Farming system research experiments

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In farming system, two types of researches are simultaneously carried out viz., on- station research experiments and on- farm research experiments.

On-station research experiments

- Where technology development is advanced but but not yet ready for on-farm testing, on-station experimentation may be required
- Many more treatments, complicated design and equipment can be used for the on-station research
- At station, it is easier to keep good records, evaluate multiple technologies and control the variables
- Data analysis should be kept simple and research results should be expressed in simple economic terms to be of benefit to other researchers, extension workers, farmers and policy makers

On-farm research experiments

- These types of research experiments are conducted in the farmer's fields under actual farm's environmental condition.
- On-farm research experiments involve farmers more directly in the research process and in the assessments of the research results.
- Therefore, farmers participation is the key to the innovative approach to on-farm research and the farmers are the full partners in the process of technology development
- It is usually used to demonstrate farmers the superiority of a new technology over the farmer's current practice.
- Often a researcher and an extension worker trial together to identify the best performing technology from a set of practices.
- The results of these experiments are used to modify the current practice and to identify the supporting components of the technology.
- The experiments should be conducted at several farms to bring out variations due to factors such as farm size and management style.
- Although the researcher is more interested in learning how the technology performs under farm conditions, the success of each trial can actually be measured by how many farmers adopt the new technology.
- The statistical design of the experiment depends on site-specific problems existing in different sub-systems.

- Experimental units (soil, animal, fish/pond) should be chosen carefully to reduce heterogeneity as much as possible, number of treatments should be few and number of replications should be large.
- Farmers evaluate the technology packages and adopt portion of them therefore, the suggested approach is to design packages that would permit.