

## The extent of adoption of the market intelligence among the summer cabbage growers

D. V. Singh<sup>1</sup>, Anupam Mishra<sup>2</sup> and S. R. K. Singh<sup>3</sup>

<sup>1</sup>Senior Scientist & Head, KVK, Kandhamal, Orissa University of Agriculture and Technology, Bhubaneswar

<sup>2</sup>Director, <sup>3</sup>Principal Scientist (Agricultural Extension, ICAR- ATARI, Zone-VII, Jabalpur

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**ABSTRACT:** The cultivation of vegetables, which is done mainly for marketing purpose, is known as commercial vegetable cultivation. Having achieved self-sufficiency in production led agriculture, India have to focus on market oriented Agriculture, which generate additional value to the farm produce, income and employment for farmers. Market oriented agriculture means adding value may be in terms of on-farm and off-farm income and employment generation by the production of agriculture and product. Commodity marketing research is an essential item in the marketing continuum. Price forecasts, preferences for consumers and industries, cost of storage, transport, etc. collectively known as market intelligence and to be disseminated at the time of sowing and harvesting. Market intelligence is life blood of the market, therefore, it has great importance in market oriented cultivation. The present study was confined to “Ex-Post facto” research design. Present study was conducted to measure the extent of adoption of market intelligence regarding market oriented cultivation of summer cabbage teacher made tests were developed. Six practices in market intelligence namely, grading, packaging, transportation, demand, sources to know selling price and marketing channel were selected for adoption. Study revealed that majority (79.27 per cent) of the respondents had medium to high level of overall adoption of market intelligence. More than half of the respondents had adopted grading, transportation and marketing channel practices, while demand, source to know selling price and packaging practices were less adopted by the respondents. The independent variables viz., education, education of family, land holding, annual income and level of knowledge of the summer cabbage growers were established positively and highly significant association with their extent of adoption of market intelligence. Age of the summer cabbage growers was associated negative and highly significant with their extent of adoption of market intelligence. The size of family of the summer cabbage growers was failed to establish any significant association with extent of adoption of market intelligence regarding market oriented cultivation of summer cabbage.

**Keywords:** Demand, Extent of Adoption, Market Intelligence, Grading, Growers, Packaging

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### I. Introduction

The cultivation of vegetables, which is done mainly for marketing purpose, is known as commercial vegetable cultivation. Having achieved self-sufficiency in production led agriculture, India have to focus on market oriented Agriculture, which generate additional value to the farm produce, income and employment for farmers. Market oriented agriculture means adding value may be in terms of on-farm and off-farm income and employment generation by the production of agriculture and product. As described by Verma (2008), Value addition to farm produce can be done at three level viz., post harvest primary processing, post harvest secondary processing and High end processing. Post-harvest primary processing included cleaning, grading, storing and packaging. This is mainly applicable for fruits and vegetables which are perishable nature and available only for a short period of time. In India less than 2% of the fruits and vegetable produced are processed as against 65% in the US, 70% in Brazil, 78% in the Philippines, 80% in South Africa and 83% in Malaysia. Post harvest losses of fruits and vegetable are high in our country which accounts for about 25 to 35% of the total horticultural produce (Kokate - 2011).

Among the cole crops only cabbage (*Brassica oleracea* L. var *capitata*) and cauliflower (*Brassica oleracea* L. var *botrytis*) are grown in winter within India and produce good yield between 5<sup>o</sup> C to 30<sup>o</sup> C day temperature. The cabbage is normally used in social events and festivals as a “SALAD” and therefore, there is a demand of cabbage during round the year. The average productivity of cabbage in India is 22.0 tonnes / ha which is too low as compare to the hectare production of cabbage 55.3 tonnes in Korea Republic (Gopalakrishnan, 2007). Cabbage is a widely popular vegetable. It occupies an area of 0.27 m ha with a 5.45% share in total vegetable production (Ahuja *et.al* - 2010).

In last one decade cabbage production has multiplied 2.02 times, due to the availability of potential and high temperature resistant varieties (Singh and Malhotra - 2010). Cabbage crop is harvesting during December, January and February as a traditionally in Odisha, so the cabbage production supply is not uniform through out the year. Also, the concept of marketing is not focus on the product, but to focus on the users. Hence user needs are vital in marketing. Owing to this, the average wholesale price of cabbage was also recorded highest during

the period of April to August. The highest price during the summer season is the driving force within the farmers of the Kandhamal district and they are motivated to cultivate the cabbage as a summer crop. Commodity marketing research is an essential item in the marketing continuum. Price forecasts, preferences for consumers and industries, cost of storage, transport, *etc.* collectively known as market intelligence and to be disseminated at the time of sowing and harvesting. Market intelligence is life blood of the market, therefore, it has great importance in market oriented cultivation.

It is therefore felt necessary to study the adoption of market intelligence among the summer cabbage growers and the association between selected personal and socio-economic attributes of summer Cabbage growers. Taking this fact in view, the present study entitled “Adoption of Market Oriented Cultivation of Summer Cabbage among the farmers of Kandhamal district of Odisha state.” was under taken to find out the extent of adoption of the market intelligence among the summer cabbage growers and to ascertain the association between selected personal and socio-economic attributes of the summer cabbage growers and their extent of adoption of the market intelligence.

## II. Research Methodology

Considering the highest area & production of cabbage crop Kandhamal district, was purposively selected for the study. G. Udayagiri taluka was also purposively selected, because this taluka have the highest cabbage growing area as compared to other talukas. Twelve villages form taluka were selected purposively. Using random sampling techniques, equal number of respondents *i.e.*, Ten from each village were selected. Thus, total 120 respondents were selected. The present study was confined to “Ex-Post facto” research design. To measure the extent of adoption of market intelligence regarding market oriented cultivation of summer cabbage teacher made tests were developed. Various packages of value addition techniques and marketing of the cabbage production were listed to know their adoption by the cabbage growers. Finally six practices in market intelligence namely, grading, packaging, transportation, demand, sources to know selling price and marketing channel were selected for adoption. Each practice has given score by conference method of the teachers and the total score of adoption of market intelligence was 73 determined. The farmers were asked to indicate the practices, they adopted in obtained market intelligence. Then, final score was calculated by simple addition of all the scores obtained.

Using the procedure suggested by Sengupta (1967), the adoption quotient for each respondent was calculated to measure his adoption of market intelligence regarding summer cabbage cultivation. The formula for calculating adoption quotient is as under.

$$\text{Adoption quotient} = \frac{\text{Number of techniques used}}{\text{Number of production technology}} \times 100$$

Based on the adoption quotient the cabbage growers were classified into three levels *viz.*, low, medium and high adoption of market intelligence regarding summer cabbage production on the basis of pooled mean ( $\bar{X}$ ) and standard deviation as under. Further, the comparison of practice-wise adoption of market intelligence regarding summer cabbage cultivation among the cabbage growers was also made. Practice-wise obtained mean scores were worked out against the practice-wise extent of adoption then ranked on the basis of obtained higher mean score in ascending order.

The data were collected with the help of structural and pre-tested interview schedule. The collected data were than analysis, tabulated and interpreted in the light of objectives for arriving at meaningful interpretation and findings.

## III. Result And Discussion

### The extent of adoption of market intelligence of the summer cabbage growers

Adoption is a decision making mental process to continue use of an innovation. In this study it means acceptance of full use of market intelligence by cabbage growers. It is rigidly stated that the adoption of practices of market intelligence is an instrument for making agriculture a better and more profitable enterprise. Considering this fact, an attempt has been made to find out the extent of adoption of market intelligence by the cabbage growers. The respondents were classified into three categories on the basis of  $\pm$  S.D. from the mean ( $\bar{X}$ ). The classification in this respect is presented in table 1.

**Table.1:** Distribution of cabbage growers according to their overall adoption of market intelligence (N=120)

S. No.	Extent of adoption quotient	Number	Per cent
1	Low adoption (below 26.74 score)	25	20.83
2	Medium adoption (between 26.75 to 50.38 score)	73	60.84
3	High adoption (above 50.38 score)	22	18.33
Total		120	100.00

Mean= 38.56

S.D. = 11.82

It is clear from table 1 that more than three-fifth of the respondents (60.84 per cent) had medium level of overall adoption quotient regarding market intelligence, followed by 20.83 per cent and 18.33 per cent of the respondents had low and high extent of overall adoption quotient of market intelligence, respectively. The probable reason might be that there is growing awareness about the cultivation of cabbage, which is done mainly for economic gain or for marketing purpose is known as commercial cultivation of cabbage.

**Practice wise extent of adoption of market intelligence of the cabbage growers**

The practice wise adoption of market intelligence of summer cabbage is depicted in table 2.

**Table 2:** Practice wise adoption of market intelligence of the respondents. (N = 120)

S. No	Practices of market intelligence	Total maximum score	Total obtained score	obtained mean score index	Rank
1	Grading	840	507	60.35	I
2	Packaging	1200	291	24.25	VI
3	Transportation	720	418	58.05	II
4	Demand	720	271	37.63	IV
5	Sources to know selling Price	4320	1423	32.93	V
6	Marketing channel	720	467	55.59	III

The data presented in table 2 reveal that in practice wise adoption of market intelligence grading practice, transportation facility and marketing channel had obtained 60.35 mean score index, 58.05 mean score index and 55.59 mean score index and ranked first, second and third respectively. Rest of the practices viz. Demand, sources to know selling price and packaging had obtained 37.63, 32.93 and 24.25 mean score index and ranked fourth, fifth and sixth rank, respectively.

It was observed from the above discussion that more than half of the respondents had adopted grading, transportation and marketing channel practices, while demand, source to know selling price and packaging practices were less adopted by the respondents. This indicated that there is a need for strengthening the training and extension services for cabbage grower farmers at the village level especially in respect to the market intelligence practices.

**Association between selected personal and socio-economic attributes of the summer cabbage growers and their extent of adoption of market intelligence**

The adoption or acceptance of market oriented agricultural is a unit act but a complex process involving sequence and thought of action. The action of individual farmers is governed by personal and socio-economical attributes with their level of knowledge and extent of adoption of market intelligence for market oriented cultivation of summer cabbage were worked out by calculating correlation of coefficient. The results in this regard are depicted as under.

**Table 3:** Association between the attributes of cabbage growers and their extent of adoption of market intelligence (N = 120)

S. No.	Independent Variables	Correlation-Coefficient ('r' value)
1	Age	- 0.23403**
2	Education	0.39108**
3	Size of family	0.09742(NS)
4	Education of family	0.38260**
5	Land holding	0.30409**
6	Annual income	0.23901**
7	Level of knowledge	0.85714**

\* = significant at 0.05 level  
 \*\* = significant at 0.01 level  
 NS = non significant

**Age and extent of adoption**

It is apparent from the data presented in the table 3 that the age of the cabbage growers had negative and highly significant correlation (- 0.23403\*\*) with their extent the adoption of market intelligence for market oriented cultivation of summer cabbage. Which reveal that the young farmers are more motivated and enthusiastic for adopting new technology on their farms. They are also take more risk as an agripreneur in agriculture enterprise.

**Education and extent of adoption**

The data presented in table 3 reflect that the extent of adoption of market intelligence of the cabbage growers regarding market oriented cultivation of summer cabbage had positive and highly significant (0.39108\*\*)

correlation with their level of education, which indicate that education play an important role in influencing the adoption of new technology by cabbage growers.

#### **Size of family and the extent of adoption**

As reveal from data presented in table 3 that there was non-significant association (0.09742<sup>NS</sup>) between size of family and extent of adoption of market intelligence.

#### **Education of family and the extent adoption**

The data presented in table 3 reflect that the extent of adoption of market intelligence of the cabbage growers regarding market oriented cultivation of summer cabbage had positive and highly significant (0.38260\*\*) correlation with their education of family, which indicate that education of family play an important role in influencing the adoption of new technology by cabbage growers.

#### **Size of land holding and the extent of adoption**

The data presented in table 3 clearly indicate that size of land holding of the cabbage grower's had positive and highly significant association (0.30409\*\*) with their extent of adoption of market intelligence of market oriented cultivation of summer cabbage.

Thus the study established the fact that size of land holding had influence on adoption level of market intelligence of cabbage cultivation. Majority of the cabbage growers were semi-medium to medium land holder farmers with good education and motivational sources might be the proper reason for significant association with adoption.

#### **Annual income and the extent adoption**

It is apparent from the data presented in the table 3 that annual income of the cabbage growers had positive and highly significant correlation (0.23901\*\*) with their extent of adoption of market intelligence of market oriented cultivation of summer cabbage.

The probable reason might be that sufficient income for purchasing equipment, manure, fertilizer, insecticides, weedicides etc. which leads them to adopt new cultivation of summer cabbage.

#### **The level of knowledge and extent of adoption**

It is obvious from the data presented in Table 3 that the extent of adoption of market intelligence of cabbage growers regarding market oriented cultivation of summer cabbage had positive and highly significant correlation (0.85714\*\*) with their level of knowledge. It indicates that knowledge level of cabbage growers increases, the adoption level also increases.

Thus it can be concluded that the level of knowledge should be consider as non monitoring input for profitable crop production as it is directly encourage the farmers for promotion and use of recent agricultural technology leads them towards profit maximization resulted in to adoption.

### **IV. Conclusion**

From the above overall discussion, it can be concluded that majority (79.27 per cent) of the respondents had medium to high level of overall adoption of market intelligence. More than half of the respondents had adopted grading, transportation and marketing channel practices, while demand, source to know selling price and packaging practices were less adopted by the respondents.

The independent variables *viz.*, education, education of family, land holding, annual income and level of knowledge of the summer cabbage growers were established positively and highly significant association with their extent of adoption of market intelligence. Age of the summer cabbage growers was associated negative and highly significant with their extent of adoption of market intelligence. The size of family of the summer cabbage growers was failed to establish any significant association with extent of adoption of market intelligence regarding market oriented cultivation of summer cabbage.

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