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Exploring the Use of Inducible Nitric Oxide Synthase to Enhance Compost Nitrogen Content

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The goal of our research is to find and present new ways to introduce an inducible nitric oxide synthase to plants to better control nitrogen levels. We also looked at ways to introduce the synthase through compost. We are trying to answer the question of: Will the introduction of inducible nitric oxide synthase in the compost mixture increase the nutrient richness? Our results will indicate whether there are adequate mechanisms to introduce inducible nitric oxide synthase in compost mixtures. A literature review was conducted to look at previous methods used to introduce the inducible nitric oxide synthase (iNOS). We also looked at methods that are being used to accelerate the composting process. Lastly, we looked at any overlap between the synthase introduction methods and composting acceleration methods. The results indicated that compost acceleration can be accomplished by adding organic materials that are high in nitrogen, maintaining a stable and warmer temperature, and maintaining an aerobic process. When introducing the inducible nitric oxide synthase into the compost there is no prior knowledge that says the compost can process the synthase. The synthase will go to benefit the plants when it comes to their growth and resisting pathogens. If this application is successful, the composting industry will be able to market a more nitrogen heavy product to consumers, specifically farms.