



Occurrence, micromorphology, and soil chemistry of Fuchserden (Rhodic Arenosols) on sandy deposits in northeastern Germany

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In the sandy deposits from the Late Pleistocene in the Northern European lowlands, the local appearance of red subsoils emerges the question of their formation and palaeoenvironmental significance. According to the WRB this soil is classified as Rhodic Arenosols, but in the German Guidelines for Soil Mapping this soil is still unconsidered because the age and genesis is unclear. Due to the intense red subsoil, the working title of this soil is 'Fuchserde'. Whereas rubefication is a characteristic feature of soils in regions with warm and dry summers like in the Mediterranean, the occurrence of red subsoil horizons containing hematite in soils in northeastern Germany is not an indicator for tropic or Mediterranean climate conditions. Already the appearance of Fuchserden on sandy deposits from the last glaciation objects earlier theories that consider these soils as a relictic soil formation from the last interglacial or even the Palaeogene or Neogene. To characterize the genesis of the Fuchserden, we focused on four different study sites in northeastern Germany. We present our findings from soil micromorphology and the identification of the iron(hydr)oxides by FTIR. Our results give new insights on the development of the Fuchserden and the importance of lateral input of iron for their genesis.