

FRONT-LINE DEMONSTRATION

Front-Line Demonstration is the new concept of **field demonstration** evolved by the Indian Council of Agricultural Research with the inception of the Technology Mission on Oilseed Crops during mid-eighties. The field demonstrations conducted under the close supervision of scientists of the National Agriculture Research System are called front-line demonstrations because the technologies are demonstrated for the first time by the scientists themselves before being fed into the main extension system of the State Department of Agriculture.

The main objective of Front-Line Demonstrations is to demonstrate newly released crop production and protection technologies and its management practices in the farmers' field under different agro-climatic regions and farming situations. While demonstrating the technologies in the farmers' field, the scientist are required to study the factors contributing higher crop production, field constrains of production and thereby generate production data and feedback information. Front-Line Demonstrations are conducted in a block of two or four hectares land in order to have better impact of the demonstrated technologies on the farmers and field level extension functionaries.

Special Features:

The Front-Line Demonstrations are different than the normal demonstrations conducted by the extension functionaries. The special features of Front-Line Demonstrations are:

- Front-Line Demonstrations are conducted under the close supervision of the scientists of the National Agriculture Research System comprising of ICAR Institute, National Research Centres, Project Directorates, Krishi Vigyan Kendras, and the State Agricultural Universities and its regional Research Stations.
- Only newly released technologies or those likely to be released in near future are selected for the Front-Line Demonstrations.
- Front-Line Demonstrations are organized in a block of two to four hectares involving all those farmers whose plots fall in the identified demonstration block.
- Only critical inputs and training are provided from the scheme budget, remaining inputs are supplied by the farmers themselves.
- Training of the farmers associated with the Front-Line Demonstrations is a prerequisite for conducting such demonstrations.
- The target audience of the Front-Line Demonstration are both farmers and the extension officers. The purpose is to be convince extension functionaries and farmers together about the potentialities of the technologies for further wide scale diffusion; and
- Front-Line Demonstration are used as a source of generating data on factors contributing higher crop yields and constraints of production under various farming situations.

Field Demonstration:

Field demonstration is a long term educational activity conducted in a systematic manner in farmers' fields to show worth of a new practice/ technology. "Seeing is believing" is the basic philosophy of field demonstrations. Only proven technologies are therefore selected for field demonstrations. Field demonstrations educate farmers through results obtained in terms of varieties resistant to disease and pest, quality of the grains and overall

higher yields. In addition, it also educates the farmers in term of input-output ratio and economic gains in terms of net returns. Basically, there are two types of field demonstrations: (i) Single practice demonstration and (ii) Composite demonstration.

A **Single Practice Demonstration** aims at proving the worth of a single practice such as effect of balance fertilizers in rice crops, higher yields from newly released varieties of hybrid maize, effect of irrigation at crown root initiation stage of wheat, effect of new pesticide on fruit borer in gram etc.

A **Composite Demonstration** is a combination of field based result demonstrations and a chain of skill oriented method demonstrations. A long term sequential method demonstrations (Composite Demonstration) aim at demonstrating the superiority of a package of practices in growing a field crops. Here the effect of one practice in harnessing the effect of other practices is also demonstrated and studied. For example, combined effect of irrigation and fertilizer application on grain yield and quality of a newly released mustard variety may be demonstrated as a composite demonstration.

Many times, there is an over emphasis on field demonstrations in extension work. Good field demonstrations lead to higher adoption of demonstrated practices by the farmers as they developed the confidence amongst them in the practices demonstrated. Field demonstrations provide an effective learning situation as farmers “**See the crops themselves**”, “**interact with the scientists and extension workers on the fields**”, and “**get doubts clarified then and there itself**”. It is, therefore, essential that whatever demonstrations are conducted, they should be well planned and execute giving no chance to fail. One bad demonstration can vanish the impact of many good demonstrations. Scientists, therefore, have to be very careful in planning and conducting the field demonstrations. Without specific purpose, demonstrations should not be organized. Demonstration should be conducted only when situation demands.

Steps in Conducting field demonstrations.

Since field demonstration is often used as an extension method, it is sometimes laid out in a routine manner. A well conducted demonstration, should help the scientists to give finishing touch to changing attitude of farmers and extension workers and improve their knowledge, understanding and skills. The following steps need to be followed in conducting field demonstration.

A. Planning Phase:

1. Know the Vicinity: The scientists need to develop an understanding of the farmers, their farming systems, resources and establish rapport with them. It is essential to gather information on cropping system, present level of use of inputs and productivity of major crops of the area. There are different ways of knowing vicinity. Some are formal and some are informal. A few areas under

- (a) Visiting villages and farmers.
- (b) Collection of information using PRA tools.
- (c) Meeting people individually and in groups.
- (d) Meeting opinion leaders.
- (e) Exchanging information with local extension workers; and
- (f) Consulting office records of population and basic agriculture.

2. Select Technologies: Select only proven technologies which have higher potentialities in terms of yield, disease resistance, quality, and can fit in the existing farming systems and situations of the area/farmers. Technology should be frontier ones i.e. recently released technologies or such which are at advance stage of release. Be sure that the technology selected for demonstration is much superior than the technology being already in use. At this stage scientists responsible for demonstration must have a lot of consultations with the research scientists who are responsible for released of the technology. They should ask a number of questions from the research scientists and be satisfied about the superiority of the technology.

3. Select Demonstration Site: Avoid isolated farm. Demonstration site should be easily accessible for the farmers and extension workers. As far as possible, block of demonstration site should have a good number of farmers of all categories of land holding and status. Never conduct block demonstration in a single farmer's plot. Pay also attention to farm size, layout of the field, soil type, fertility status, irrigation facilities and drainage system.

4. Select Demonstration Farmers: A group of farmers land holdings in the selected demonstration block and who are willing to cooperate in the conduct of demonstration should be selected. Demonstration farmers should be selected finally by holding a meeting in the village where the purpose of demonstration should be clearly stated and suggestion sought from the farmers. Any difference in opinion may be sorted out tactfully otherwise there is a chance of having non cooperation from those who are not selected as demonstrating farmers which may ultimately jeopardize the very purpose of demonstration.

5. Finalise Package of Practices: This is an important step in planning the field demonstrations. Collect the new technologies from the ICAR Institute/SAU's and ensure these technologies are frontier ones showing substantial increase in yields. Involve as many scientists of the research station in the discussion as possible. This will help in working out minute details of sequences of method demonstration required, identification of important tasks/practices in which presence of scientists should be necessary and critical input for demonstration. Knowledge about farming conditions will be useful at this stage. Involve also demonstrating farmers in finalizing package of practices. This will help in understanding the level of farmers practices, resource base to sustain the technologies and their perspectives.

6. Prepare for demonstration: Arrange critical inputs for the demonstration. Critical inputs are those agricultural inputs which are vital to help the selected technologies to exhibit its production potentialities on farmer's field and not earlier being used by the farmers. Arrange such inputs viz. seeds, fertilizers, farm equipments and other inputs in time. Only critical inputs need to be supplied by the scientists. Other inputs should be arranged by the farmers themselves. Ensure that the inputs which are to be given by the farmers are available with them. The farmers should never be given an impression that the demonstration is a means of receiving free inputs. Rather they should be educated to understand the educational value of such demonstration.

B. Conducting Phase:

1. Layout of Demonstration: Guide and assist the farmers in laying out the field. Special training programme may be arranged for all farmers in whose plots demonstrations are to be laid. Keep the control plot if needed; otherwise treat all other neighboring/surrounding plots as control plots. In case of block demonstration, one acre plot as a control is adequate.

Sometimes a control plot is not necessary as the “entire memory of the farmer” is taken as a “control” or the neighboring plots would serve the purpose of control plots.

Put a publicity board on the fringe of the demonstration plot. Mention the details of the demonstration on the board.

2. Crucial Farm Operations: Ensure your presence at the time of important operations like, seeding, fertilizer application, weeding, irrigation, plant protection measures, harvesting, threshing and weighing of produce. Two things are important at this stage: (i) using demonstration for farmers’ training, and (ii) record keeping in demonstration. Each operation should be used as input of training of farmers. Encourage questions from the farmers at each of these operations. This will help in better understanding of the task/operations.

3. Field Day: Arrange a field day to project the new technologies demonstrated in front of a large manageable group of interested farmers. It is an intensive educational activity in which farm experts, extension workers and farmers are involved and learn from each other. Plan the field day when the crop is fully matured yet green. Ask the demonstration farmers to explain the story of demonstration one by one to the assembled group of farmers and extension workers. Arrange a few method demonstrations on operation of farm machines and equipments, operation of seed drill, seed treatment, fertilizer application, plant protection, etc. Farmer-scientist-extension workers discussion should be an important feature of the Field Day.

4. Harvesting: Make an eye estimate of the field. Arrange harvesting in the presence of identified groups of farmers. Ask the farmers to estimate the yield and to say in what way the demonstrated technologies are superior than the earlier ones. Are they satisfied with the performance of the technologies? What lessons they have learned from the demonstration? Will they advice other fellow farmers to adopt this practice? Will they exchange the seed materials of new variety with other fellow farmers? What are the expected profits? Will it be more than what they used to get from their own practices? What are the difficulty in following the demonstrated practices? Idea is to ascertain as to what extent farmers are satisfied with the demonstrated technology and what is the possibility of their continued adoption.

C. Follow-up Phase.

Some farmers may revert to old practices in the absence of follow-up. They need information reinforcement, timely supply of inputs or on the spot guidance. Group approach in follow-up will give better results. It is better to link your follow-up programmes with the local institutions like Farmers Club, Farmers Cooperative Society, Village Panchayat etc.

D. Record Keeping:

There are two types of records which one should maintain for each block demonstration.

- 1. Information Card:** This card contains basic information about the demonstration site viz. previous crops and varieties grown, fertility status of the plots, present productivity of crops, size of holdings of each farmers in the demonstration block, extent of use of inputs etc. It should also contain detail information of demonstration like size of block, variety of crop, seed rate, sowing date, inputs applied, irrigation schedule followed, intercropping operation performed, plant protection measures taken, date of maturity, date of harvesting, incidence of disease and pests, average numbers of tillers, yields of crop etc. The card should remain with the demonstration farmers and is filled up by them or by an educated person in their family or by the KVK staff who visit the demonstration site from time to time.

2. **Technical Report:** The technical report should contain information on soil analysis, variety of crop, germination, plant population, pest and diseases, irrigation, fertilizer application, harvesting, final yield, extension activities undertaken etc. It should also contain information on cost-benefit ratio of the demonstration. This will help to work out the economic returns. A favorable cost-benefit ratio will fully convince the extension officers and the farmers about the profitability of the technologies demonstrated.

Submission of technical reports to Zonal Coordinator/Council in time is as important as concluding good field demonstrations. Late submission of reports may constrained the Zonal coordinator/Council not to include them in the Zonal report/national report. Remember, demonstration report helps in planning agricultural development and farm research programme of your area, state and country. Therefore send technical report of block demonstration in time.

Each block demonstration should be concluded with a feature story written in simple and easily understandable language. The story should have supporting data and photographs of demonstration to convince the readers. Role of the scientists in writing of feature story is very important. Such story becomes the important learning materials in the Krishi Vigyan Kendras.