

Technology Refinement Through on Farm Trials (OFT) for Wider Acceptability

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The transfer of research recommendations generated in experimental stations under controlled environment to real farming situation has been one of the toughest tasks of extensionists. In most of the cases the farmers reject research recommendations as they hardly solve their problems. While designing the research, researchers hardly consider the view of extension workers and farmers, which ultimately leads to rejection of recommendations.

Two world bank funded projects namely National Agriculture Technology Project (NATP) and U.P.Diversified Agriculture Support Project (UPDASP) are innovating idea of farming situation based Research with active involvement of farmers through On Farm Trials (OFT) for solving the specific problems of particular farming situation. In most of the cases research is being done for big farmers while majority of farmers belong to small production systems. The idea behind OFT is to respect the farmers understanding of knowledge of existing farming system which help in designing trials and solving problems. The OFT takes into account not only technical but also socio-economic and cultural circumstances of farmers of that farming situation where it is being carried out.

On Farm Trials (OFT) is the best way of refinement of generalized recommendations into real farming situation technology for wider adoptability. On Farm Trials (OFT) is an approach of adoptive research conducted at farmers field with their active participation under their management within their farming system perspective. The objective of OFT is to develop location specific (Farming Situation Spe-

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cific) technology, which may solve the problem of farmers of that very farming situation. The important points of OFT are farmers filed, farmer's participation, farmers management and farmers view point.

Requirement of OFT

The concept of OFT is that the trial / research must begin and end with the farmers. There are certain requirements of OFT which need to be addressed for success of this approach like.

1. Only important problem of farmers should be addressed which needs better understanding of biophysical, Socio-economic and cultural conditions of the farming system of area where OFT is conducted.
2. Only few factors preferably two variables should be examined at a time because if variable are more then its management will be difficult.
3. The farmers practice should be kept as one of the treatment of trial so that alternative of that practice may be compared by the farmers.
4. The non-experimental variable of the trial must be managed as farmer's actual practice and then treatments can be compared in an effective manner before making any recommendation to the farmers.
5. The trial must be conducted under actual farming situation, which is representative of farmer's conditions.

Characteristics of OFT

1. Holistic in nature.
2. Farmers participatory
3. Problem solving
4. Gender sensitive
5. Compliments on-station research
6. Interactive and repetitive
7. Interdisciplinary

8. Acknowledges the location specificity of technical solutions
9. Emphasizes extensive on farm activities
10. Emphasize on feedback.

Methodology for Problem Oriented OFT

Broadly methodology for conducting OFT has five steps viz., (fig.1)

- I. Diagnosis of problem
- II. Planning
- III. Experimentation
- IV. Assessment
- V. Recommendation

STAGE - 1 :

Diagnosis of Problem

This stage of OFT involves collection and analysis of information generated by multidisciplinary team from farmers. At this stage careful study is done to understand practices of farmers farming system and system interaction so that farmers system perspective can be incorporated in OFT. This enables focused experimentation for solving productivity related problems in the given socio economic environment. The initial diagnoses are done in two stages.

(a) *Use of Secondary Data*

The secondary data if available can be used for agro eco-system analysis, socio-economic and cultural condition of target group farmers. These information's are helpful in designing the OFT. If secondary data are not available then information can be gathered from old local people or Govt. official, etc.

(b) *Informal Survey*

This step is followed after study of secondary data. For informal survey Participatory Rural Appraisal (PRA) is an efficient tool. Through PRA actual conditions and circumstances of farmer and farming system can be understood.



STAGE - 2 :

Planning

Problem identification should be based upon:

- a. Problem leading to productivity loss.
- b. Problem occurring frequently. After problems are identified following steps should be followed.
- c. Problem affecting major crops.
- d. Problem affecting majority of farmers.

After problems are identified, following steps should be followed.

1. Prioritization of Problem

Out of all identified problems prioritize them based upon their effect on productivity in consultation with farmers. List 4-5 problems, which need to be addressed.

2. Problem Cause Tree Development

Develop problem cause tree to know and understand the root cause of the problem.

3. Intervention Point Identification

Through problem cause tree identify intervention points where action is required for solving the problem. At this stage also decide the nature of intervention required to overcome the problem.

4. Listing of Possible Solutions

After identifying the intervention point, pool and enlist all the possible solutions for solving the problem. After listing the possible solution screen the possible solution that can be best suited in the prevailing farming system. The screened possible solution should.

- * Increase productivity
- * Increase farmer's income

- * Have minimum risk
- * Have farmer's perspective.

While going through pooling, enlisting and screening there may be definite 'No' or 'Yes' answers or the answer may be not sure". In this case definite 'No' the specific solution should be dropped farm experimental content. In case of definite 'Yes' there can be immediate recommendation of the best technical solution to the target group farmers. If the scientist and farmers are "Not sure" of the solutions then best solution goes forward to conduct On Farm Trials (OFT).

STAGE - 3:

This stage has the following steps:

a. *The Experimental Sequence*

The Experimental sequence which takes the scientists from uncertainty about factor responses under local condition to full confidence that a new practice is a superior alternative for farmers present practice has three types of OFT e.g. exploratory, detective and verification. The sequence of trials can be started at any level depending upon the experience and confidence of the OFT team for finding solutions of farmer's problem.

b. *Design of On Farm Trails*

The experimental design is not different from conventional research; 2n factorials being a favoured treatment arrangement for exploratory trials. Farmers and optimal practice, the two levels should be used to identify yield gaps and thus factor priorities. The conditions of target farmers mainly decide the choice of treatment and their levels.

c. *Selection of Site and Farmers*

Selection of clustered site for OFT and Community help in farmer's selection always help in experimentation.

d. Choice of Farmers Practice

Special care should be taken while identifying real farmers practice in OFT so that comparison with new technology/practice may be made in an effective manner.

e. Management of OFT

The farmers should manage all the experimental plots except the intervention technology / practice under test. All the cultivation practice should be done by farmers as they have been doing in past.

STAGE - 4:

ASSESSMENT OF RESULT

There are four type of assessment of results:

- a. Agronomic
- b. Statistical
- c. Economical
- d. Farmers Assessment

No single assessment is complete in itself but farmer's assessment is final.

STAGE - 5:

RECOMMENDATION OF RESULTS

If the farmers approve the solution of the problem under study then it can be recommended to the farmers of same situation.