

## Cultures of Basidiomycetes as the Object of Homeopathic Experiments

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Experimental experience with infinitesimal doses of toxic agents has stimulated the scientific phenomena of hormesis and homeopathy since the early years of the 20th century. Various physical, botanical, zoological, medical, and biological experiments demonstrated the existence of real potency in very small doses of many serious poisons, acting against their toxic character. This "vital force" of microdilutions is now examined for its possible use in averting the harmful results of human activity in the natural environment.

The main aim of this article was to determine whether hormesis could be observed in the cultures of Basidiomycetes exposed to abiotic factors such as high concentrations of heavy metals or other toxic substances. Among them cadmium in amounts ranging from 10 to 25 ppm was used. The cultures were grown with or without the small doses of metals prepared in various dilutions. The concentration of  $10^{-5}$  ppm of Cd(II) distinctly protected the cells of *Abortiporus biennis* (Bull.) Sing., *Trametes versicolor*

(L.: Fr.) Lloyd, and *Cerrena unicolor* (Bull.) Murr. against the full quantity of cadmium, which caused the decay of their mycelia. The activity of some enzymes important for these mushrooms was altered when low doses of cadmium were used.

In other experiments alterations in the ultra-weak luminescence of *Bjerkandera fumosa* (Pers.) P. Karst. cells exposed to a 2% concentration of formaldehyde were observed after introduction of  $10^{-6}$  or  $10^{-10}$  mg of formaldehyde, which resulted in renovation of cell vitality.

More than a hundred years ago Schultz observed the effect of low doses of some toxic agents on increased levels of respiration in yeast cultures. Our experiments are consistent with the conclusions of other authors that hormetic activity is a specific cellular response and Basidiomycetes can be used as a good example for demonstration of the Arndt-Schulz law concerning the amelioration of various stress conditions.