

## Metabolites and tolerant microflora in substrates with the content of white phosphorus 0.1%

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### Abstract

White phosphorus undergoes metabolic oxidation to water-soluble products – hypophosphite and phosphate, as is established by <sup>31</sup>P NMR method. Further metabolism of these compounds should result in harmless phosphate formation, what opens perspectives for practical application of this method. In our previous works we have for the first time obtained the cultures of microorganisms, developing resistance to white phosphorus. At that the attention was mainly paid to P<sub>4</sub> mass concentration 0.01%, since just at that concentration white phosphorus undergoes biodegradation. We have also observed microorganisms in substrata with even higher concentration of white phosphorus, however they have not been characterized. In the present work we isolated and characterized bacteria from wastewater with white phosphorus mass content 0.1%. Sulfate reducers, being pure anaerobics, were shown to be strongly suppressed by white phosphorus compared to less specialized microorganisms.