

عنوان مقاله:

Soil aggregation indexes and chemical and physical attributes of aggregates in a Typic Hapludult fertilized with swine manure and mineral fertilizer

محل انتشار:

مجله بین المللی بازیافت مواد آلی در کشاورزی، دوره 10، شماره 1 (سال: 1400)

تعداد صفحات اصل مقاله: 17

نویسندگان:

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

Soil Science Post-Graduation Program, Soil Science Department, Federal University of Lavras (UFLA), Lavras, - - - MG, Brazil

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

Environmental Engineering Post-graduate Program, Sanitary and Environmental Engeneering, UFSC, - - - Florianópolis, SC, Brazil

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

Agroecosystems Post-Graduation Program, Rural Engineering Department, Federal University of Santa Catarina - - - (UFSC), Florianópolis, SC, Brazil

خلاصه مقاله:

Purpose The objective was to evaluate the effects of mineral fertilizers and swine manure fertilization on soil aggregation indexes and on chemical and physical attributes of aggregates in Typic Hapludult managed under minimum tillage system. **Method** Experiment was implemented in ۲۰۱۳, in southern Brazil. The treatments were control, mineral fertilization (MF), swine manure compost + MF (SMC+MF); pig slurry + MF (PS+MF); PS to supply N for maize and black oat (PS۱۰۰). In May ۲۰۱۵ and ۲۰۱۶, undisturbed soil samples were collected to obtain soil aggregates. Aggregates stability was evaluated through the mean weight diameter (MWD) and mean geometric diameter (MGD) indexes and aggregate distribution by diameter classes. In macroaggregates, total organic carbon (TOC), total nitrogen (TN), clay flocculation degree (CF%) and ΔpH were evaluated. **Results** The use of swine manure, associated or not to MF, increases TOC and TN contents in soil aggregates in ۶۷.۰۲ and ۱۲۵.۸۲%, respectively, for SMC+MF

treatment. However, it was not efficient in improving soil physical attributes, reducing soil aggregation indexes, mainly in the ۵-۱۰ cm layer, by the decreased values of MWD and MGD. This result corroborates with the increase in microaggregates in all treatments. This was a result of the negative ΔpH values and the increased CF%. Conclusion Despite the increase in organic matter contents observed in this study, this was not enough to guarantee an improvement in soil physical attributes over ۴ years. These results show that management must be supported by several conservationist techniques in order to have soil quality

کلمات کلیدی:

Organic fertilization, Macroaggregates, Mean geometric diameter, Organic carbon, Clay flocculation

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1391988>

