



Development of scale to measure the farmers attitude towards bio-control measures of plant protection

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ABSTRACT

Due to non-availability of a proper scale to measure farmers' attitude towards bio-control measures of plant protection, it was thought necessary to construct a scale for the purpose. Keeping this in view, an attempt has been made to develop a scale for measuring the attitude of farmers towards bio-control measures of plant protection. The technique chosen to develop the attitude scale was of "Scale Product Method" which combines the Thurston's (1946) technique of Equal Appearing Interval Scale for selection of the items and Likert's techniques of summated rating for ascertaining the response on the scale.

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INTRODUCTION

Attitude has been defined as "the degree of positive or negative feeling, effect, opinion, action and belief associated with some psychological object". Psychological object may be any symbol, institution, person, phrase, slogan, idea or ideal towards which people may differ from each other with respect to positive or negative aspect. The cognitive component of an attitude consists of the beliefs, which involve attributes like favourable or unfavourable, desirable or undesirable, good or bad etc. The feeling component refers to the emotions which give attitude a motivating character or action tendencies. The action tendency component of an attitude includes all behavioural readiness associated with it. These three components of attitude, are, however, consistently related to each other. The psychological object for the present study has been conceptualized as the bio-control measures of plant protection.

METHODOLOGY

Among the techniques available for construction of scale, the methodology suggested by Likert (1932) and Edward (1957) was used in

this study for scale construction and for ascertaining the response of the scale. The technique chosen to construct the attitude scale was of "Scale Product Method" which combines the Thurston's technique (1946) of Equal Appearing Interval Scale for selection of the items and Likert's techniques of summated rating for ascertaining the response on the scale.

Item collection:

The items making up an attitude scale are known as statements. A statement may be defined as anything that is said about a psychological object. As a first step in the developing the attitude scale for bio-control measures of plant protection, a number of statements about bio-control measures of plant protection were gathered from the relevant literature plant pathologists, entomologist, researchers and extension personals who were directly or indirectly exposed to such knowledge system.

Judges rating of attitude statements:

In order to judge the degree of "Unfavourableness" to "Favourableness" of each statement on the five point equal

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appearing interval continuum, a panel of 50 judges was selected. The judges selected for the study comprised of extension educationists, entomologists and statisticians with considerable practical experience in such field from the Anand Agricultural University, Anand. The judges were visited personally along with letter of instructions to guide them for rating the statements in desired manner for each set of the statements.

Determination of scale and quartile value:

The five points of the rating scale were assigned, ranging from 1 for most unfavourable and 5 for most favourable. On the base of judgment, the median value of the distribution, and the Q value for the statement concerned was calculated, the inter-quartile range ($Q_3 - Q_1$) for each statement was also worked out for determination of ambiguity involved in the statement.

Final statements for attitude scale:

When there was a good agreement among the judges, in judging the degree of agreement or disagreement of a statement, Q was smaller compared to the value obtained, when there was relatively little agreement among the judges it was reverse. Only those items were selected whose median (scale) values were greater than Q values. However, when a few items had the same scale values, items having lowest Q value were selected. Based on the median and Q values, 14 statements were finally selected to constitute attitude scale. The scale values were ranging from 1.1 to 4.1 with 0.5 class intervals.

Reliability of the scale:

A scale is reliable when it consistently produces the same result when applied to the same sample. In the present study, split-half method of testing reliability was used. The 14 statements were divided into two halves with seven odd numbered in one half and other seven even numbered statements in the other. These were administered to 25 respondents. Each of the two sets of the statements was treated as a separate scale and then these two sub-scales were correlated. The co-efficient of reliability was calculated by the Rulon’s formula (Guilford, 1954), which came to 0.75.

Content validity of the scale:

Validity of the scale examined for content validity by determining how well content were selected by discussion with specialist, extension academicians, etc. thus, the present scale satisfied the content validity.

Scoring system:

The selected 14 statements for the final format of the attitude scale were randomly arranged to avoid response biases, which might contribute to low reliability and detract from validity of the scale. The responses can be collected on five point continuums viz., strongly agree, agree, undecided, disagree and strongly disagree with respective weights of 5, 4, 3, 2, and 1 for the favourable statements and with the respective weights of 1, 2, 3, 4, and 5 for the unfavourable statements.

Table 1: Final statements of the scale to measure the farmers’ attitude towards bio-control measures of plant protection

Sr. No.	Statements	SA	A	UD	DA	SDA
1.	I feel that avoidance of biological control methods is a blunder.					
2.	I consider that bio-control is wastage of resources.					
3.	I think biological control method of pest control is most effective among all the method of pest control.					
4.	I feel that bio-control methods are difficult to adopt without govt. aid.					
5.	I feel that application of bio-control measures are profitable venture.					
6.	I feel limited scopes of bio-control measures to control variations of pests.					
7.	I wish that my children should make use of bio-control.					
8.	I feel that use of bio-control is gambling.					
9.	I feel bio-control is useful in overcoming the problem of the soil pollution.					
10.	It is most unpopular among the farmers as it covers small area with large quantity of biological agent.					
11.	I believe that bio-control methods are difficult to understand.					
12.	I think that bio-control measures are useful to balance nature.					
13.	There is more propaganda about the utility of biological control but in practice it is not so.					
14.	I think bio-control is eco-friendly.					

SA=Strongly agree, A=Agree, UD=Undecided, DA=Disagree, SD=Strongly disagree

**Table 2 : Distribution of the respondents according to their attitude towards bio-control measures of plant protection
n =105**

Sr. No.	Types of attitude	Range	Frequency	Per cent
1.	Strongly favourable	more than 50.25	18	17.14
2.	Favourable	between 47.25 to 50.25	17	16.19
3.	Neutral	between 43.07 to 47.25	31	29.52
4.	Unfavourable	between 40.68 to 43.07	23	21.91
5.	Strongly unfavourable	less than 40.68	16	15.24
Total			105	100

X= 45.46

(0.5 S.D. = 2.39)

S.D.= 4.78

OBSERVATION AND ANALYSIS

To measure the attitude of respondents towards bio-control measures of plant protection, scale developed by research worker himself was applied. The data regarding attitude of the respondents towards bio-control measures of plant protection are presented in Table 2.

The data given in Table 2 illustrated that less than one third (29.52 per cent) of respondents had neutral attitude towards bio-control measures of plant protection. While, 17.14, 16.19 and 15.24 per cent respondents had almost similar strongly favourable, favourable and strongly unfavourable attitudes towards bio-control measures of plant protection and rest more than one fifth (21.91 per cent) of the respondents had unfavourable attitude towards bio-control measures of plant protection.

It can be inferred that slightly one third (33.33 per cent) respondents had strongly favourable to favourable attitude towards bio-control measures of plant protection and followed by 36.15 per cent of them had unfavourable to strongly unfavourable attitudes. Bio-control measures of plant protection are complex in nature and it is slow in action, which might be the possible reason.

Conclusion:

It can be concluded that slightly one third (33.33 per cent) respondents had strongly favourable to favourable attitude towards bio-control measures of plant protection and followed by 36.15 per cent of them had unfavourable

to strongly unfavourable attitude. For promotion of bio-control measures, farmers background factors which influence the attitude of the farmers in terms of change in behavioural components must be reckon within any training programme. Government and extension functionary should conduct training at grass root level in order to create awareness about bio-control measures. And efforts should be made by extension workers and officials of AAU, Anand to manipulate the attitude in desirable direction by providing training as per their felt needs.

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