

An Analysis Process of Sugar Recovery and Production Dependency on Soil Testing and use of Fertilizers



Computer Science

KEYWORDS :

Dr. Sudhakar D. Bhoite

Asso. Professor, Dept. Of M.Phil. SIBER School Of Management, Kolhapur, MS, India

ABSTRACT

A cane sugar mill is a factory that processes sugar cane to produce raw or white sugar. India has been known as the original home of sugar and sugarcane. The Indian sugar industry uses sugarcane in the production of sugar and hence maximum number of the companies. Sugar recovery is the most vital economic indicator of any sugar factory. It indicates the sugar production from per metric ton of sugarcane. A soil test is the analysis of a soil sample to check nutrient and contaminated content, composition, and other characteristics such as the acidity or pH level. A soil test can determine fertility, or the expected growth potential of the soil which indicates nutrient deficiencies. Soil testing is used to facilitate fertilizer composition and dosage selection for land.

Introduction

India is the largest single producer of sugar including traditional cane sugar sweeteners, khandsari and Gur equivalent to 26 million tons raw value followed by Brazil in the second place at 18.5 million tones. Even in respect of white crystal sugar, India has ranked No.1 position in 7 out of last 10 years. Maharashtra accounts for one third of the total Sugar production in India. In 2010-11, the state had Sugar Cane cultivation in area of 10.22 Lakh hectares. This has increased to 10.43 Lakh hectares in the year 2011-12. (<http://www.mahasugarcom.gov.in/SITE/Information/newInitiative.aspx>)

The sugar recovery mainly depends on the quality of cane that also includes types of cane variety, its maturity at the time of harvesting and total sugar losses during processing. In Western Maharashtra average sugar recovery of sugar factory ranges from 9% to 13.5% per ton. Computerized harvesting helps to improve sugarcane recovery growth.

Sugar cane recovery helps factory in producing more sugar. It is beneficial to improve economic position of factory.

A soil test can find out fertility, or the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non-essential trace minerals. Soil testing is often performed by labs that offer a variety of tests. Soil testing is used to help fertilizer composition and dosage selection for agricultural land.

Objectives of the study

- To study existing cane recovery process.
- To study and analyze manual procedures adopted for sugarcane recovery development.
- To interpret the collected data.
- To provide remedial solution if necessary.

Scope of the research study

- The Topical scope is restricted to “
- Geographical scope is restricted to Shirol taluka.
- Analytical scope is to develop computerized model for sugarcane recovery development for “Shree Datta SSSK Ltd., Shirol”.

Hypothesis of the study

We have going to through study. We have following points set forth :

- Sugar cane recovery development did not depend on soil testing.
- Sugar cane recovery development did not depend on fertilizers suggested in soil testing

Research Methodology

The study is based on facts and information collected by using survey which was conducted through questionnaire and interviews.

Sampling Area :

For the study researcher has selected Shree Datta SSSK Ltd., Shirol in Kolhapur District.

Sampling Size :

There are 20,000 farmers who send sugar cane to industry. The researcher has used sample size as 4000 significance level.

Sampling Design :

In order to select sample for survey the Cluster sampling method is used. As there are 10 gat offices in different Taluka. So there are 10 clusters .We choose Quota sampling method and distribute 400 questionnaires in each gat office And for selection of farmer we use random sampling method so we cover all the population.

Data Collection :

In a view of given objectives the present research work will be carried out with the help of primary data and secondary data.

Primary Data :

Primary data can be collected through Questionnaires. Questionnaires will be filled for purpose of data collection and pre-tested for measuring review on recovery of sugar cane development with reference to Shree Datta SSSK Ltd., Shirol in Kolhapur District. Data is will be collected through communicating with administrative staff and farmers and observation of researcher.

Secondary Data :

Secondary data will be collected from Shree Datta SSSK Ltd., Shirol in Kolhapur District., magazines, journals and through internet.

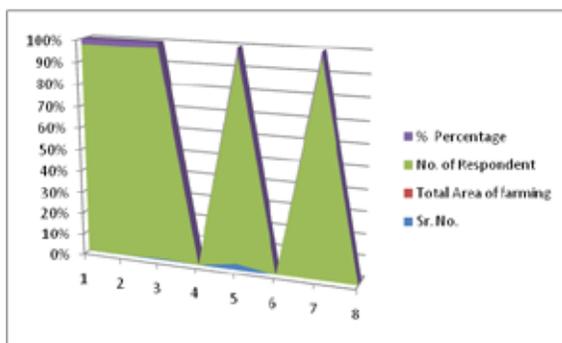
Data Collection Technique :

Questionnaire were prepared for all respondents i.e. for farmers, staff members. Technique that will be used for distribution and collection of questionnaire

Data Analysis And Interpretation

Table No A Total Area Of Farming

Sr. No.	Total Area of farming	No. of Respondent	% Percentage
1	Up to 1 acre	891	22
2	2 to 5 acre	2507	63
3	6 to 10 acre	471	12
4	11 and above	131	03
	Total	4000	100

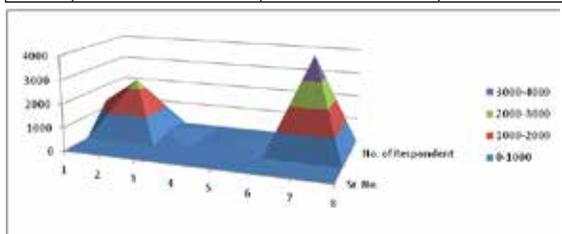


The table shows total area of farming. The data represents that out of total (100%), 63% respondents having 2 to 5 acre total area of farming, 22% and 12% respondents having up to 1 acre and 6 to 10 acre area of farming respectively. Only 3% respondents having 11 and above acre total area of farming.

Majority of farmers having 2 to 5 acre total area of farming.

Table No B Sugar Cane Farming Cultivation Area

Sr. No.	Area of sugar cane farming	No. of Respondent	% Percentage
1	Up to 1 acre	1298	32
2	2 to 5 acre	2371	59
3	6 to 10 acre	271	07
4	11 and above	60	02
	Total	4000	100

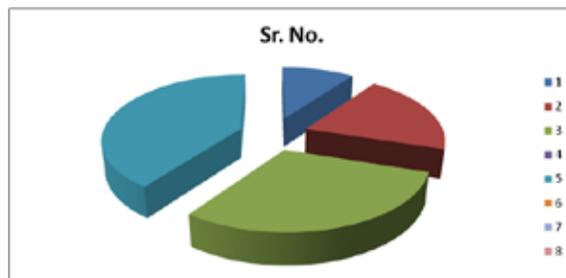


The data represents total area of sugar cane farming. The data represents that out of total (100%), 59% respondents are having 2 to 5 acre total area of sugar cane farming, 32% and 7% respondents are having up to 1 acre and 6 to 10 acre area of sugar cane farming respectively. Only 2% respondents are having 11 and above acre total area of sugar cane farming.

Majority of farmers are having 2 to 5 acre total area of farming and very few farmers are having 11 and above acre total area of sugar cane farming.

Table No C Sugar Cane Type Which Is Cultivated

Sr. No.	Cultivated Sugar cane Type	No. of Respondent	% Percentage (out of 100)
1	Adasali	3367	84
2	Pre Seasonal	702	18
3	Suru	62	2
4	Khodava	791	20

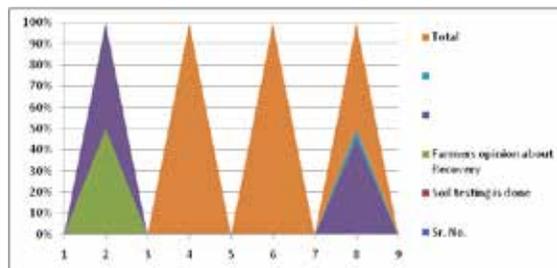


The figure indicates sugar cane type which is cultivated by farmers. The above data exhibits that out of 100%, 84% cane growers cultivated Adasali sugar cane type, 18% and 20% cane growers are cultivated Pre seasonal and Khodava sugar cane type respectively. Only 2% cane growers cultivated Suru sugar cane type.

Thus it reveals that most of farmers are preferred Adasali sugar cane type and very less farmers are preferred Suru sugar cane type.

Table No D Farmers Opinion About Effect Of Soil Testing On Recovery

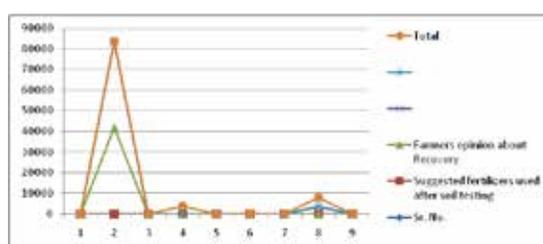
Sr. No.	Soil testing is done	Farmers opinion about Recovery			Total
		7-9	10-12	13-15	
1	Yes	-	3227 (80.67%)	331(8.27%)	3558
2	No	47 (1.17%)	395 (9.87%)	-	442
	Total	47	3622	331	4000



The data is associated to soil testing made by farmers of their soil which is used for cultivation of sugar cane. The survey data exhibits that 89% of respondents go for soil testing and 11% respondents not done soil testing. Most of the farmers (89%) preferred soil testing before plantation of sugar cane for better yield.

Table No E – Farmers Opinion About Effect On Recovery After Using Suggested Fertilizers After Soil Testing

Sr. No.	Suggested fertilizers used after soil testing	Farmers opinion about Recovery			Total
		7-9	10-12	13-15	
1	Yes	-	3480 (87%)	331(8.27%)	3811
2	No	47 (1.17%)	142 (3.55%)	-	189
	Total	47	3622	331	4000



The above data is about farmers use suggested fertilizers after

soil testing which are necessary for better yield and effect on recovery. The above survey represent 87% farmer's use suggested fertilizers after soil testing so they get 10-12% recovery. Also 8.27 farmers use suggested fertilizers after soil testing so they get 13-15% recovery. 3.55% farmers not use suggested fertilizers after soil testing but getting 10-12% recovery and 1.17% farmers also not use suggested fertilizers and they get only 7-9% recovery. Most of the farmers use suggested fertilizers after soil testing so they get better recovery.

Results And Discussion:

- According to the study the majority of farmers having 2 to 5 acre total area of farming.
- Majority of farmers are having 2 to 5 acre total area of farming and very few farmers are having 11 and above acre total area of sugar cane farming.
- Most of farmers are preferred Adasali sugar cane type and very less farmers are preferred Suru sugar cane type.
- Most of the farmers (89%) preferred soil testing before plantation of sugar cane for better yield.
- Most of the farmers use suggested fertilizers after soil testing so they get better recovery.
- With the help of soil testing and proper supply of fertilizers as suggested in soil testing, soil testing is effective for better improvement in yield and recovery for farming society.

Suggestions

Soil testing is necessary for better recovery.

Also after using suggested fertilizers in soil testing farmer can get better improvement in yield and recovery.

REFERENCE

1. <http://www.mahasugarcom.gov.in/> | 2. <http://en.wikipedia.org> | 3. Reports generated by Indian researchers | 4. Research Methodology - C. R. Kothari | 5. Indian Research Journal | 6. The Indian Sugar Industry Sector Roadmap 2017 June 2007 |