

ISOLATION OF AN ACID TOLERANT ALUMINUM PRECIPITATING BACTERIUM FROM A MAN- MADE WETLAND

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An acid tolerant, aluminum-precipitating bacterium was isolated from a wetland site (VAPCO) in Westmoreland County, Pennsylvania. Enrichments were made on a filter sterilized medium containing yeast extract and aluminum potassium sulfate at pH 4.2. From the enrichment, a pure culture was isolated on the above solid agar medium using standard streak plate techniques. When a pure culture of the organism was inoculated into the above liquid medium, essentially all the aluminum was precipitated within 5 days with an end pH of 4.5. The precipitate would not go back into solution if the pH was lowered to 4.2 and allowed to sit overnight. The freeze-dried precipitate contained 35% aluminum by weight. As yet, the precipitative form of the aluminum is unknown. To our knowledge this is the first case that a bacterium has been reported to precipitate aluminum. This organism might be used as an inoculum to remove toxic levels of aluminum from water.