

Internship with Organic Rice Production

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My Summer at the Organic Fields

Before working with Dr. Dou on his research project with organic rice, I had honestly expected much of the research to be composed of simply planting rice seeds outside with different fertilizers and waiting for the plants to grow. However, my notions were soon dispelled as I learned that the project was in reality much more complicated. The research that we conducted involved determining the nitrogen composition of the soil of various fertilizers as well as examining the bacterial microorganisms to more deeply understand the biochemical processes involved in nitrogen consuming bacteria. The first part, determine nitrogen content of the soil, turned out to be much harder than it initially sounded and involved something called the Kjedhal method which I had only read about and had previously thought was only used for analyzing proteins. . In addition, what I soon learned was that rather than tediously going by hand to perform the method on hundreds of soil samples, we simply used an automated machine which perform the method automatically and returned results with speed and precision. To actually see this method in use and for a purpose that was completely unexpected to me was very interesting. I also got to help enumerate and identify the various bacteria which lived in the soil using methods similar to, although much more advanced, methods that I had learned in the microbiology class I had been taking the month prior. Once again it was very cool seeing methods that I had learned being applied for real world applications. By participating in these research projects and sampling processes I gained a lot of knowledge about various methods of analysis as well as application of the scientific method and the use of statistics in research. Overall, my summer at the organic rice fields was a really great experience and will definitely benefit me in the future.

Acknowledgements

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Sources

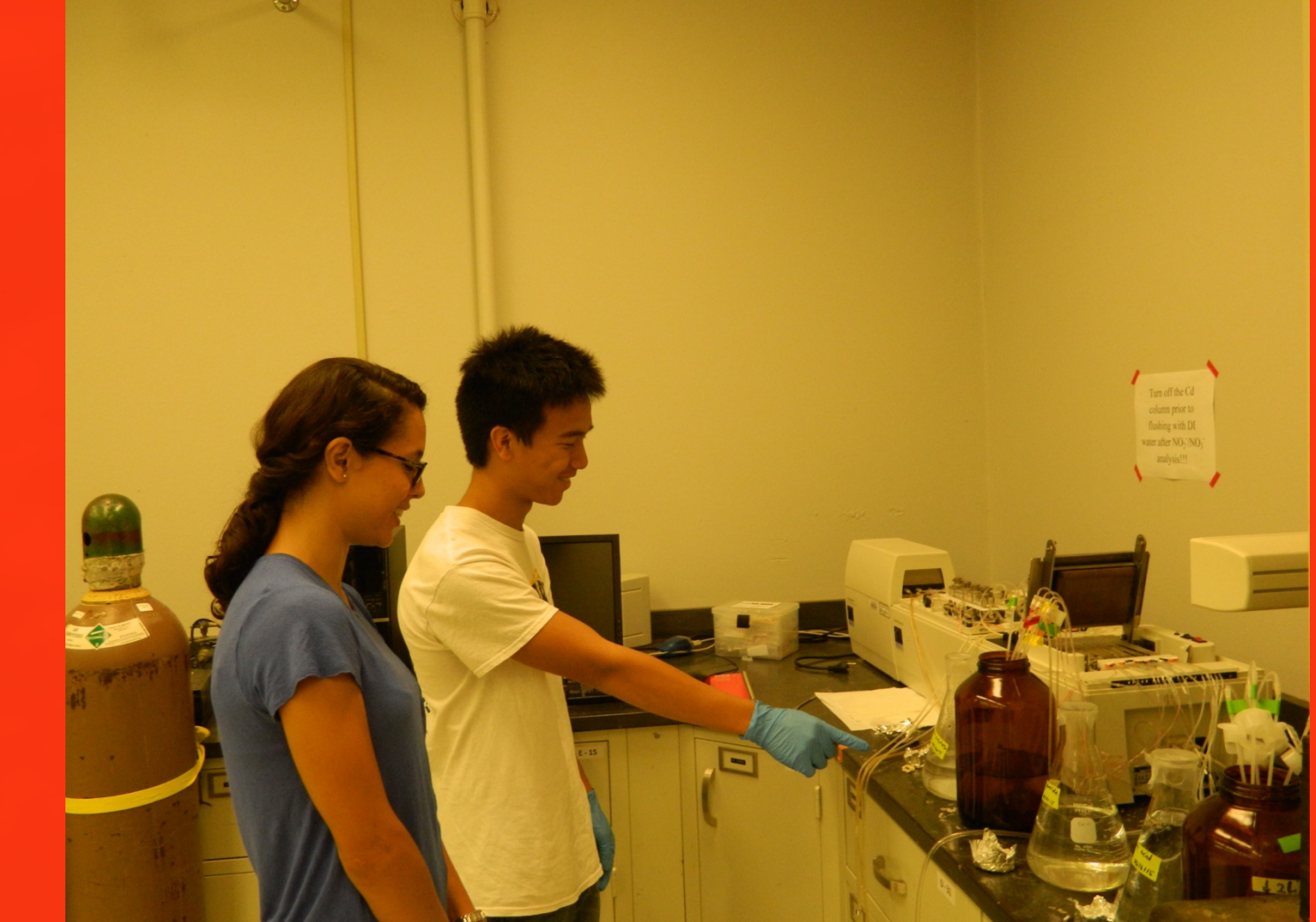
<http://www.scielo.br/img/revistas/rbcs/v35n2/a31fig01.jpg>

<http://images.tutorvista.com/content/organic-compounds/kjeldahl-s-method.jpeg>

Water Sampling



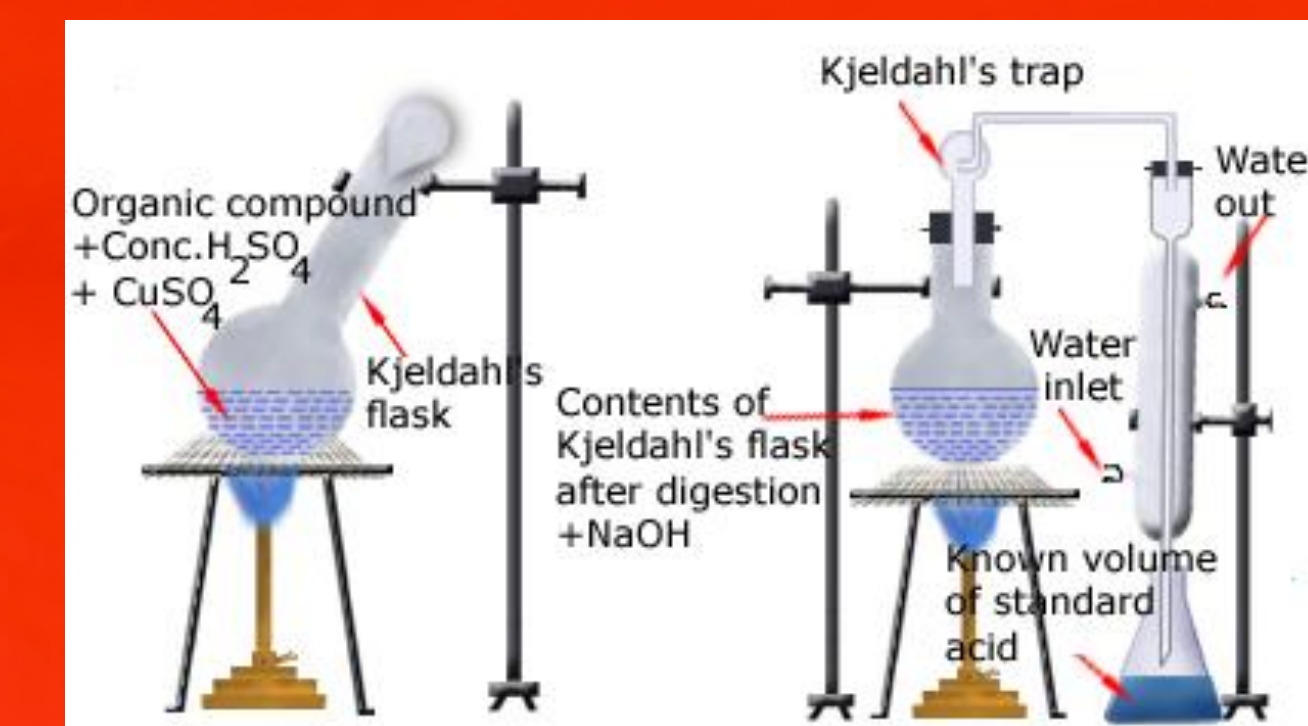
Water Sampling in green house



Looking at equipment using Kjedhal method



Equipment to determine dissolved organic content of soil.



Brief overview of the Kjedhal method used in machine above.

Gas Sampling



Gas sampling chambers



Observing student workers isolating and enumerating the number of rice pests.



Obtaining gas samples with a syringe.

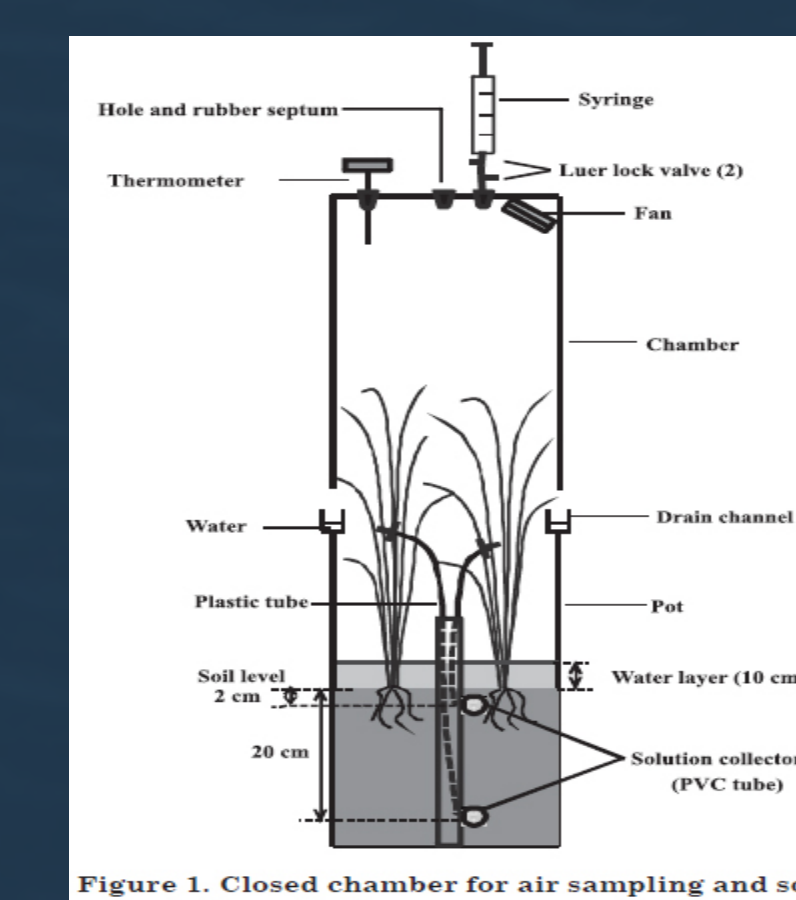


Figure showing how gas sampling takes place.