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Cyanobacteria Magic: Cultivating Sustainable Solutions For Agriculture

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Abstract

In the dynamic realm of sustainable agriculture, attention increasingly turns to microalgae as a catalyst for positive change. These tiny organisms, prized for their renewable attributes and nutritional richness, offer a promising avenue for revolutionizing traditional farming methods. Leveraging the inherent capacity of microalgae to convert sunlight into nutrient-dense biomass through photosynthesis, a natural alternative to chemical fertilizers emerges. By cultivating microalgae, often utilizing organic waste or wastewater, proponents advocate for circular and sustainable resource management practices. Among these, Spirulina sp, a filamentous cyanobacterium renowned for its nutrient profile, takes center stage in addressing nutritional deficiencies. Harvested from Oubeira Lake and carefully cultivated, Spirulina biomass, alongside other microalgae strains, becomes integral to the development of eco-friendly agriculture fertilizers. The overarching objective of this endeavor is clear: to pioneer biofertilizers that minimize reliance on environmentally damaging chemicals, promoting the well-being of ecosystems, animals, and human health. Bloom collected from Oubeira Lake in October 2022, spirulina sp were isolated then cultured using Zarrouk's medium in a culture room at 35 ± 2C. The culture is then harvested by centrifugation, and the biomass is freeze dried then preserved at -80°C until further analysis. Spirulina biomass in addition to other microalgae strains will be used for the fabrication of the agriculture fertilizer.

Key Words: *spirulina sp., Biofertilizers, Sustainable Agriculture, chemical fertilizer, animals and environment risque*