

Development of Advanced Implements for Sugarcane Crop

Project Report
Submitted by

Dr. K. S. Barman
Assistant Professor
Shri Ram College
Muzaffarnagar

funded by

Triveni Engineering and Industries Ltd.
Muzaffarnagar



Shri Ram College
Muzaffarnagar **CERTIFIED**

KS

KG
Principal
Shri Ram College
Muzaffarnagar

24/1

Ref: To

05th June, 2019
Date:

Director
Shri Ram College,
Muzaffarnagar

Approval of Project

Dear Sir,

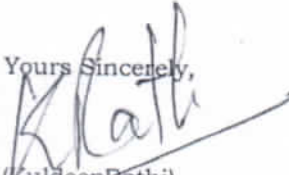
I hope you are doing well.

I want to inform you that we have approved your project 'Development of Advance Implements for Sugarcane Crop'. We hope your project will bring growth and development in this field.

We are hereby enclosing a Cheque of Rs 15000, (Ch. No. 360012, Dated 4/6/2019) in favour of Shri Ram Charitable Trust.

You are requested to submit the Project Report on the completion of work.

Yours Sincerely,


(Kuldeep Rathi)
General Manager (Sugarcane)

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Principal
Shri Ram College
Muzaffarnagar


Co-ordinator
IQAC, Shri Ram College,
Muzaffarnagar

Utilization Certificate

S.N.	Detail of sanction of Fund with Project name and Duration	Amount
1.	90-Day project on Development of Advance Implements For Sugarcane crop, Date of Sanction of Fund- 05-06-2019 as per Sanction Letter	15000.00
	TOTAL	15000.00

It is Certified that out of Rs. 15000.00 (Rs. Fifteen Thousand Only) of grants sanctioned by **M/s Triveni Engineering & Industries Ltd** during the year 2019-20 in favor of **Shri Ram College, Muzaffarnagar**, a sum of Rs. 15000.00 has been utilized for the purpose of the project for which it was sanctioned and that the balance of Rs. Nil remaining unutilized at the end of the year has been surrendered. The Extra amount (If any) is met out by Shri Ram College.

2. Certified that we have satisfied our self that the conditions on which the grant was sanctioned have been duly fulfilled/are being fulfilled and that we have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of checks exercise-

1. Checking of cash book
2. Checking of payment vouchers.
3. Checking of expenses bills.

For Shri Ram College


Secretary

Place: Muzaffarnagar

Date- 29-08-2019


Co-ordinator
IQAC, Shri Ram College,
Muzaffarnagar

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Principal
Shri Ram College
Muzaffarnagar

For Goel Rakesh & Co.
Chartered Accountants



Rakesh Kumar Goel
Proprietor

M. No. 071858

FRN : 003374C

Development of Advanced Implements for Sugarcane Crop

In India considerable R & D work for design and development of agricultural implements and machinery for few operations have been developed. However the adoption of these implements and machinery have not been up to the desired level. Thus there is a considerable mechanization gap, especially in the area of sugarcane planting, interculture, plant protection, harvesting and ratoon management. Therefore it is necessary that concentrated efforts be made for adoption, development and popularization of sugarcane machinery for various operations. Here we have different operations of sugarcane cultivation along with their mechanization.

In the present context of globalisation, ways and means have to be further evolved to produce more sugar per unit area, time and input in order to keep pace with the population growth while preserving the soil and water resources. For this purpose it has been experienced that use of modern machinery is inevitable. Use of machinery helps in labour saving, ensures timeliness of operation, reduces drudgery, helps in improving quality of work, reduces cost of operation and ensures effective utilization of resources. In case of sugarcane crop although machinery has been developed, however the adoption of these implements and machinery have not been up to the desired level. Thus there is a considerable mechanization gap, especially in the area of sugarcane planting, interculture, harvesting and ratoon management. Therefore it is necessary that concentrated efforts be made for adoption, development and popularization of sugarcane machinery for various cultural operations. In this work the mechanization of different cultural operations for sugarcane cultivation are discussed.


- Sugar cane cutter planter
- Trench planter
- Raised bed seeder
- Sugarcane cum potato planter

Sugar Cane Cutter Planter:

This machine is driven by a tractor of 35 or more horsepower and with the help of this device, pieces of sugarcane seeds are also harvested and other tasks of sowing sugarcane such as, making husks, putting sugarcane pieces in the turf, Applying manure and medicine and pressing soil on the cistern are done simultaneously. The two rows of sugarcane sowing machines are equipped with a deep groove digger to dig deep litter. The power is transferred from the PTO of the tractor to cut the pieces of sugarcane. With the help of four persons, one hectare of field can be sown in about 5 hours by this machine. By using this device, about 50 percent is saved in the cost of sowing work. This device can be operated with 35 horse power tractor. Successful testing of this device has been done in the institute field and farmers' fields. This machine has been adopted by the farmers.

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Trench Planter:


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In the trench method, all the work of sowing sugarcane is performed simultaneously by the trench planter. This device opens a 20.25 cm deep and 45 cm wide groove (trench) and sows sugarcane in two drains at a distance of 30 cm in a trench. The next trench is opened at a distance of 4 to 5 feet. This machine performs other tasks of sowing sugarcane such as slicing sugarcane, putting the pieces in the drain, pouring manure and termite medicine and covering the pieces with soil etc. With the help of this device, all the work of sowing one hectare of sugarcane can be completed in 5 hours with the help of 4 workers.

Sugarcane cum Potato Planter:

Mechanization of sugarcane cultivation has yet to play its role in India. Traditional tools and equipments are still common in use for Sugarcane cultivation. Size of holding is one of the reasons for low level of mechanization.

Sugarcane planting and harvesting are the important area, which require introduction of sugarcane machinery, its refinement and adoption based on location specific requirements. Prototypes already developed need to be tried at different locations and commercialized after carrying our necessary refinements. Introduction of costly machinery through custom hire can help the sugarcane growers to get the benefits of mechanization. A number of useful equipments for sugarcane culture have been developed and demonstrated on a limited scale at different places. There is no doubt these pieces of equipments are labour and cost saving and will definitely make sugarcane cultivation more profitable besides reducing human drudgery. There is a need for concerted efforts by different organisations including sugar industry, State Agricultural Universities, Research Organisations, Cane departments, etc., for popularising these equipments. All these useful time, labour and cost saving devices can be taken to the farmer fields with the joint efforts of all those involved in the pursuit of increasing sugarcane productivity. Suitable liaison with the implement manufacturing industries be developed and prototypes be fabricated and demonstrated on a large scale in order to create awareness among the farmers.

Later on, private entrepreneurs could be encouraged to provide these useful equipments to the farmers on custom hiring service basis. The next phase of revolution in Indian agriculture is bound to come through the use of improved agricultural machinery suiting to local conditions. Concerted efforts are required to formulate a strategy for mechanising sugarcane production in India with the sole aim of increasing production and productivity per unit time, area and input at reduced cost of unit operation. This is must if we have to survive in the highly competitive international sugar market.

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