



DEVELOPMENT OF SCALE TO MEASURE ATTITUDE OF THE FARMERS TOWARDS NEEM BASED BIO-PESTICIDES

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Abstract- The study was conducted to develop and standardize a reliable and valid scale, to measure attitude of farmers towards use of neem based bio- pesticides. Appropriate statistical method 'Scale product method' was used, which combines Thurston and Likert techniques. Twenty one statements were selected for judgment; a panel of 50 judges was requested to assign the score for each statement on five point continuum. Based on the scale (median) and Q values, twelve statements were finally selected to constitute the scale to measure attitude of farmers towards use of neem based bio- pesticide.

Keywords- Attitude, Neem based bio- pesticides, Scale product method, Scale development.

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Introduction

The Green revolution has succeeded in providing food security to the nation, it caused irreversible ecological damages in farm ecosystems. These effects reveal themselves in the forms of pest resurgences, development of resistance by pests, ecological degradation etc. Yield reduction due to lack of proper pollination is also a major concern nowadays. The farm is a part of the ecosystem in which the farmer and his family are depended for all the life sustaining activities. Deterioration of these resources is of primary concern as it directly affects the well-being of the farmers themselves. Hence, adopting bio-pesticides for farming not only maintains the quality of the agricultural produce but also conserves the ecosystem which supports farming and subsidiary enterprises as a whole. Thus, neem may be the herald of a new generation of "soft" pesticides that will allow people to protect crops in benign ways. To understand the feeling of the farmers towards such important component, there was no any well-developed scale to study positive or negative disposition towards its utility. Considering this, the present study was planned to construct a scale to measure the attitude of farmers towards use of neem based bio-pesticides.

Materials and Methods

Methodology

In the present study, attitude is operationalized as positive or negative feeling of farmers towards the use of neem based bio-pesticides. Among the techniques available 'Scale product method' which combines the Thurston's technique (1928) of equal appearing interval scale for selection of items and Likert's technique (1932) of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown (1949) was used [1-3,5].

Statement Assembly

The items of attitude scale are called as statements. Initially, statements reflecting feelings of the farmers towards the use of neem based bio-pesticides were collected from relevant literature and discussion with experts of extension and entomology disciplines. The collected statements were edited according to the criteria laid down by Edward (1957) [4] and then 21 statements were selected as they were found to be pertinent and unequivocal.

Statement Analysis

In order to judge the degree of 'Agreement' to 'Disagreement' of each statement on the five point equal appearing interval continuum [5], a panel of judges was selected. Fifty slips of the selected statements were handed over to the experts connected with extension discipline. The judges were requested to judge each statement in terms of their most agreement or most disagreement with the statements with the five equal appearing interval continuums. Out of these experts, all the experts returned the statements after duly recording their judgments and were considered for the analysis.

Determination of Scale Values

$$S = L + \frac{0.50 - \sum P_b}{P_w} \times i$$

Based on judgment, the median value of the distribution and the S value for the statement concerned were calculated with the help of the inter-quartile range ($Q = Q_3 - Q_1$) for each statement was also worked out. Only those statements were selected whose median values were greater than Q value. When a few statements had the same scale values, the statements having lowest Q Values were selected. Thurstone and Chave described another criteria in addition to Q as a basis for rejecting statement in scales constructed by the method of the equal appearing interval [4,5]. Accordingly, when a few items had the same scale values, the item having lowest Q Values were selected. The finally selected statements showing attitude are given in [Table-1]. Administration of the scale (Scoring technique) for application of the scale, the researcher can collect information against each statements in five point continuum viz. 'Strongly agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly disagree' with weighted score of 5,4,3,2 and 1 for positive and reverse in order for negative statements [5].

Reliability of the Scale

To know the consistency of the scale, reliability was worked out. The split-half technique was used to measure the reliability of the scale [5]. Selected 12 attitudinal statements were divided into two equal halves with 6 (Six) odd and 6 (Six) even

numbered statements. Each of the two sets was treated as separate scales having obtained two score, for each of the 20 respondents. Co-efficient of reliability between the two sets of score was calculated by Rulon's formula [5], which was 0.79.

Table-1 Final selected statements to measure attitude of the farmers towards the Use of neem based bio-pesticides.

Sl. No.	Statements	Scale value	Quartile Value
1	I prefer neem based biopesticides due to their eco-friendly character. (+)	1.36	1.04
2	I feel that scopes of neem based biopesticides are limited. (-)	3.8	2.24
3	Neem based biopesticides are environment friendly. (+)	1.11	0.61
4	I feel that application of neem based biopesticides is unmanageable. (-)	3.7	1.74
5	I like using neem based biopesticides due to their nontoxic Character. (+)	1.20	0.66
6	I feel that neem based biopesticides are practically difficult to adopt. (-)	3.9	1.29
7	I feel that use of neem based pesticides is valuable for sustainable agriculture. (+)	1.33	1.00
8	I feel that use of neem based biopesticides means wastage of money. (-)	4.17	1.24
9	I am sure that use of neem based biopesticides is a profitable practice. (+)	1.65	1.21
10	I believe neem based biopesticides are the best alternative for chemical pesticides. (+)	1.79	0.99
11	I trust that neem based biopesticides are competent to control many pests. (+)	1.9	0.78
12	I support neem based pesticides due to its pest preventative character. (+)	2.03	1.67

Validity of the Scale

The validity of content of scale was examined by discussing with specialists of the extension and statistics. Specialists examined and realized appropriateness of the each statement to measure the feeling of farmers towards the use of neem based bio-pesticides.

Administration of the Scale (scoring technique)

For application of the scale, the researcher can collect information against all 12 statements in five point continuum viz. 'Strongly agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly disagree' with weighted score of 5,4,3,2 and 1 for positive and reverse to negative statements.

Conclusion

From the various methods available for constructing the attitude scale, scale product method' which combines the Thurstone's technique of equal appearing interval scale, for selection of items and Likert's technique of summated rating for ascertaining the response on the scale as proposed by Eysenck and Crown was used to measure the attitude of farmers towards use of neem based bio-pesticides [1-3].

Conflict of Interest: None declared

References

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