

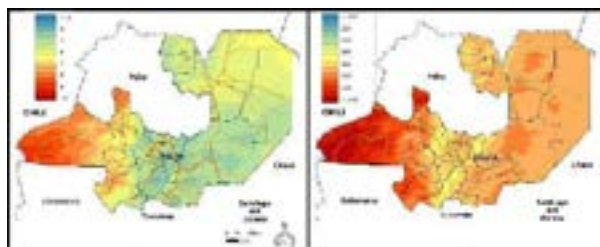
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Is the solar radiation a comparative advantage for biomass production in northern Argentina?

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Microalgae have been recognized as a resource of great interest worldwide, due to the ability to store useful chemical compounds and pigments of high industrial value in their biomass. They have regained their prominence in recent years when the production of liquid biofuels from food crops began to generate debates about the socio-environmental impacts. The photosynthetic microalgae have high efficiency and rapid growth rate, flexibility to grow in any liquid medium including effluents, higher productivity compared to conventional crops and without dependence on fertile land. These qualities make them a promising alternative for the global energy supply. The solar radiation is the factor that defines the maximum biomass production capacity of the different species. Northern Argentina, one of the 7 regions with the highest level of solar radiation (Fig.1), provides the optimal conditions for algal growth, although this advantage has not yet been sufficiently exploited. Our group has focused on performing laboratory experiments with the *Scenedesmus quadricauda*, scaling its culture and identifying management guidelines. In the lab up to a 20-liter scale, a favorable growth response has been observed at room temperature, both in the cold and warm seasons, with a growth cycle of 20 days. However, it was interesting to explore the behavior of the sp in outdoor ponds, observing whether solar radiation constituted a comparative advantage for its growth. This system is one of the most profitable, since it can be used for the treatment of wastewater from different sources with high organic load, reducing costs due to nutritional requirements of the microalgae. Added benefits for energy use could be evaluated later. Said system is planned to use as a complementary system for the sewage treatment plant in the city and therefore, the information obtained here will allow future planning.



Biography

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