

Existing Knowledge Based Training Needs of Small Farmers

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ABSTRACT

The study conducted in Junagadh district of Gujarat in June 1976. Small farmers' overall knowledge, taking all the four crops and all the practices together was found far below the 'fair' level. This shows that small farmers need training in all the four crops. However, the knowledge level, for bajra, wheat and cotton was below fair level, while it was almost 'fair' in case of groundnut. Again, small farmers' knowledge was 'poor' in plant protection practices.

Further, knowledge analysis in plant protection practices suggests that small farmers are almost totally ignorant of control measures of prevailing diseases, extent of damage caused by prevailing diseases, storage of grains, extent of damage caused by insects and pests, treatment of seeds, and control measures of insects and pests. Consequently the actual training necessity score in those, is almost equal to '2' (Maximum mean score in an item). It means, small farmers needed more training in plant protection practices.

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INTRODUCTION

India's rural scene is dominated by overwhelming number of small and marginal farmers. According to 1971 census small farmers constituted 71 per cent of the total farm families cultivating 21 per cent of the total cultivated area in our country. Development of small farmers is, therefore, considered as an item of top priority and urgency from the point of view of removal of rural poverty and bringing about social justice and agricultural development. The consideration of agricultural development, however, becomes more important as presently nothing seems to be more feasible proposal for increasing the income of the small farmers than development of their farm. Major bene-

fits of high yielding varieties and other development programmes have not reached the small farmers due to the fact that they have not adopted major part of agricultural technology. Reasons for non-adoption are many but important reason is a lack of adequate knowledge and skill in agricultural technology. Thus, training plays an important role in keeping farmers abreast, with latest technology. Training has to be an important item in extension education package to transfer appropriate technology to small farmers.

Keeping in view the above importance the present study was undertaken to find out training needs of small farmers based on existing level of knowledge of small farmers. The objectives of this study were as under.

1. To assess existing level of knowledge of small farmers in package of practices of the four major crops viz. groundnut, bajra, cotton and wheat.
2. To find out gap between existing level of knowledge and desired level of knowledge.

Govindappa (1975) reported that small farmers knowledge in farm practices was low as compared to others. Of course, the knowledge level relating to vegetable-crop practices, plant nutrients in common fertilizers, role of individual nutrients and plant protection chemicals was low of both the categories of farmers. Mathur (1976) opined that before adopting modern technology, it is essential for small farmers to know basic principles of fitting suitable remunerative crops in the cropping system. Menon (1976) observed that majority of small farmers do not know purpose and advantages of soil testing, improved implements and multiple cropping. Singh (1976) found small farmers has least knowledge about high yielding varieties of paddy. A inverse relationship was found between the knowledge of small farmers and degree of training needs. Sinha *et al* (1976) highlighted that small farmers demanded intensive training, in plant protection measures and fertilizers application techniques.

MATERIALS AND METHODS

The data for this study were collected by interviewing 100 small farmers from 10 village of Junagadh district (Gujarat) in June 1976. Ten villages were selected at random from 37 villages. Ten small

farmers were selected at random from each of the selected villages.

The questions were designed to measure the existing level of knowledge of small farmers in respect of different items of package of practices of the four major crops viz. groundnut, bajra, cotton and wheat. The replies of these questions from each of the respondents were evaluated by the researcher in accordance with a key developed for this purpose in advance and before the test administered. Based on this evaluation the performance of each farmer, against each of the question was rated against three point continuum of adequate, fair and poor and given the score value of 2, 1 and 0 respectively.

Training needs:

In this study, adequate knowledge in an item of package of practices, means, they do not need training in that item. It is considered desired level of knowledge. Desired level of knowledge is assigned 2 score value. Training needs = Desired level of knowledge - existing level of knowledge.

Suppose, small farmers' existing level of knowledge in a particular item, is adequate (score value 2), then, same fashion as below Training Needs = Desired level of knowledge - existing level of knowledge.

$$= 2 - 2$$

$$= 0 \text{ Score value}$$

If, existing level of knowledge is 'fair' then,

Training Need = Desired level of knowledge - existing level of knowledge

$$= 2 - 1$$

$$= 1 \text{ Score value}$$

If, existing of knowledge is 'poor' then,

Training Needs = Desired level of knowledge - existing level of knowledge

$$= 2 - 0$$

$$= 2 \text{ Score value}$$

Analysis of data:

The specific statistical test used in this study was analysis of variance.

RESULTS AND DISCUSSION

Knowledge test:

Small farmers existing knowledge, as already stated was measured through a knowledge test. The mean knowledge score yielded by the test in respect of each of the applicable practices for each of the four crops are presented in Table-1

The score value 2, 1 and 0 means respectively 'adequate', 'fair' and 'poor' knowledge. The overall mean knowledge in all the four crops and all of their practices is indicated by the score

value in the last column of the last row of Table-1. This is 0.62. This means that overall knowledge was below 'fair.' A knowledge of this level can practically have no consequence. This indicates need for almost thorough knowledge in scientific methods of cultivation of the four crops.

Knowledge in different crops:

Mean knowledge score, taking all the practices together, related to groundnut, bajara, wheat and cotton were 0.88, 0.75, 0.70 and 0.51 respectively. These clearly show that farmers knowledge in package of practices of groundnut, was the highest, of all the four crops. Its score here is of the fair level. Cotton has the lowest mean score (0.51). The two grain crops took intermediate positions between groundnut and cotton. The difference between bajra and wheat is almost negligible, bajra having slightly at edge over wheat.

TABLE 1

Small farmers' existing level of knowledge in package of practices of major crops.

Sr. No.	Package of Practices	Name of Crops	Mean knowledge score				Practices/ group of the practices.
			Bajra	Wheat	Cotton	Groundnut	
1	2	3	4	5	6	7	
<i>Agronomical Practices</i>							
1.	Name of varieties	0.96 (1.04)	0.94 (1.06)	0.92 (1.08)	0.45 (1.55)	0.82 (1.18)	
2.	Time of sowing	1.33 (0.67)	1.04 (0.96)	0.95 (1.05)	1.21 (0.79)	1.13 (0.87)	
3.	Seed rate	1.17 (0.83)	1.09 (0.91)	0.77 (1.23)	1.62 (0.38)	1.16 (0.84)	
4.	Sowing distance	1.01 (0.99)	0.97 (1.03)	0.65 (1.35)	1.12 (0.88)	0.94 (1.06)	

1	2	3	4	5	6	7	8
5. Number of irrigation			NA	0.82 (1.18)	0.76 (1.24)	NA	0.73 (1.27)
6. Time of sowing			NA	0.98 (1.02)	0.84 (1.16)	NA	0.91 (1.09)
Mean score in agronomic practices			1.12 (0.88)	0.97 (1.03)	0.81 (1.19)	1.10 (0.90)	1.00 (1.00)
<i>Manurial practices :</i>							
7. Balance does of feritlizer			0.70 (1.30)	0.78 (1.22)	0.53 (1.47)	1.22 (0.78)	0.80 (1.20)
8. Time of fertilizer application			0.80 (1.20)	0.83 (1.17)	0.57 (1.43)	1.10 (0.90)	0.82 (1.18)
9. Method of fertilizer application			0.83 (1.17)	0.82 (1.18)	0.53 (1.47)	1.22 (0.78)	0.85 (1.15)
Mean score in manurial practices			0.77 (1.23)	0.81 (1.19)	0.54 (1.46)	1.18 (0.82)	0.82 (1.18)
<i>Plant Protection Practices</i>							
10. Treatment of seeds			0.39 (1.61)	0.08 (1.92)	NA —	0.17 (1.83)	0.21 (1.79)
11. Insects & pests attacking the crops			0.90 (1.10)	0.72 (1.28)	0.54 (1.46)	1.08 (0.92)	0.81 (1.19)
12. Extent of damage caused by insects and pests			0.14 (1.86)	0.19 (1.81)	0.14 (1.86)	0.19 (1.81)	0.17 (1.83)
13. Control measures of insects and pests			0.07 (1.93)	0.26 (1.74)	0.29 (1.71)	0.34 (1.66)	0.24 (1.76)
14. Prevailing diseases			0.96 (1.04)	0.68 (1.32)	0.06 (1.94)	0.37 (1.63)	0.52 (1.48)
15. Extent of damage caused by prevailing diseases			0.22 (1.78)	0.10 (1.90)	0.04 (1.96)	0.10 (1.90)	0.12 (1.88)
16. Control measures of prevailing diseases			0.03 (1.97)	0.14 (1.86)	0.02 (1.98)	0.05 (1.95)	0.06 (1.94)
17. Storage of grains			0.16 (1.84)	0.16 (1.84)	NA	NA	0.16 (1.84)
Mean score in plant protecting practices			0.36 (1.64)	0.70 (1.30)	0.18 (1.82)	0.39 (1.61)	0.31 (1.69)
Mean knowledge score in crops			0.75 (1.25)	0.70 (1.30)	0.51 (1.49)	0.88 (1.12)	0.62 (1.38).

Paranthesis shows score value of training needs.

Training Needs = Desired knowledge - Existing level of knowledge

NA=Not Applicable,

Significance of difference in mean knowledge score of any two crops were tested through analysis of variance, presented in Table 2.

TABLE 2

Analysis of variance for testing of differences of mean knowledge scores between group of practices and between crops.

<i>Sources of variance</i>	<i>d.f.</i>	<i>s.s.</i>	<i>M.S.</i>	<i>Cal.F.</i>
Groups of practices	2	1.078	0.539	38.22**
Groups	3	0.215	0.072	5.09*
Error (Practices × Crops)	6	0.085	0.014	
Total	11	2.378		

**Significant at 1 per cent level.

*Significant at 5 per cent level.

C.D.=0.24 for groups of practices.

C.D.=0.20 for crops.

The differences in mean knowledge scores between groundnut and cotton, and bajra and cotton were found significant at 5 per cent level. Differences in mean knowledge scores between all other possible pairs, viz. bajra & wheat, bajra & groundnut, and wheat & cotton were not significant.

Cash crops in general get more attention from the farmers and economic infra-structures in respects of these crops are also usually better. This might be due to the fact that cash crops being related to one or other industry. Hence, highest mean knowledge score in groundnut does not seem to be a matter of surprise. On the other hand for the same reasons the why of lowest knowledge score in cotton (even lower than these in bajra and wheat) needs to be analysed especially when groundnut cultivation started in the area much later than the cotton. This glaring difference between the small farmers knowledge in two cash crops might be attributable to the fact that :

1. Package of practices of cotton is more complicated than that of groundnut.
2. Groundnut is significantly more remunerative than cotton.
3. Problems of irrigation and plant protection are more serious in cotton than groundnut.

Knowledge in different groups of practices :

The last column of the Table 1 shows the wide variation in farmers knowledge from practices to practices. For example knowledge score in seed rate, was 1.16, while in control measures of prevailing diseases it was 0.06.

With a view to see the order and system in these differences the individual practices have been broadly grouped into three classes of agronomic practices (items 1 to 6 in Table 1) manurial practices (items 7 to 9) and plant protection practices (items 10 to 17). Mean knowledge scores (overall of the four crops) in agronomic, manurial and plant protection were 1.00, 0.82 and 0.31 respectively. These show that knowledge in agronomic practices was clearly

fair, in manurial almost fair, and in plant protection practices it was poor and 'Pooer' in this study, means no knowledge.

The difference between the mean knowledge scores in agronomic and plant protection, and also between manurial and plant protection practices were significant at per cent level. The corresponding difference between agronomic and manurial practices was not significant.

Coming to plant protection practices, it is seen that there is same trend of difference from crop to crop as in agronomic and manurial practices. Knowledge in respect of all crops was poor in plant protection practices.

The lowest knowledge which is equivalent to no knowledge in plant protection can be attributed to two factors. Plant protection measures are complicated techniques and more so for small farmers. These have not part been of traditional farming in any form comparable to the latest plant protection technology.

Training necessity scores:

The order of the training necessity scores based on the existing level of knowledge of the small farmers, is plant protection, manurial and agronomic practices, while, in crops it is in order of cotton, wheat, bajra and groundnut. The actual training necessity scores (based on knowledge test) in seed rate and time of sowing were 0.84 and 0.87 respectively.

Mean knowledge scores of small farmers in control measures of prevailing diseases, extent of damage caused by prevailing diseases, storage of grains, extent of damage caused by insects and pests, treatment of seeds, control-measures

of insects and pests, were 0.06, 0.12, 0.16, 0.17, 0.21, and 0.24 respectively (Table 1). This suggests that small farmers are almost ignorant of the recommendations on these items of package of practices. Consequently the actual training necessity score in these, is almost equal to '2' (Maximum possible mean score in an item).

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*Original not seen,