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Effect of alkalized and acidified slurry on the growth of maize and ryegrass

Pravallika Nanneboina

University of Bonn, Germany

pravallikananneboina@gmail.com

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Abstract

Massive slurry overproduction and poor management have resulted in environmental issues in various EU regions, notably in Germany. Despite the fact that slurry is used as an organic fertilizer, the frequency with which it is produced considerably outnumbers the area of animal farms. Techniques like acidification and alkalization have been proven to reduce greenhouse gas emissions by more than 90%. We showed that one of these processes, alkalization, allows the development of nutrient-deficient (N & P-based) sustainable fertilizers from raw pig slurry, which can be utilized in large amounts on fields without having a significant environmental impact. We evaluated these two techniques on the growth of ryegrass and maize in semi-greenhouse conditions on a smaller scale. We are notable for being the first to use this alkalization technology in plants. Alkalization enhances maize but has unfavorable effects on ryegrass, which might be due to frequent cuttings, long-term fertilization effects, and slurry pH (11 & 12). In terms of reducing emissions while having no effect on plant development, alkalized and acidified slurry are preferable to mineral fertilizer, especially for maize, whereas the effect of alkalized pH on ryegrass can be studied further in the future to see if there are any additional growth responses with various pH ranges. To summarise, this strategy is suggested to farmers since it allows them to utilize these sustainable fertilizers in bigger volumes on the field without having any negative influence on the environment

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Biography

Pravallika has completed her graduation at the age of 23 years from the University of Sathyabama and postgraduation studies from University of Bonn. She has 6 years of research experience in the fields of plant biology, molecular biology, immunology, and microbiology in dealing with technical and scientific instruments. In addition, she organized international conferences, managed the event websites with creative content, and developed digital strategies (SEO) with a year of experience as a program coordinator. Moreover, she supervised two conferences for the reviewing scientific articles.

