

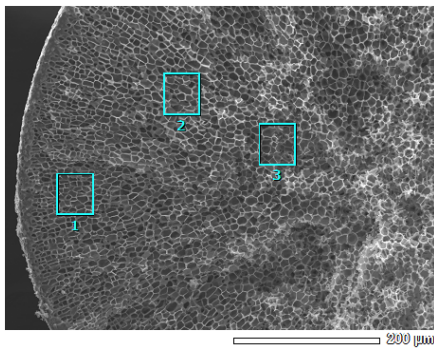
## Aluminum accumulation and carbon decomposition in sclerotia of *Cenococcum geophilum* in low pH forest soils

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The importance of soil organic matter especially of microbial carbon in rhizosphere has recently been discussed in many studies regarding global carbon dynamics. Sclerotia of ectomycorrhizal fungus *Cenococcum geophilum* can be preserved in forest soils for long period.[1] In our previous studies, we reported a characteristic concentration of aluminum in sclerotia.[2] In this study, we examined Al and carbon content in *Cg* sclerotia found from low pH forest soils, to discuss their characteristics and behavior as soil organic matter during their persistence time.



**Figure 1:** SEM-EDX analysis on the transverse cell wall of sclerotium..

Through SEM-EDX measurement of Al and carbon contents in the transverse cell wall (Fig. 1) and dating of AMS <sup>14</sup>C ages of sclerotia, it was suggested that Al content of sclerotia at initial stage might be low. However, in some cases, there was a possibility that sclerotia contained relatively high amount of Al from its initial stage, or, its Al content increased due to decomposition of carbon of its cell wall. Al content in sclerotia was likely to be regulated by soil chemical properties and by microbial activity to dissolve metal elements from soil minerals.

[1] Trappe (1964) *Lloydia* **27**, 100-106. [2] Watanabe *et al.* (2001) *Soil Sci. Plant Nutr.* **47**, 411-488.