

Interface between Mathematics and Science
Teacher Professional Development Workshop
June 30, 2008

Discussion 1: An Experimental Design

Food Revolution that Starts with Rice – Dr. Norman T. Uphoff

The attached article on the work of Dr. Norman T. Uphoff appeared in the New York Times Science Section, June 17, 2008. It describes his controversial new method of growing rice. The goal of this discussion is to design a field study to test his claims. Please read the article before answering the following questions.

Each group should submit one set of answers to the preliminary questions and one field study design.

Preliminary Questions

1. Why is a global field study necessary?
2. What kind of study would be best – experimental or observational? Why?
3. What are the factors to consider in the study? Which can be controlled, and which should be randomized?
4. What confounding factors should be considered in the study?

Designing the Global Field Study

Write a one-page abstract for the design of a global field study. The goal is to produce a robust design whose results can be relied upon for the making of agricultural policy decisions, not to achieve a particular outcome. Be sure to take into account your answers to the preliminary questions.