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Chemical composition of silica phytoliths. Comparison of different isolation methods.

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The silica phytoliths, also called biogenic opals, are formed in many plant species. It has been found that information on their chemical composition is limited, except for several major elements. Comparison of different methods for isolation of silica phytoliths from plant material was performed in this work. Dry ashing and acid digestion were used and their influence on chemical composition of the prepared samples was studied. Barley (Hordeum vulgare L.) was used as a model plant and the phytoliths were extracted from different parts of the plant body – stems, leaves, awns. The analysis of the elemental composition was performed by instrumental neutron activation analysis in both short and long term irradiation modes which allowed determination of more than 30 major and trace elements.

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