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### ABSTRACT

#### **Micromorphological evidences of pedogenetic changes due to anthropic action in Amazonian Dark Earth in the Central Amazon, Brazil**

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Soils containing archaeological materials and deep anthropic soil horizons found in the Amazon region are locally denominated as Amazonian Dark Earth (ADE). Despite being extensively studied in recent years, some micromorphological features and its interpretations of these soils are still not well known. This study aimed to use micromorphology to assess the formation processes of ADE in the municipality of Iraduba, Brazil. Undisturbed soil samples were taken from two areas of ADE (preitic horizon) and from a non-anthropic pedon. Micromorphological and SEM-EDS analyses were carried out. The coarse material of the preitic horizon consists predominantly of quartz, nodules, ceramics and charcoal fragments, and the fine material is organo-mineral. There is a direct relationship between the color of preitic horizons and quantity of charcoal fragments. ADE presents granular microaggregates of geochemical and zoogenetic origin. Biological channels and packing voids are higher in ADE. Degradation of iron nodules is intensified in preitic horizons, promoting a reverse pedogenic process releasing clay particles to the soil. The very frequent illuvial clay coatings with strong occurrence on the ceramic fragments suggest a current process of intense argilluviation only in ADE. The following processes occurred in ADE genesis: i) addition of organic residues and ceramic artifacts (cumulization) with the use of fire; ii) mechanical action of humans, roots and macrofauna (bioturbation); iii) deeper melanization as a result of bioturbation; iv) intensification of both argilluviation and petroplinthite degradation.

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