

Soil mechanics and soil management

Selected recent publications

- Arrázola Vásquez E.M., Larsbo M., Capowicz Y., Taylor A., Herrmann A.M. & Keller T., 2024. Estimating energy costs of earthworm burrowing using calorimetry. *European Journal of Soil Biology*, 121, 103619.
- Colombi T., Pandey B.K., Chawade A., Bennett M.J., Mooney S.J. & Keller T., 2024. Root plasticity versus elasticity – when are responses acclimative? *Trends in Plant Science*, 29, 865-864.
- Torres L.C., Nemes A., ten Damme L. & Keller T., 2024. Current limitations and future research needs for predicting soil precompression stress: A synthesis of available data. *Soil & Tillage Research*, 244, 106225.
- Sjulgård H., Keller T., Garland G. & Colombi T., 2023. Relationships between weather and yield anomalies vary with crop type and latitude in Sweden. *Agricultural Systems*, 211, 103757.
- Arrázola-Vásquez E., Larsbo M., Capowicz Y., Taylor A., Sandin M., Ileskog D. & Keller T. 2022. Earthworm burrowing modes and rates depend on earthworm species and soil mechanical resistance. *Applied Soil Ecology*, 178, 104568.
- Sjulgård H., Colombi T., Keller T. 2022. Spatiotemporal patterns of crop diversity reveal potential for diversification in Swedish agriculture. *Agriculture, Ecosystems and Environment*, 336, 108046.

More recent publications are available here

2024:

- Alakukku L., Heitman J., Horn R., Jansen B., Keller T., McKenzie B.M., Neollenmeyer E., Peng X. & Wendroth O., 2024. Soil & Tillage Research Editorial. *Soil & Tillage Research*, 237, 105984.
- Arrázola Vásquez E.M., Larsbo M., Capowicz Y., Taylor A., Herrmann A.M. & Keller T., 2024. Estimating energy costs of earthworm burrowing using calorimetry. *European Journal of Soil Biology*, 121, 103619.
- Colombi T., Pandey B.K., Chawade A., Bennett M.J., Mooney S.J. & Keller T., 2024. Root plasticity versus elasticity – when are responses acclimative? *Trends in Plant Science*, 29, 865-864.
- Garland G., Koestel J., Johannes A., Heller O., Doetterl S., Or D. & Keller T., 2024. Perspectives on the misconception of levitating soil aggregates. *SOIL*, 10, 23-31.
- Heller O., Di Bene C., Nino P., Huygebaert B., Arlauskienė A., Castanheira N.L., Higgins S., Horel A., Kir A., Kizeková M., Lacoste M., Munkholm L.J., O'Sullivan L., Radzikowski P., Rodríguez-Cruz M.S., Sandén T., Šarūnaitė L., Seidel F., Spiegel H., Stalenga J., Uusi-Kämppe J., Vervuurt W., Keller T. & Vanwindekens F., 2024. Towards enhanced adoption of soil improving management practices in Europe. *European Journal of Soil Science*, 75, e13483.
- Jarvis N., Coucheney E., Lewan L., Klöffel T., Meurer K.H.E., Keller T. & Larsbo M., 2024. Interactions between soil structure dynamics, hydrological processes, and organic matter cycling: A new soil-crop model. *European Journal of Soil Science*, 75, e13455.

- Martínez I., Stettler M., Lorenz M., Brunotte J., Weisskopf P., Sommer M. & Keller T., 2024. Immediate effects of wheeling with agricultural machinery on topsoil gas transport properties and their anisotropy. *Soil & Tillage Research*, 241, 106126.
- Ten Damme L., Calleja-Huerta A., Munkholm L.J., Schjønning P., Keller T., Lamandé M., 2024. Traction modifies the contact area and the vertical and horizontal stress distributions beneath the tyre. *Soil & Tillage Research*, 244, 106214.
- Torres L.C., Nemes A., ten Damme L. & Keller T., 2024. Current limitations and future research needs for predicting soil precompression stress: A synthesis of available data. *Soil & Tillage Research*, 244, 106225.
- Tschanz P., Walter A., Keller T. & Albrecht M., 2024. A review of soil tillage impacts on ground-nesting wild bees – mechanisms, implications, and future research perspectives. *Agriculture, Ecosystems & Environment*, 375, 109224.

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- Bahrami M., Naderi-Boldaji M., Ghanbarian D. & Keller T., 2023. Discrete element modelling of stress propagation in soil under a rigid wheel in a soil bin: a simulation of probe inducing stress deviation and wheel speed. *Biosystems Engineering*, 230, 159-170.
- Blomquist J., Englund J.-E., Sjöberg C., Kårhammer J., Svensson S.-E., Pettersson E., Keller T. & Berglund K., 2023. Structure liming reduces draught requirement on clay soil. *Soil & Tillage Research*, 231, 105703.
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- Schjønning P., Lamandé M., De Pue J., Cornelis W.M. & Labouriau R. & Keller T., 2023. The challenge in estimating soil compressive strength for use in risk assessment of soil compaction in field traffic. *Advances in Agronomy*, 178, 61-105.
- Sjulgård H., Keller T., Garland G. & Colombi T., 2023. Relationships between weather and yield anomalies vary with crop type and latitude in Sweden. *Agricultural Systems*, 211, 103757.
- Tschanz P., Koestel J., Volpe V., Albrecht M. & Keller T., 2023. Morphology and temporal evolution of ground-nesting bee burrows created by solitary and social species quantified through X-ray imaging. *Geoderma*, 438, 116655.
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- Walder F., Büchi L., Wagg C., Colombi T., Banerjee S., Hirte J., Mayer J., Six J., Keller T., Charles R. & van der Heijden M., 2023. Synergism between production and soil health through crop diversification, organic amendments and crop protection in wheat-based systems. *Journal of Applied Ecology*, 60, 2091-2104.

2022:

- Arrázola-Vásquez E., Larsbo M., Capowicz Y., Taylor A., Sandin M., Ileskog D. & Keller T. 2022. Earthworm burrowing modes and rates depend on earthworm species and soil mechanical resistance. *Applied Soil Ecology*, 178, 104568.
- Bahrami M., Naderi-Boldaji M., Ghanbarian D. & Keller T. 2022. Simulation of soil stress under plate sinkage loading: A comparison of finite element and discrete element methods. *Soil & Tillage Research*, 223, 105463.
- Barbosa L.A.P., Gerke K.M., Munkholm L.J., Keller T., Gerke H.H. 2022. Discrete element modeling of aggregate shape and internal structure effects on Weibull distribution of tensile strength. *Soil & Tillage Research*, 219, 105341.
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- Ding Z., Munkholm L.J., ten Damme L. & Lamandé M. 2022. Vertical and horizontal soil stresses beneath a modern combine harvester: Measurements and modelling. *Land Degradation and Development*, 33, 892-903.
- Hosseinpour-Ashenaabad R., Keller T., Larsbo M. & Hallett P.D. 2022. Dual-platform micromechanical characterization of soils: Oscillation shear rheometry and spherical indentation. *Soil & Tillage Research*, 223, 105467.
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- Romero-Ruiz A., Linde N., Baron, L., Breitenstein D., Keller T. & Or D. 2021. Lasting effects of soil compaction on soil water regime confirmed by geoelectrical monitoring. *Water Resources Research*, 58, e2021WR030696.
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