Azotobacter AS A MERCURY BIOACCUMUlATOR

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Abstract

Mercury is the most toxic heavy metals compared with other heavy metals. Some bacteria are resistant to mercury. One of mercury resistant bacteria genus and able to accumulate of mercury is *Azotobacter*. *Azotobacter* is free-living nitrogen fixing bacteria which abundant in rhizosfer area of agricultural land and it is EPS producing bacteria that can serve as chelating metals.

This research aims to get *Azotobacter* isolates resistant to mercury $HgCl_2$, and measure the ability of mercury biaccumulation. Isolation of *Azotobacter* by selective *Azotobacter* media, resistance test by streak at slant agar, and bioaccumulation ability measured by atomic absorption method and vaibility test using *pour plate* method. Observed data analyzed by ANOVA, continued by Least Significant Difference (LSD) test, Both test at level 5 %.

Three Azotobacter isolates from eco urban farming ITS land are resistant until 20 mg/L of $HgCl_2$ which is A5, A6 and A9. The highest efficiency bioaccumlation on exposure 5 mg/L $HgCl_2$ is A5 (89%) and A9 (87%).

Keywords : *Azotobacter*, bioaccumulator, mercury, resistance test.