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To be self-sufficient in bio-inputs.

DATE
22/10/2026

Worm castings

Biopreparation type: Soil conditioners • Preparation method: Other • Commercialized bio-input

INGREDIENTS

For a 1 m × 7 m bed: 1 tonne of pre-composted organic waste (herbivore manure, crop residues, straw, vegetable kitchen scraps). 7 kg of red wiggler worms (*Eisenia fetida*), i.e. about 2 kg or 2,500 worms per square metre. Unchlorinated water, as much as needed to keep the bed moist.

PREPARATION PROCESS

Pre-composting: 1) Build a pile by alternating layers of straw or stubble (5–10 cm), manure (5–20 cm) and vegetable kitchen scraps, watering each manure layer, up to 80–120 cm high. 2) The pile heats up within 2 or 3 days (40–50 °C or more): turn and water it each time it goes above 35–40 °C. 3) The feed is ready when it stays at ambient temperature, with a pH of 6–8 and 70–80 % moisture. 50-worm test: put 50 adult worms in a 30 × 30 × 15 cm box with 8–10 cm of moist feed; if they are all alive after 24 hours, the feed is suitable. Bed: 4) Build beds 1 m wide, 20–40 cm high and as long as needed, with a 2–5 % slope to collect the leachate, in the shade, roofed and protected from wind and animals. 5) Spread 10–15 cm of feed and place the worms in small heaps across the bed, covered with a little material. 6) Water to keep 80 % moisture (squeeze test: only about three drops should fall). 7) After one month, add a 5–8 cm layer of feed every two weeks, for 4 to 12 months. Harvest: 8) Stop feeding for a week, then lay a net or burlap sack with fresh feed on the bed: within 5 to 7 days the worms move up into it and can be moved to another bed. 9) Stop watering, loosen the castings, sieve them and store them at 30 % moisture.

TOOLS AND EQUIPMENT

Tape measure, string and stakes. Bricks, blocks, boards or mesh for the beds. Tarpaulin or thick plastic if the floor is not concrete. Shovels, fork and hoe. Net or burlap sacks. Sieve. Compost thermometer. Roof or shade cloth. Container for the leachate.

TIPS

Use unchlorinated water. Do not use manure from recently dewormed animals, nor from dogs or cats. Keep the bed between 16 and 22 °C, sheltered from sun, wind and rain. Plant residues take 30–60 days to become ready feed, manures 15–30 days. Buy worms from a reliable breeder and check that they are *Eisenia fetida*. Store the castings in sacks, in a cool, dark, closed place, below 30 % moisture, labelled with the date.

RESULTS DESCRIPTION

A very stable organic fertilizer, rich in humified organic matter and microbial life, that improves soil structure, water-holding capacity and nutrient availability for plants.

PRODUCT OBTAINED

Dark, crumbly, spongy material, pleasant to the touch, that does not stain and smells of wet forest soil.

SOURCE / REFERENCE

SADER and INIFAP (2021). Manuales prácticos para la elaboración de bioinsumos, no. 14: Humus de lombriz (in Spanish). Technical Support Strategy, Mexican Ministry of Agriculture.; Picado, J. and Añasco, A. Preparación y uso de abonos orgánicos sólidos y líquidos (in Spanish). Agricultura Orgánica series, CEDECO (Costa Rica). — Recipe written in our own words.