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# Extent of knowledge of organic sugarcane cultivation practices in Belgaum district of Karnataka state

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**Abstract**
A sample survey study was on extent of adoption of organic sugarcane cultivation practices in Belgaum district of (Karnataka) covering 2 taluks of 12 respondents purposively selected villages with120 randomly selected sample growers in order to evaluate Adoption of organic sugarcane growers and the related correlates sufficient previous researchers were reviewed to select the critical variables for developing the theoretical concept and deriving the hypothesis. The data were collected to observation, informal discussion and formal interview techniques with the help of predesigned tested instrument for recording the relevant information. The data thus, collected were processed, analyzed, interpreted in the light of objectives set forth with the application of suitable statistical test. Majority (61.66%) of respondents of respondents belonged to medium adoption category, followed by 31.50 and 15 per cent of the respondents belonged to low and high adoption categories, respectively. The mean adoption score of the respondents was 13.88.

**Keywords:** sugarcane, Belgaum district, cultivation

## Introduction
India is the seventh largest country in the world with geographical area of 328.73 million hectares representing 2.45 per cent of the world's geographical area. The total population of the country is 1027 million, which is equal to 15.70 per cent of world's population. Agriculture is the main sector in the country which provides livelihood to 67 per cent of the labour force contributes to 27 per cent of the nation's GDP and accounts for about 21 per cent share of total value of the country's export. Agricultural sector showed a growth rate of 2.67 per cent per annum during the period 1949-50 to 1995-906 (Anonymous, 2002). Agriculture is the predominant sector of Indian economy that meets the basic requirements, food, clothing and shelter of the people, which contributes 26 per cent to national income. The role of agriculture on the economy of India may be considered in the light of contribution it makes in three important aspects i.e., national income, employment and foreign exchange. India has a wide diversity of crops, among them food grains occupy a major portion of the land area, while sugarcane and fibre crops occupy relatively lesser acreage. Inspite of low acreage under sugarcane, it commands greater significance due to their remarkable contribution to our national economy through foreign exchange earnings. In the recent past, though the productivity of these crops has increased, the magnitude has been very small. In order to increase our national income, the organic production of such cash crops is imperative because of its importance in foreign exchange earnings.

Sugarcane (*Saccharam officinarum*) is native to India and has been cultivated from the historic times over the years and also it is a major commercial crop next to cotton in India. Sugarcane is most important source of sugar. Indian agro-climatic conditions are favourable for the production of sugarcane. Sugarcane plays a pivotal role in the agro-industrial economy of India and in fact on real economy, performance of sugar industry is directly related to the sugarcane production in India. India is an agrarian economy. India is the home to almost every kind of crop grown in the world Agriculture is the occupation of a majority of the Indian population. More than 60% of India's is under agriculture. Sugarcane is one of the most popular crops in India with more than 5 million hectares of land u cultivation. The average yield of sugarcane is more than 75000 kg/hectare with the total product exceeding 360 million tonnes in 2017-2018.

Karnataka comes next on the list at No 4. Karnataka has the rivers Krishna and Cauvery flowing through the state. A couple of huge irrigation projects on the Cauvery River ensure that Karnataka more than its share of the Cauvery water. This water is useful for the plantation of sugarcane in numbers in the districts of Shimoga, Mysore, Belgaum, and Chitradurga. With

a total sugarcane cultivable area of 4 lakh hectares, the output is around 34.6 million tonnes. Karnataka has their producing high-quality sugarcane with the yields touching 84 tonnes per hectare. The average yield India is around 75 tonnes per hectare.

**Methodology**

The research study on organic sugarcane cultivation practices was conducting during the year 2017-2018 in Belgaum district of Karnataka in the present investigation, descriptive type of research design was employed. The phenomenon had already occurred describe the charecterstics of a population or phenomenon being studied. the charecterstics used to describe the situation or population are situation being studied, are usually some kind of categorical schme. Belgaum district Extent of adoption of organic sugarcane cultivation practices in "Belgaum district of karnataka" study was started in Belgaum district during 2017-18 out of Among ten taluks of Belgaum district, Gokak and mudalagi block were selected based on highest area under sugarcane production. out of all villages 12 villages were selected and 120 respondents were randomly selected. random sampling method was used to obtained the 120 respondents respondents from the list obtained, in line of the objectives, the interview schedule was prepared and respondents were interviewed at their home and farms. 11 independents and one dependent variables were chosen for present study. In light of the objectivises, the interview schedules were prepared and respondents were interviewed there home and fields. The collected data were analyzed by using percentage, mean, standard deviation, and correlation coefficient (*r)*. A simple percentage technique was also applied to materialize the constraints and suggestions.

**Results and Discussion**

**Table 1:** Knowledge level of the organic sugarcane cultivation practices n=120

| Sl. No | Statement | Reponses | Fully correct | | Partially correct | | Not Correct | |
|---|---|---|---|---|---|---|---|---|
| **A** | **Organic Fertilizers** | | **F** | **%** | **F** | **%** | **F** | **%** |
| 1. | Knowledge about characteristics of Farm yard manure. | a. Rich in all nutrients | 70 | 58.33 | 30 | 25.00 | 20 | 16.66 |
| | | b. Slow effect | 98 | 81.67 | 12 | 10.00 | 10 | 8.33 |
| | | c. Cheaply available | 80 | 66.67 | 30 | 25.00 | 10 | 8.33 |
| 2. | knowledge about vermi-compost | a. End product of composting using earth worms | 60 | 50.00 | 40 | 33.33 | 20 | 16.66 |
| | | b. End product of composting using insects | 60 | 50.00 | 0 | 0.00 | 60 | 50.00 |
| | | c. End product of composting using microbes | 0 | 0.00 | 40 | 33.33 | 80 | 66.67 |
| 3. | Mention the crop that grown as green manure | a. *Susbania grandiflora* | 0 | 0.00 | 20 | 16.67 | 100 | 83.33 |
| | | b. *Subabul* | 25 | 20.83 | 70 | 58.33 | 25 | 20.83 |
| | | c. *Sunhemp* | 90 | 75.00 | 20 | 16.67 | 10 | 8.33 |
| 4. | Knowledge about the benefits of growing Lucerne as green manure. | a. Improves nitrogen content of the soil | 95 | 79.17 | 20 | 16.67 | 5 | 4.17 |
| | | b. Very good on drought prone soils | 12 | 10.00 | 10 | 8.33 | 98 | 81.67 |
| | | c. Reduces the nitrogen requirement of subsequent crops | 0 | 0.00 | 50 | 41.67 | 70 | 58.33 |
| B | Bio-fertilizers | | | | | | | |
| 5. | Name the bio-fertilizers used in crop production | a. Rhizobium | 30 | 25.00 | 20 | 16.67 | 70 | 58.33 |
| | | b. Azotobacter | 40 | 33.33 | 38 | 31.67 | 42 | 35.00 |
| | | c. *Azolla* | 50 | 41.66 | 38 | 31.67 | 32 | 26.67 |
| C | Viral Bio-pesticides | | | | | | | |
| 6. | When NPV should be sprayed. | a. During cool hours of the day | 15 | 12.50 | 20 | 16.67 | 85 | 70.83 |
| | | b. During sunny hours | 20 | 16.67 | 80 | 66.67 | 20 | 16.67 |
| | | c. Any time in the day | 30 | 25.00 | 20 | 16.67 | 70 | 58.33 |

Table 1 reveals that majority of the respondents (81.67%) farmers fully known slow effect towards characteristics of farm yard manures followed by cheaply available (66.67%) and rich in all nutrients 58.33%). However, 25.00 per cent of the respondents known partially regarding farm yard manures with rich in all nutrients and cheaply available whereas 08.00 to 15.00 per cent of the farmers not known the characteristics of the farm yard manures.

50.00 per cent of the farmers were fully known that vermicompost is end product of composting using earth worms. 33.33 percent respondents were partially known regarding vermicompost. 16.66 per cent of the respondents Not Known that vermicompost is a end product of composting using earth worms and 50.00 per cent of them had fully known about end product of composting using insects. Whereas 60.00 of the farmers were partially known about vermicompost using earth worms followed using microbes (33.33%). 16.66 percent 50.00 and 66.67 per cent of the farmers were not known regarding the vermicompost.

75.00 per cent of the respondents were fully known about sunhemp crop that grown as green manure followed by subabul (20.83%). 58.33 per cent of them were partially known about subabul is cop that grown as given manure followed by *Susbania grandiflora* and sunhemp (16.67%). 83.33 per cent of farmers were not known about the *Susbania grandiflora* crop followed by *subabul* (20.83%) and *sunhemp* (8.33%).

Majority of the respondents (79.17%) were fully known about the benefits of growing Lucerne as green manure which improves nitrogen content of the soil and ten per cent had fully known that it is a very good on drought prone soil. Meanwhile, 41.67 percent lucerne reduces the nitrogen requirement of subsequent crop. Only 16.57 per cent of them were partially known that it improves the nitrogen content of the soil. Whereas less per cent of the respondents (8.33%) were partially known that it is a very good drought prone soil.

81.67 per cent of the respondents were not known regarding the benefits of growing Lucerne as a green manure which is very good on drought prone soil. Whereas half of the respondents 58.33% of the not known that it reduces the nitrogen requirement of subsequent crops and only 4.17% of the respondents are not known that it improves nitrogen content of the soil. 58.33% of the not known about the Rizobium followed by Azotobacter (35.00%) and Azolla (26.67%). whereas 31.67 percent respondents are partially known about the Azotobacter and Azolla. 50.00 percent of the

respondents are fully known about azolla followed by Azotobacter (33.33%) and Rizobium (25.00%). About NPV It was observed from the about (70.83%) of the respondents not known during cool hours of the day. NPV spray (58.33%) respondents not known about any time in the day NPV spray. (16.67%) of the respondents are partially known during sunny hours of the NPV spray whereas (66.67%) of the respondents are partially known during sunny hours NPV spray, followed by (16.67%) of the respondents during sunny hours and any time in the day NPV spry. And (25.00%) of the respondents fully known during sunny hours NPV spray, (16.67%) respondents fully known during cool hours of the day followed any time in the day NPV spray.

It is a fact that, every year there are additions or improvements over previous practices due to continuous research in agriculture. Under such circumstances, it becomes difficult for all the farmers to cope up with the improvement in the organic cultivation practices of sugarcane. This might be one of the probable reason for majority of farmers to fall in medium and low knowledge category.

The other reason may be the lack of standardized package of practices on sustainable cultivation practices whereby it becomes difficult for the growers to acquire recent information on improved technologies.

The findings of the study were in agreement with the results obtained by Sriram and Palaniswamy (2000), and Goud (1998), Nagaraja (2002) [5] and Rathod (2005).

**Knowledge level of the organic sugarcane cultivation practices**

**Table 2:** Distribution of sugarcane Respondents according to their overall knowledge

| Category | Frequency | Percentage |
|---|---|---|
| Low | 27 | 22.50 |
| Medium | 74 | 61.66 |
| High | 19 | 15.84 |
| Total | 120 | 100 |
| Mean = 18.30 | | SD = 4.09 |

The data in Table 2 and figure depicts that the results reveals that, 61.66 per cent of the respondents had medium level of knowledge, whereas 22.50 and 15.84 per cent of respondents had low and high knowledge respectively. The mean knowledge score of the respondents was 18.30.

**Conclusion**

It is concluded that majority of the respondents were middle age group having education up to primary level and having medium level of farming experience, risk orientation, economic orientation, mass media exposure and majority of them were having low level of extension contact, innovativeness. It was found that majority of them had medium level of knowledge regarding cultivation practices of sugarcane crop. The major constraints reported by the respondents were difficulty in controlling pests and diseases, lack of marketing facilities, less knowledge about organic sugarcane cultivation practices, lack of knowledge about fund availability from the government. State Department of Horticulture and University of Agricultural and Horticultural Sciences should make integrated extension efforts (trainings, demonstrations, field days, literatures etc.), provide marketing facilities, Establish organic sugarcane growers clubs and groups to provide the required technical knowledge about cultivation practices of sugarcane growers for maximum adoption organic sugarcane cultivation.

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