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Soils on historic charcoal hearths – chemical properties and terminology

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Charcoal hearths are a unique archive for the long term interaction between biochar, soil development and plant growth. Charcoal as raw material was crucial for the production of iron in iron works and hence numerous charcoal hearths can be found in the forests near historic iron works in Europe as well as the Eastern United States. Charcoal hearths are round to elliptical forms often around 10 m in diameter, and consisting of a several decimeter thick layer containing charcoal fragments, ash, and burnt soil. We studied the soil chemistry of 24 charcoal hearths and compared them to the surrounding ‘natural’ soils in Litchfield County, Connecticut. The thickness of the organic rich horizons on the charcoal hearths and their carbon content is remarkably higher than in the surrounding topsoils. The wide distribution of charcoal hearths, their usually high quantity, and their occurrence in different ecosystems underlines their importance for further pedological research.