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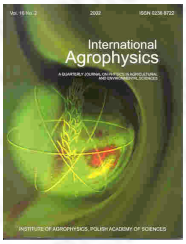

International Agrophysics
publisher: Institute of Agrophysics
Polish Academy of Sciences
Lublin, Poland
ISSN: 0236-8722

vol. 22, nr. 3 (2008)

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Selected physical properties and microbial activity of earthworm casts and non-ingested soil aggregates

(get PDF)

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vol. 15 (2001), nr. 3, pp. 181-184

abstract Some physical properties and microbial activity of the casts of the earthworm Aporrectodea caliginosa were investigated and compared with the properties of aggregates from the bulk soil of the Ap horizon (Orthic Luvisol, FAO) of silty loam texture. The water stability of 20-day-old 8-9 mm aggregates from casts, as determined by the drop impact method, was significantly increased compared with those of 3-day-old casts and natural aggregates. The rate of wetting of the natural aggregates was substantially greater than that for the cast aggregates. The values of the crushing strength of aggregates from casts and natural aggregates were not significantly different. The populations of bacteria, streptomyces and fungi in earthworm casts increased with the ageing of the casts. The increased water stability of cast deposits can be an important factor in reducing the high susceptibility to erosion of the soil studied.

keywords earthworm casts, soil aggregates, stability, wetting, microbial population