

Effective composting of empty fruit bunches using potential trichoderma strains

Abstract

Oil palm fibres are easy to degrade, eco-friendly in nature and once composted, they can be categorized under nutrient-enriched biocompost. Biocompost is not only a good biofertilizer but also a good biocontrol agent against soil-borne pathogens. In this research, experimental works on the composting of empty fruit bunches (EFB) from the oil palm industry were conducted using two potential *Trichoderma* strains. Analysis of pH initially found the soils to be slightly acidic. However, after composting, the soils were found to be alkaline. *Trichoderma* propagules increased by 72% in the soils compared to other fungi. Soil electrical conductivity was found to be 50.40 $\mu\text{S}/\text{cm}$ for compost A, 42.10 $\mu\text{S}/\text{cm}$ for compost B and 40.11 $\mu\text{S}/\text{cm}$ for the control. The highest C:N ratio was obtained for compost A at 3.33, followed by compost B at 2.79, and then the control at 1.55. The highest percentages of nitrogen (N), phosphorus (P), and potassium (K) were found in compost A (0.91:2.13:6.68), which was followed by compost B (0.46:0.83:5.85) and then the control (0.32:0.26:5.76). Thus, the biocomposting of oil palm fibres shows great potential for enhancing soil micronutrient, plant growth performance, and crop yield production.