Development and Standardization of Attitude Scale of Farmers Towards Dehorning in Cattle

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ABSTRACT

The study was conducted to develop and standardize the reliable and valid scale, to measure attitude of farmers towards use of mineral mixture. Appropriate statistical methods 'Scale product method' was used, which combines Thurston and Likert techniques. Twenty (20) 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 (12) statements were finally selected to constitute attitude of farmers towards dehorning in cattle.

Key words: *Attitude, Dehorning in cattle, Scale product method.*

INTRODUCTION

A large number of farmers in India depend on animal husbandry for their livelihood. In addition to supplying milk, meat and hides, animals, mainly bullocks, are the major source of power for both farmers and dryers. Thus, animal husbandry plays an important role in the rural economy. The gross value of output from this sector was 358 billion (US$5.6 billion) in FY 1989, an amount that constituted about 25 percent of the total agricultural output of 1.4 trillion (US$22.0 billion). Dehorning plays important role in animal health and reduces injury to the farmers and others human. Dehorning or disbudding is the process of removing or stopping the growth of the horns of livestock. Cattle, sheep, and goats are dehorned for economic and safety reasons. Horns can pose a risk in both human and other animals, and can be real bearers in the process of husbandry. The procedure is most commonly performed early in an animal's life, along with other actions such as docking and castration. Dehorning is normally done by a veterinarian or a trained professional. The alternatives that could be used in these processes and the lack of good practices in many countries resulted in a debate based on an animal welfare issue due to the fact that these alternatives can be very stressful for animals because they are producing pain and diseases. Dehorning or disbudding is the process of removing or stopping the growth of the horns of livestock. Disbudding involves destroying the horn-producing cells of the horn bud.5 Horn buds are removed without opening the frontal sinus (Vickers KJ, et al. 2005).

Disbudding can be performed by cautery, or by rubbing or covering the horn buds with a chemical, or by amputation with a specifically designed sharp tool, a scoop. Dehorning is removal of the horns after they have formed from the horn bud. Physical methods of dehorning (gouge dehorning) include the use of embryotomy wire, guillotine shears, or dehorning knives, saws, spoons, cups, or tubes. The Barnes-type scoop dehorner is commonly used for physical dehorning (AVMA, 2007).Recent publications confirmed that disbudding and dehorning are painful to cattle (Stafford and Mellor, 2005). The best animal welfare alternative in dehorning is the use of a naturally polled bull in the breeding program. The use of a naturally polled bull from naturally polled ancestors over horned breeding cows should result in the birth of polled calves. Considering this fact in mind, present study was planned to construct the scale to measure the attitude of farmers towards dehorning in cattle.

METHODOLOGY

In the present study attitude is operationalized as positive or negative feeling of farmers towards dehorning in cattle**.** Among the techniques available 'Scale product method' which combines the Thurstone'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.

Statement Collection*:*

The items of attitude scale are called as statements. In initial stage, 20 (twenty) statements reflecting feelings of the farmers towards dehorning in cattle were collected from relevant literature and discussion with experts of extension discipline. The collected statements were edited according to the criteria laid down by Edward (1957) and then 20(twenty) statements were selected as they were found to be unambiguous.

Statement Analysis

In order to judge the degree of 'Unfavorableness' to 'Favorableness' of each statement on the five point equal appearing interval continuum, a panel of judges was selected. Fifty slips of the selected statements were handed over to the experts connected with extension educational work. 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

Based on judgment, the median value of the distribution and the S value for the statement concerned were calculated with the help of

$$S = L + \frac{0.50 - \sum Pb}{Pw} \times i$$

The inter-quartile range (Q = Q3 - Q1) 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 (*Edwards, 1957*) described another criteria in addition to Q as a basis for rejecting statement in scales constructed by the method of the equal appearing interval. Accordingly when a few items had the same scale values, the item having lowest Q Values were selected. The attitude scale thus constructed given in Table 1

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. 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 (Guilford 1954), which was 0.75.

Table: 1 Final selected statement to measure attitude of farmers towards dehorning in cattle

Sr. No.	Statements	Scale Value	Q Value
1	The dehorning in cattle is advantages method. (+)	1.28	0.92
2	I dislike purchasing dehorned milch animals for my farm. (-)	2.30	1.39
3	The dehorning is the healthier approach to improve animal health. (+)	1.36	1.13
4	I think that dehorning in animals is unreliable practice. (-)	2.90	1.32
5	I feel that adoption of recommended dehorning practices in animals involves risk but worth taking. (+)	1.50	1.15
6	I think that dehorning reduces productivity of milch animals. (-)	3.50	2.75
7	Dehorning helps in reducing risk of injury to other animals. (+)	1.90	0.98
8	I think adoption of dehorning in animals is adoptable only by rich farmers. (-)	4.07	2.37
9	Dehorning helps in decreasing danger of injury to cattle keepers. (+)	2.00	0.69
10	I believe dehorning helps animals in behaving advantageously. (+)	3.00	2.82
11	I think that progressive animal keeper is one who believes in dehorning practices. (+)	3.62	2.89
12	I would dislike advising my children to adopt dehorning in milch animals. (-)	3.78	2.44

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 dehorning in cattle for which the scale is developed.

Administration of the scale (Scoring technique)

For application of the scale, the researcher can

collect information against each 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 Thrustone'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 dehorning in cattle.

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Received : September 2015 : Accepted : December 2015