

## A TEST TO MEASURE FARMERS' KNOWLEDGE OF POST HARVEST TECHNIQUES OF GROUNDNUT CROP

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### ABSTRACT

*This knowledge test could be used effectively for measuring groundnut growers knowledge about post harvest techniques of groundnut crop. Consequently the categorization of groundnut growers could be made on the basis of their knowledge level. Extension strategies viz. training programme, diffusion and communication of technology for speedy adoption may be planned according to knowledge level of groundnut growers*

### INTRODUCTION

Groundnut is the most important cash crop of Saurashtra region of Gujarat state. There is a lot of scope for increasing the groundnut production per hectare. However, the yield of groundnut crop is very low, because majority of the groundnut growers do not know and do not adopt improved groundnut post harvest techniques. The knowledge of the farmers plays an important role in adoption of post harvest techniques. Groundnut cultivation in this area is constrained by inadequate, uncertain and erratic rainfall, infestation of storage pests and disease, including losses during post harvest operation. Considering the above fact, it was thought worthwhile to study the knowledge of the growers about groundnut post harvest techniques.

### METHODOLOGY

For measuring the knowledge level of groundnut growers with respect to post harvest techniques, it is essential to develop the standardized knowledge test. Knowledge means those behavior and test situations which emphasizes the remembering either by recognition or recall of ideas, material or phenomena (Bloom et al 1955).

Efforts were made to develop a standardized knowledge test which can measure the level of

knowledge regarding groundnut post harvest techniques. The method of item analysis used by Jha and Singh (1970) was followed so as to yield three kinds of indices viz., item difficulty, item discrimination, and item validity. The collected items were administered to the 60 respondents at random from the village of the area under study. For each respondent, the total score was worked out by giving the score of 1 or 0 for the dichotomized response of correct or incorrect and for yes or no answers, respectively. Thus, the total score secured by an individual respondent of 61 items for correct or yes answer was the knowledge score. The scores thus obtained by the 60 respondents were arranged separately from highest to the lowest in magnitude.

These 60 respondents were divided into six equal groups each of five and were arranged in descending order of the total scores obtained by them. For the item analysis, the middle two groups were eliminated keeping four extreme groups with high and low scores. Selection of items for final format for the knowledge test was based on the following criteria:

#### Item difficulty index

The index of difficulty was worked out as the percentage of the respondents answering an

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item correctly. The items with "P" value (item difficulty index) ranging from 15 to 85 were considered for final selection of the knowledge battery.

**Discrimination index**

The item with  $E_{1/3}$  value above 0.20 and below 0.80 were considered for final selection.

$$(S_1 + S_2) - (S_5 + S_6)$$

$$E_{1/3} = \frac{\text{-----}}{N/3}$$

Where:  $S_1, S_2, S_5$  and  $S_6$  are the frequencies of correct answers in the four groups

( $G_1, G_2, G_5$  and  $G_6$ ) respectively after eliminating two middle groups.

N= Total member of respondents in the item analysis sample.

**Bi serial correlation**

The bi serial correlation ( $r_{bis}$ ) for each of the items was calculated and tested by using the formula given by Guilford.

$$r_{bis} = \frac{M_p - M_q}{\sigma_t} \times \frac{PQ}{Y}$$

Where:  $M_p$  = Mean of x value for higher group in dichotomized variable.

$M_q$  = Mean of x value of lower group in dichotomized variable.

P = Proportion of cases in higher group.

Q = Proportion of cases in lower group.

Y = Ordinate of the unit normal distribution curve with surface equal to 1.0 of the point of division

$r_{bis}$  = Bi serial correlation

The assumptions made for bi serial correlation are Y is normally distributed and the regression of Y on X is linear.

Test of significance of  $r_{bis}$  by 't' test

$$\sigma_t^2 = \frac{\sum (X_i - X)^2}{N}$$

$$SE \text{ of } r_{bis} = \sqrt{PQ / Y} \sqrt{1/N}$$

$$'t' = r_{bis} / SE \text{ of } r_{bis}$$

Where:  $\sigma_t^2$  = Population Variance

$\sigma_t$  = Population standard deviation

SE of  $r_{bis}$  = Standard Error for bi serial correlation

The items found significant at 5 percent level of significance were relined in the final format of the knowledge test. Thus, in light of the criteria described above, 39 items were finally selected which formed the actual format of the knowledge test and is represented in Appendix - I

**Reliability and validity of test**

To know the reliability of knowledge test, split half method ( $r = 0.93$ ) was used. For testing the validity, bi serial correlation ( $r_{bis}$ ) was considered. Highly significant bi serial correlation co-efficient ( $r_{bis}$ ) proved the validity of the items included in the test battery.

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**Appendix - I**

**Final format of knowledge test to measure farmers knowledge about groundnut post harvest techniques**

**A Knowledge on plant drying**

- 1 Groundnut bunches should be dried till pods moisture content is reduced at least 8 to 9 per cent. C / IC
- 2 Groundnut plant should be dried as per recommendation of ring practices. C / IC
- 3 We can judge completed drying procedure of groundnut with used rattling sound of pods when shaken. C / IC
- 4 We can judge completed drying procedure with pressed pods and easily split into two cotyledons. C / IC

**B Knowledge on threshing**

- 5 More quantity of groundnut dry plant bunches should not be fed in the thresher. C / IC
- 6 Don't smoke at the time of threshing. C / IC
- 7 Thresher should be operated with cover all running part of pulley, fan, belt, etc. C / IC
- 8 What is to be done when pods are broken at the time of threshing? .....
- 9 What is to be done when pod comes with unclean at the time of threshing? .....
- 10 How many labours are needed for threshing of groundnut? Please tick mark following figure. 5,6,7,8

**C Knowledge on cleaning and grading**

- 11 Which power is used of practices for the grading of groundnut pods? .....
- 12 Which procedure is used for the classification of groundnut pods? .....
- 13 Which procedure is used to find out of shelling percentage? .....
- 14 How much oil percentage does groundnut kernel have? .....
- 15 How can you reduce free fatty acid? .....
- 16 Less maturity of groundnut is one factors for losses of pre-storage quality. C / IC
- 17 Which are the main factors for losses of pre-storage groundnut? .....

**D Knowledge on Storage**

Why are the following practices used by the farmers for groundnut storage ?

- 18) Groundnut storage in loose heap in the corner of house. ....
- 19) Gunny bags are used for the storage of groundnut .....
- 20) Groundnut must be stored half feet high on platform on the floor of a room .....
- 21) Groundnut stored in gunny bags with arrange cross line on platform. ....

- 22 Arrange heap of gunny bags of groundnut from two feet distance of wall in the storeroom. ....
- 23 Which steps are taken for reducing losses of groundnut in the store room? .....
- 24 Which are the points kept in mind, when you select good storage room for groundnut? .....
- 25 Which are the major pests for damage during groundnut storage? .....
- 26 Which poison is used for rat control during storage of groundnut? .....
- 27 How much dose of poison is used for rat control? .....
- 28 Gunny bag should be done disinfected and then re-use for storing of groundnut? Yes / No
- 29 How many days is the storage room closed after fumigation? .....
- 30 Which chemical is used for fumigation? .....
- 31 How much dose/rate of chemical is used for fumigation? .....
- 32 Which insecticide is used for control of pest in the storage groundnut? .....
- 33 What is the dose of application of insecticide for control of pest in the storage groundnut?
- 34 How many hour should a store room be closed after application of insecticide? .....
- 35 What higher moisture percent of storage groundnut for increasing of aflatoxin contamination is needed? .....
- 36 How can you know / identified infection of aflatoxin? .....
- E Knowledge on transporting and marketing?**
- 37 Which are practices used to achieve higher price of groundnut in market? .....
- 38 What is the minimum support price by the government in this year? .....
- 39 Which is the appropriate time for selection to achieve highest price for selling groundnut in the market?

*WEALTH*

<i>W</i>	:	<i>Welldoer</i>
<i>E</i>	:	<i>Efficient</i>
<i>A</i>	:	<i>Active</i>
<i>L</i>	:	<i>Long sighted</i>
<i>T</i>	:	<i>Tactful</i>
<i>H</i>	:	<i>Hard Working</i>