultivation methods:** open field, greenhouse
- **Recommended crops:** fresh vegetables and strawberries, permanent crops (fruit trees), grapes
- **Application doses:** 20-30 t/ha

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