

“A Design and Development of Computerized Model for Sugar Cane Recovery for a Sugarcane Industry”

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Abstract

Computers have made the world a smaller place like a village. Due to their speed, accuracy, memory and other characteristics, computers are used in all spheres of life. These machines are used on a large scale in Banking Sector, Railway Insurance Companies, Hospitals, Business Houses, Universities, Transportation, Engineering and Science etc. Computers have become an important tool for keeping databases, filing systems, track records. It has made record keeping and accounting an easy task. As sugar recovery is the most vital economic indicator of any sugar factory. It indicates the sugar production from per metric ton of sugarcane. 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.

Keywords: Sugarcane, Sugar recovery, Cane variety.

Introduction

In today’s scenario computerization has become regular routine application in every once life. The process of computerization involves the process of taking activities or tasks not previously done on the computer and shifting them to being done on the computer. Or computerization means certain operations to be performed by a computer as a replacement for human operations on paper to keeping customer records in the computer is an example of computerization. India has been known as the original home of sugar and sugarcane. Indian mythology supports the above fact as it contains legends showing the origin of sugarcane in Maharashtra Sugar Industry is one of the most notable and large-scale sugar manufacturing sectors in the country.

Significance

Computers have become most important in today’s modern world. In the present scenario Computers are of having a great significance. Personal computers have helped workers in business to perform their jobs more efficiently. Since from their introduction in 1980sin business function, routine activities such as sending memos and basic correspondence is being done by using an email. Employees can search information from the Internet with a click of the button. The importance of computers in business includes, for example, a small business can maintain a database of customers, prepare order list, maintain stock of good in hand, process purchase order as and when required. The business can then send coupons or special promotions to these customers by email. Companies also save on paper costs when interacting through their computers. Also, a small manufacturing company can automate part of

its production line with computers. The automation process would help the manufacturer cut back on labor costs.

Computers have become an important tool for keeping databases, filing systems, track records. It has made record keeping and accounting much easier than it ever was. It helps an organizations' to save times. Computers are also useful for communication, commonly used for sending mail.

Sugar Industry

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. Indian mythology supports the above fact as it contains legends showing the origin of sugarcane. India is the second largest producer of sugarcane next to Brazil. Presently, about 4 million hectares of land is under sugarcane with an average yield of 70 tons per hectare. The Indian sugar industry uses sugarcane in the production of sugar and hence maximum number of the companies is likely to be found in the sugarcane growing states of India including Uttar Pradesh, Maharashtra, Gujarat, Tamil Nadu, Karnataka, and Andhra Pradesh. There are 453 sugar mills in India. Maharashtra Sugar Industry is one of the most notable and large-scale sugar manufacturing sectors in the country. The pace of growth of sugar manufacturing has been massive over the past few years. The latest statistics of sugar production in Maharashtra indicates that this state this doing better than the other states in the country. The Sugar industry in Maharashtra is highly popular in the cooperative sector, as farmers own a portion in the sugar factories

Shree Datta SSSK Ltd., Shirol situated at Dattanagar, Tal-Shirol Dist-Kolhapur Maharashtra State near holly place called Narsinghwadi a famous pilgrimage of Lord Shree DATTA. The industrial complex is spread over an area of 235 acres. A pioneer efforts were made to start **Shree Datta SSSK Ltd., Shirol**; by Late Shri Vishwasrao Ghorapade, Late Shri Dinkarrao Yadav, Late Shri Dattajirao Kadam and Shri. Appasaheb alias S.R.Patil, who is present Chairman and one of the founder members.

Cane Development Activities in Shree Datta SSSK Ltd., Shirol Factory implemented various cane development activities thinking with a view to increase per hectare yield by reducing cost of cultivation and keeping soil in good fertile.

Following are phases carried out for cane development;

1. Soil Testing - 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.
2. Green Manu ring- Green manures increase the percentage of organic matter (biomass) in the soil, thereby improving water retention, and other soil characteristics.
3. Supply of Sugarcane Seed Material
4. Supply of Chemical Fertilizers - Chemical Fertilizers is added to a soil to supply one or more plant nutrients essential to the growth of plants.

5. Supply of Bio-Fertilizers - The microorganisms in bio-fertilizers restore soil's natural nutrient cycle and build soil organic matter. Through the use of bio- fertilizers, healthy plants can be grown, while enhancing the sustainability and the health of the soil.

6. Supply of Organic Manure - Manures adds the fertility of the soil by adding organic matter and nutrients, such as nitrogen, that are trapped by bacteria in the soil. For example after decomposition of organic matter like cow-dung which replenishes the soil with essential elements and add humus to the soil.

New Technologies provided by Shree Datta SSSK Ltd., Shirol

The new technologies adopted by Datt Sugar Factory for farmers to get better yield. They provide following technologies to the farmers to get better yield.

1. Sugarcane Planting Technology
2. Seed Material / Poly bag Seedlings
3. Use of Fertilizer On The Basis Of Soil, Water and Leaf Analysis Report
4. Drip Irrigation
5. Supply of Agriculture Implements

Products produced in Shree Datta SSSK Ltd., Shirol

White Sugar, Distillery, Ethanol, Compost, Co-Generation

Sugar Cane Recovery Meaning

Sugar recovery is the most vital economic indicator of any sugar factory. It indicates the sugar production from per metric ton of sugarcane. 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.

Significance of the Study

Computer become part of human's day today life. Computerized system helps to people, farmers and management or end users. Due to computerization in sugar cane factory farmers can get cane information, soil testing report quickly and accurately. Management can get different reports as per their needs. Computerization helps in storing large volume of data and process that voluminous data, allows to generate different types of reports, which can be further used by different levels of management. By having specialized cane development recovery module the end user can get different types of reports related to recovery growth. Above study focuses on existing system for sugar cane recovery development and effect on sugar cane recovery development due to computerization model. Through the study, can give suggestions on topic of problem if necessary.

Hypothesis of the Study

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

1. Sugar cane recovery development did not depend on soil testing.
2. Sugar cane recovery development did not depend on sugar cane type and variety.

3. Sugar cane recovery development did not depend on fertilizers and watering duration.
4. Computerized model benefits for sugar cane recovery development process.

Objectives of the Study

1. To study existing cane recovery process.
2. To study and analyze manual procedures adopted for sugarcane recovery development.
3. To provide computerized model for recovery development.
4. To interpret the collected data.
5. To provide remedial solution if necessary.

Scope on the Research Study

The Topical scope is restricted to “A Design and Development of Computerized Model for Development on Sugar Cane Recovery with Special Reference to Shree Datta SSSK Ltd., Shirol”. Geographical scope is restricted to Shirol taluka. Analytical scope is to develop computerized model for sugar cane recovery development for “*Shree Datta SSSK Ltd., Shirol*”.

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 at 50% significance level.

Sampling Design: In order to select sample for survey the random sampling method used for selection.

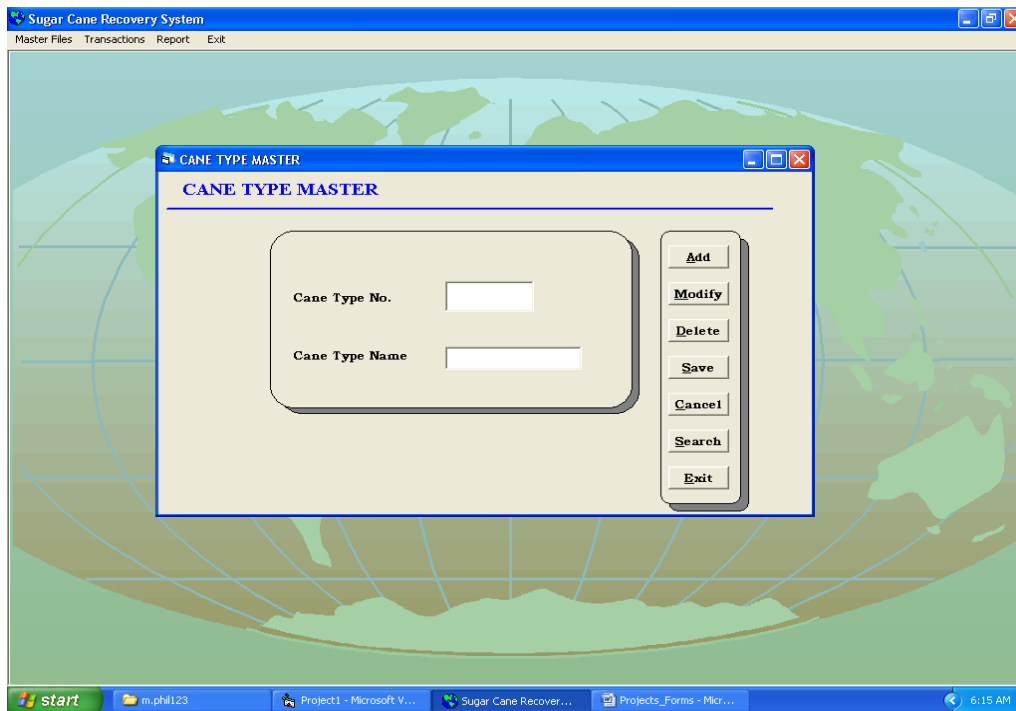
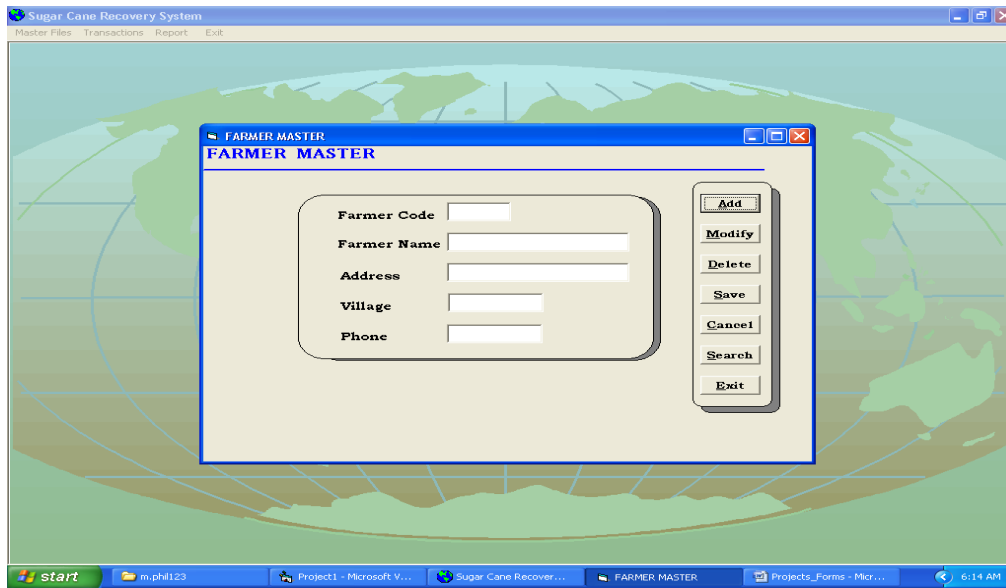
Data Collection: In a view of given objectives the present research work will be carried out with the help of primary data and secondary data.

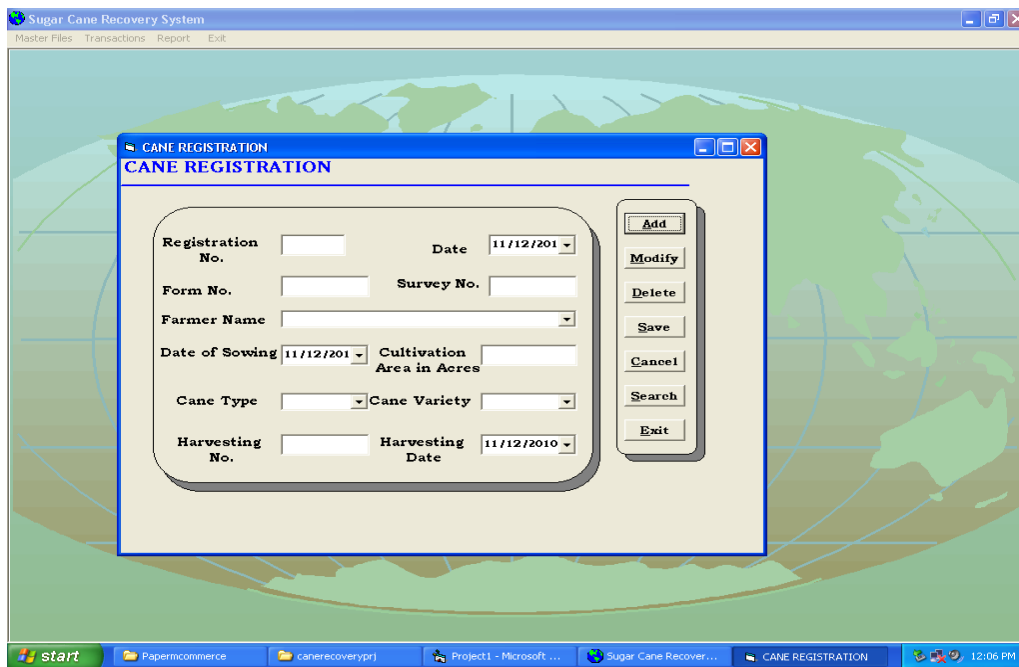
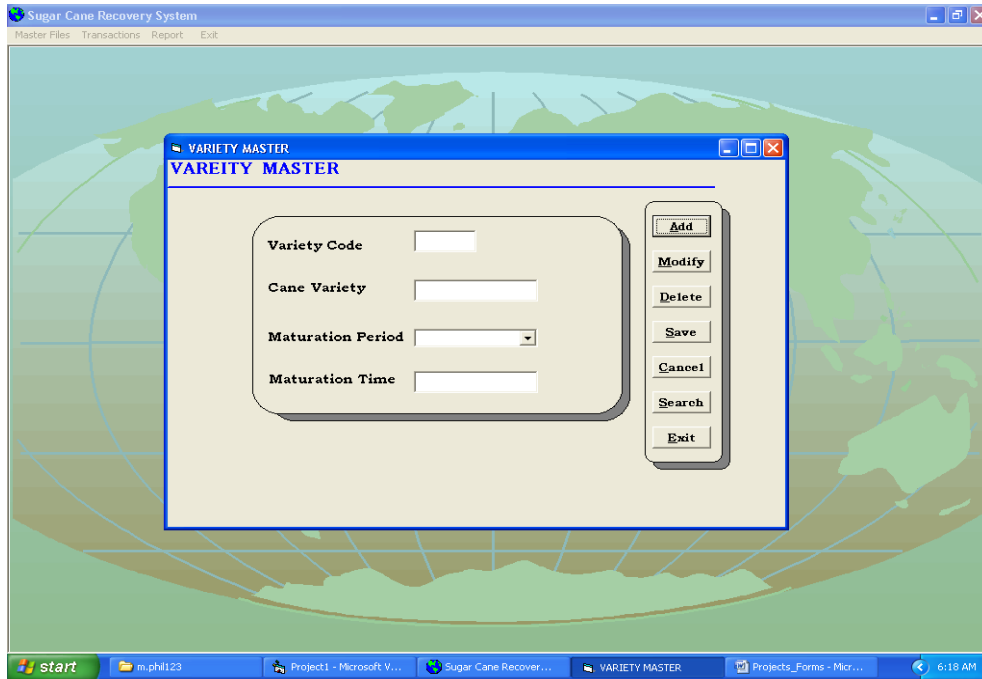
Primary Data: Primary data can be collected through Questionnaires. Questionnaires will be filled for purpose of data collection and pre-tested for measuring review on recovery of sugar cane development with reference to **Shree Datta SSSK Ltd.**, Shirol in Kolhapur District. Data is will be collected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

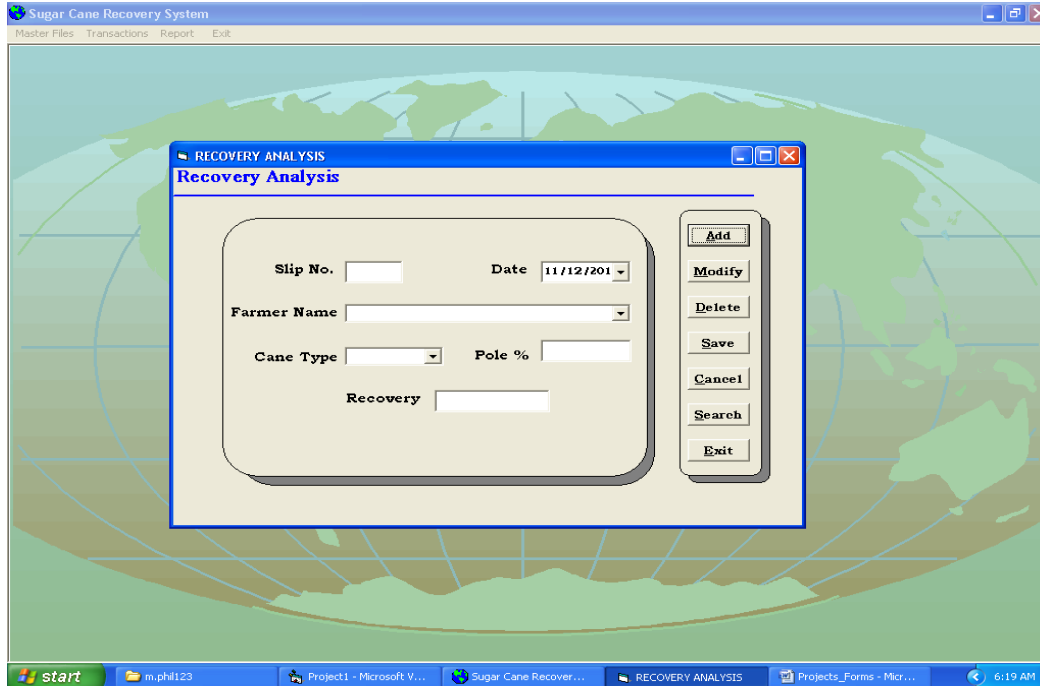
Secondary Data: Secondary data will be collected from **Shree Datta SSSK Ltd.**, Shirol in Kolhapur District., magazines, journals and through internet.

Data Collection Technique: Questionnaire is prepared for all i.e. for farmers, staff and management members. Technique that will be used for distribution and collection of questionnaire are as follows.

Data Presentation: The collected data will be presented by using developed data entry forms & processed to generate different results.







Conclusion

The study has revealed that such a Computerized Model for Sugarcane recovery helps a lot in data storage, process and to generate various types of outputs quickly. Even the performance also increases very sharply. This Model has proved that the farmers can have better yield in terms of sugar by time-to-time and proper supply of water, fertilizers required, and monitoring the growth of sugarcane crop. Thus it proves to be beneficiary in sugar cane farmer's point of view.

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