http://demosl56.rvsolutions.in/ernet/website-039/sites/default/files/documents/hareda-191468979.pdf

HAREDA INVITES
EXPRESSION OF INTEREST

Demonstration of Draught Animal Power Generation Projects

The Department of New & Renewable Energy, Govt. of Haryana invites EOI from various Entrepreneurs/ R&D centers/ Technology providers across the country who are working in the field of generation of Electrical Energy from Draught Animals. They are invited for Demonstration of their Draught Animal based Power Generator in Haryana. The proposals on plain papers containing details of technology, cost per unit power generated, infrastructure required, project cost, techno-economic analysis, time required for project completion etc can be submitted by the entrepreneurs via Post or E-mail latest by 25.04.2017 by 5:00 P.M.

Director,
New & Renewable Energy Department
HAREDA, Haryana

HARYANA RENEWABLE ENERGY DEVELOPMENT AGENCY (HAREDA)
(DEPARTMENT OF NEW & RENEWABLE ENERGY, HARYANA)
Akshay Urja Bhawan, Institutional Plot No. 1, Sector-17, Panchkula
PHONE: 0172-2585733, 2585433 EPBX: 0172-2587233, 2587833 Fax No.0172-2564433
Email: drehareda@gmail.com Website: www.hareda.gov.in

http://dspace.thapar.edu:8080/jspui/bitstream/10266/4177/4/4177.pdf

Integration of Animal Power with other Renewable Energy Systems for Off-Grid Stations

A Dissertation submitted in fulfillment of the requirements for the degree of

MASTER OF ENGINEERING
in
Electronic Instrumentation and Control Engineering

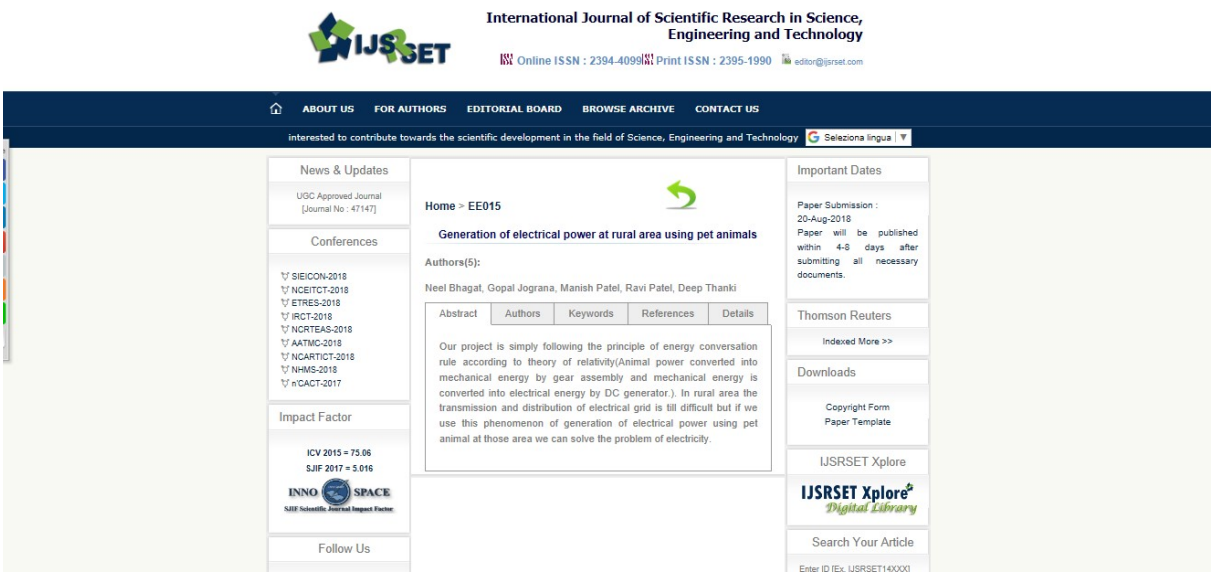
Submitted by
Harpreet Sharma
(801451008)

Under the guidance of
Mr. Mooninder Singh
Assistant Professor,
EIED, Thapar University,
Patiala

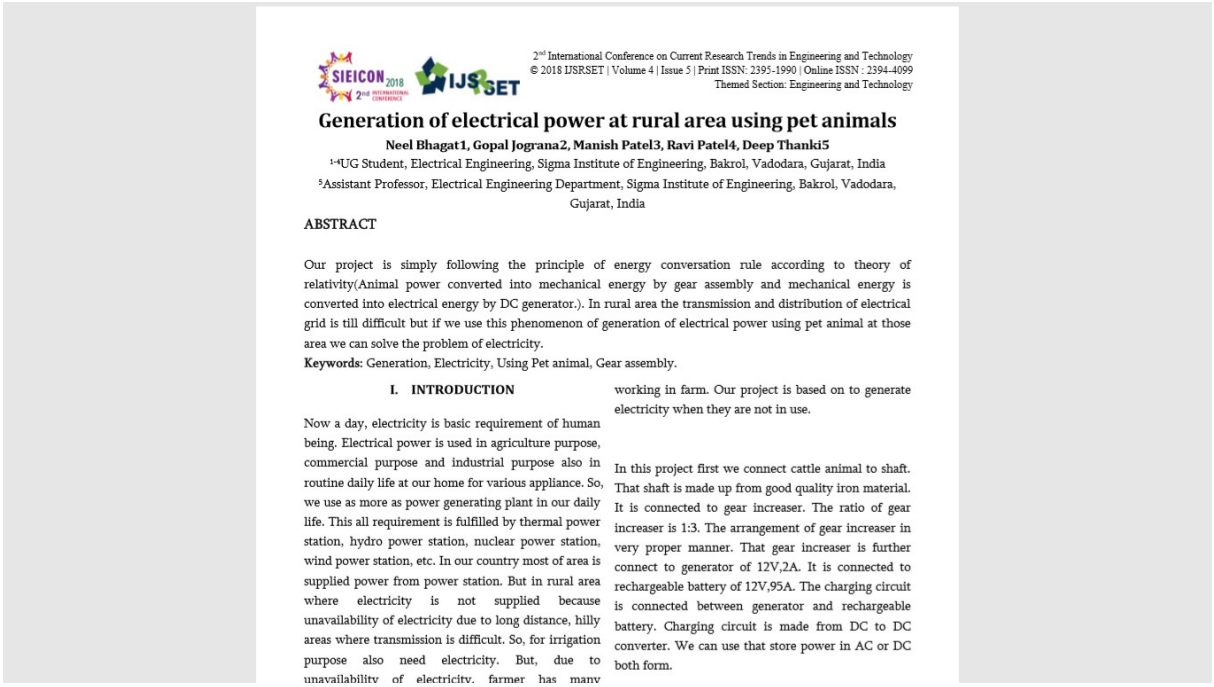
Electrical And Instrumentation Engineering Department
Thapar University, Patiala
(Declared as Deemed-to-be-University u/s 3 of the UGC Act., 1956)
Post Bag No. 32, Patiala 147004
Punjab (India)

July, 2015

http://ijsrset.com/EE015



http://ijsrset.com/paper/4342.pdf



2nd International Conference on Current Research Trends in Engineering and Technology
© 2018 IJSRSET | Volume 4 | Issue 5 | Print ISSN: 2395-1990 | Online ISSN : 2394-4099
Themed Section: Engineering and Technology

Generation of electrical power at rural area using pet animals

Neel Bhagat1, Gopal Jograna2, Manish Patel3, Ravi Patel4, Deep Thanki5
[1-4]UG Student, Electrical Engineering, Sigma Institute of Engineering, Bakrol, Vadodara, Gujarat, India
[5]Assistant Professor, Electrical Engineering Department, Sigma Institute of Engineering, Bakrol, Vadodara, Gujarat, India

ABSTRACT

Our project is simply following the principle of energy conversation rule according to theory of relativity(Animal power converted into mechanical energy by gear assembly and mechanical energy is converted into electrical energy by DC generator.). In rural area the transmission and distribution of electrical grid is till difficult but if we use this phenomenon of generation of electrical power using pet animal at those area we can solve the problem of electricity.

Keywords: Generation, Electricity, Using Pet animal, Gear assembly.

I. INTRODUCTION

Now a day, electricity is basic requirement of human being. Electrical power is used in agriculture purpose, commercial purpose and industrial purpose also in routine daily life at our home for various appliance. So, we use as more as power generating plant in our daily life. This all requirement is fulfilled by thermal power station, hydro power station, nuclear power station, wind power station, etc. In our country most of area is supplied power from power station. But in rural area where electricity is not supplied because unavailability of electricity due to long distance, hilly areas where transmission is difficult. So, for irrigation purpose also need electricity. But, due to unavailability of electricity, farmer has many working in farm. Our project is based on to generate electricity when they are not in use.

In this project first we connect cattle animal to shaft. That shaft is made up from good quality iron material. It is connected to gear increaser. The ratio of gear increaser is 1:3. The arrangement of gear increaser in very proper manner. That gear increaser is further connect to generator of 12V,2A. It is connected to rechargeable battery of 12V,95A. The charging circuit is connected between generator and rechargeable battery. Charging circuit is made from DC to DC converter. We can use that store power in AC or DC both form.

http://indiabizleads.in/ecofriendlyenergydevices

IndiaBizLeads

Home About B2B Trade Leads Post Buy Requirement Contact

Find Global Product Buyers / People Looking For Services
Post your Product / Service Requirement

Animal Driven Multi Purpose Energy Device

Durga engineering, Kanpur

Multi purpose animal driven (bull, buffalo, bullock, donkey , camel , mule etc...) driven device which can run many device which is run by electric power just like- Chopper machine, Chakki, spaler, laith machine, Compressor, cotton machine, Irrigation Pump.

Water Pump

Centrifugal Pump :

- Can lift water from 30-40 feet depth for this purpose 8 H.P. motor is required. Similarly this type of work done with the help of 1 pair of bullock/buffalo by using this device.
- The problem of dependency on diesel & electric power for irrigation purpose could end by using this type of device. Animal based Sustainable Economy gives self reliance that is no inflation due to international linked price of oil , coal or uranium.
- The cost of animal driven centrifugal pump is very cheap as compare to solar irrigation pump or diesel pump. For F.Y. 2015-16 Finance minister has alloted INR 400 Crores for 1 Lakh solar power driven agricultural pump sets and water pumping stations. Rs. 400 Crores for 1 Lakh solar pumps translate to about Rs. 40,000 per pump. Most of the agricultural water pumps are above 3 Horse Power(HP), with 5 HP pumps being very common. The cost of a 5 HP AC solar(approximately 4.8 kWp) water pump is roughly Rs. 5 Lakh !! That means that Rs. 40,000 per pump incentive translates to less than 10% of the cost of a 5 HP pump. This seems inadequate, unless this amount is over and above the 30% subsidy already provided by the MNRE.
- By keeping and feeding drought cattle for this purpose , farmer's will also get in return valuable Dung & Urine to fertlie land. Organic manure (in place of chemical fertilizers) will rejuvenate soil adding to its productivity and yield. So the complete Nutrient Cycle will be restored partially (as far as cattle is concern). This will empower rural India, naturally. Buffalo dung Cake can also be used as Cooking Fuel to reduce dependancy on Kerosene OR LPG

Write To US / Sponsor a Irrigation Pump Cum Multi Purpose Energy Device (50% amt. as Sponsorship + 50% farmer's contribution.)

Note : Sponsorship programme will be carried out with the help of NGO and hence details will be sent to interested party accordingly.

* **Fields are compulsory.**

* Enter Name / Company Name :

* Enter Your City :

* Tel./Mobile With Country Code :

* Enter Email :

* Select Purpose :

Select

* Enter Message :

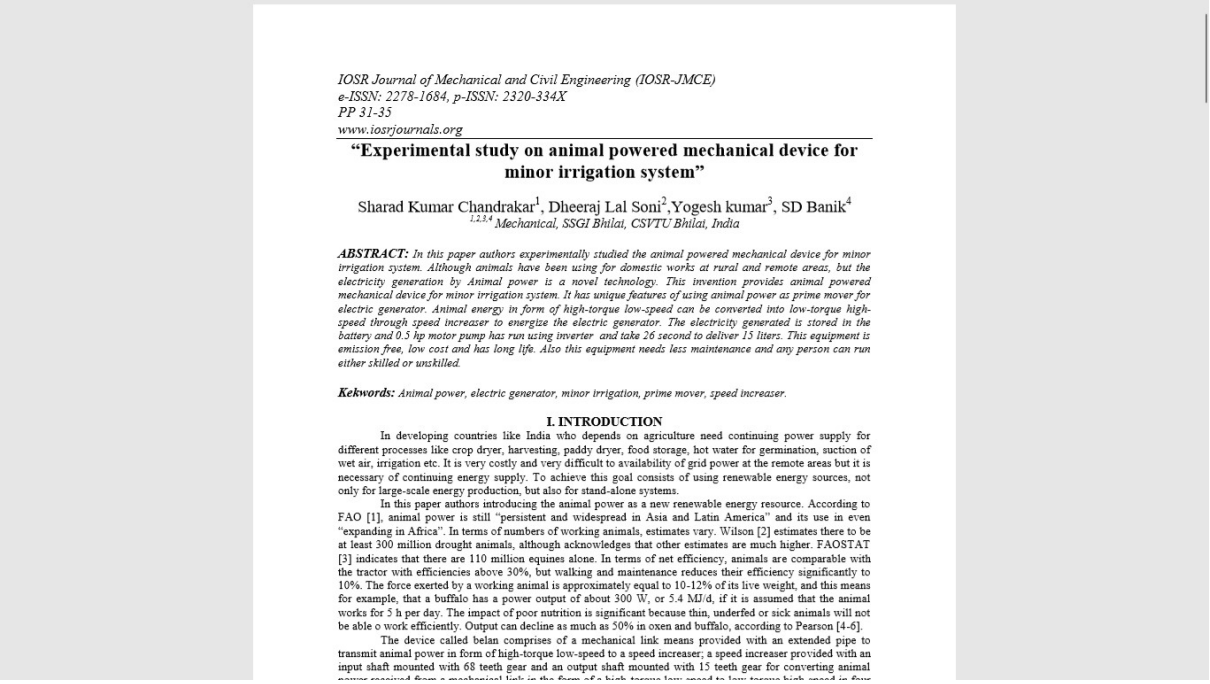
affordable agriculture. Cattles helps us in this task as in India Cattles have been fed majorly with waste of crop as against other countries where they have been fed with grain to increase meat.

Bullock/Animal Driven Generator cum Battery Charger :

We have developed an electric generator cum charger for solving the problem of electric power. Running a pair of bull/buffalo for 3hrs it can charged two battery of 12 volts completely, expence on diet of Bull/Buffalo par day can be compensated with their dung & urine for Organic Manure & Natural Pesticides. So by generating electric power we can also supply soil with essential nutrient which is recycled by this dumb animal. Generally their diet is Straws , Grass , Chuni or Bran, Oil Cake, Vegetables & Fruits Waste etc.. which is waste for human but need to recycled as it can be a part of any crop. This type of electric power generation is safe & hygienic.

Note : Every healthy Draught Animal has different Traction Power. Bullock & Buffalo has approx. 0.75HP Traction Power. Horse has approx 1.00 HP , Camel approx. 1.50 HP , Mule approx. 0.70 HP , Donkey Approx. 0.4 HP. Thus using Draught animal we can not only generate power , but can also Recycle crop

http://iosrjournals.org/iosr-jmce/papers/ICAET-2014/me/volume-6/8.pdf



IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE)
e-ISSN: 2278-1684, p-ISSN: 2320-334X
PP 31-35
www.iosrjournals.org

"Experimental study on animal powered mechanical device for minor irrigation system"

Sharad Kumar Chandrakar[1], Dheeraj Lal Soni[2],Yogesh kumar[3], SD Banik[4]
[1,2,3,4] *Mechanical, SSGI Bhilai, CSVTU Bhilai, India*

ABSTRACT: *In this paper authors experimentally studied the animal powered mechanical device for minor irrigation system. Although animals have been using for domestic works at rural and remote areas, but the electricity generation by Animal power is a novel technology. This invention provides animal powered mechanical device for minor irrigation system. It has unique features of using animal power as prime mover for electric generator. Animal energy in form of high-torque low-speed can be converted into low-torque high-speed through speed increaser to energize the electric generator. The electricity generated is stored in the battery and 0.5 hp motor pump has run using inverter and take 26 second to deliver 15 liters. This equipment is emission free, low cost and has long life. Also this equipment needs less maintenance and any person can run either skilled or unskilled.*

Kekwords: *Animal power, electric generator, minor irrigation, prime mover, speed increaser.*

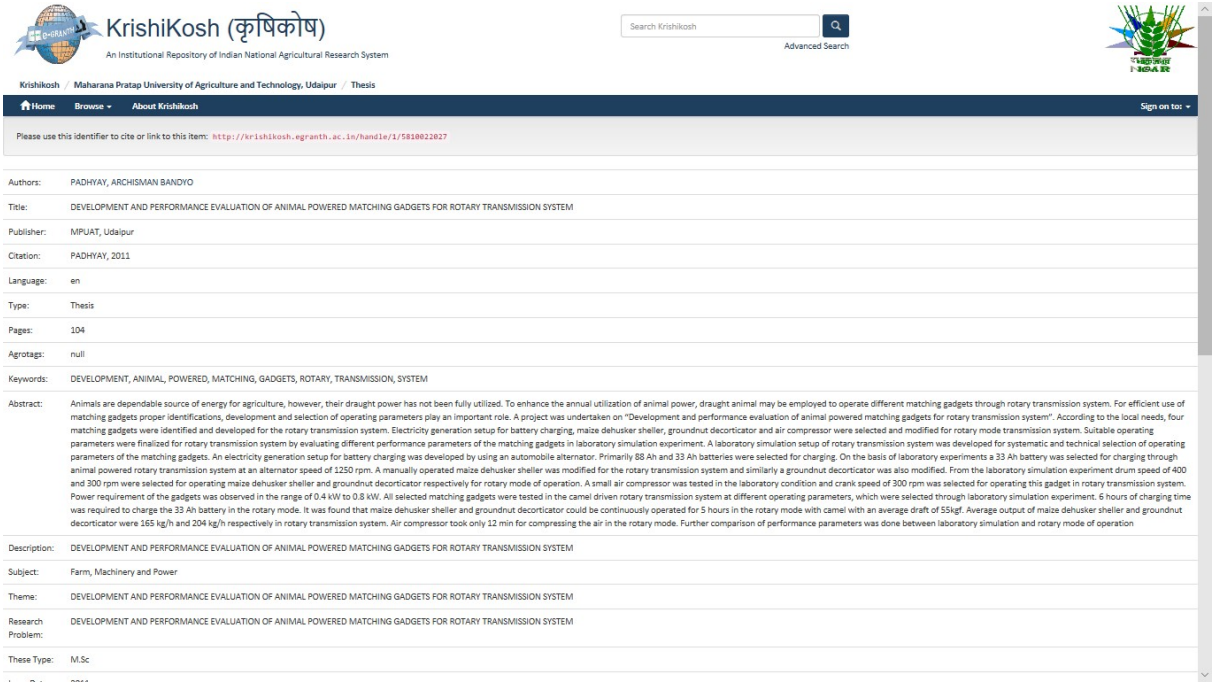
I. INTRODUCTION

In developing countries like India who depends on agriculture need continuing power supply for different processes like crop dryer, harvesting, paddy dryer, food storage, hot water for germination, suction of wet air, irrigation etc. It is very costly and very difficult to availability of grid power at the remote areas but it is necessary of continuing energy supply. To achieve this goal consists of using renewable energy sources, not only for large-scale energy production, but also for stand-alone systems.

In this paper authors introducing the animal power as a new renewable energy resource. According to FAO [1], animal power is still "persistent and widespread in Asia and Latin America" and its use in even "expanding in Africa". In terms of numbers of working animals, estimates vary. Wilson [2] estimates there to be at least 300 million drought animals, although acknowledges that other estimates are much higher. FAOSTAT [3] indicates that there are 110 million equines alone. In terms of net efficiency, animals are comparable with the tractor with efficiencies above 30%, but walking and maintenance reduces their efficiency significantly to 10%. The force exerted by a working animal is approximately equal to 10-12% of its live weight, and this means for example, that a buffalo has a power output of about 300 W, or 5.4 MJ/d, if it is assumed that the animal works for 5 h per day. The impact of poor nutrition is significant because thin, underfed or sick animals will not be able o work efficiently. Output can decline as much as 50% in oxen and buffalo, according to Pearson [4-6].

The device called belan comprises of a mechanical link means provided with an extended pipe to transmit animal power in form of high-torque low-speed to a speed increaser; a speed increaser provided with an input shaft mounted with 68 teeth gear and an output shaft mounted with 15 teeth gear for converting animal

http://krishikosh.egranth.ac.in/handle/1/5810022027



KrishiKosh (कृषिकोष)
An Institutional Repository of Indian National Agricultural Research System

Search Krishikosh
Advanced Search

Krishikosh / Maharana Pratap University of Agriculture and Technology, Udaipur / Thesis

Home | Browse | About Krishikosh | Sign on to:

Please use this identifier to cite or link to this item: http://krishikosh.egranth.ac.in/handle/1/5810022027

Authors:	PADHYAY, ARCHISMAN BANDYO
Title:	DEVELOPMENT AND PERFORMANCE EVALUATION OF ANIMAL POWERED MATCHING GADGETS FOR ROTARY TRANSMISSION SYSTEM
Publisher:	MPUAT, Udaipur
Citation:	PADHYAY, 2011
Language:	en
Type:	Thesis
Pages:	104
Agrotags:	null
Keywords:	DEVELOPMENT, ANIMAL, POWERED, MATCHING, GADGETS, ROTARY, TRANSMISSION, SYSTEM
Abstract:	Animals are dependable source of energy for agriculture, however, their draught power has not been fully utilized. To enhance the annual utilization of animal power, draught animal may be employed to operate different matching gadgets through rotary transmission system. For efficient use of matching gadgets proper identifications, development and selection of operating parameters play an important role. A project was undertaken on "Development and performance evaluation of animal powered matching gadgets for rotary transmission system". According to the local needs, four matching gadgets were identified and developed for the rotary transmission system. Electricity generation setup for battery charging, maize dehusker sheller, groundnut decorticator and air compressor were selected and modified for rotary mode transmission system. Suitable operating parameters were finalized for rotary transmission system by evaluating different performance parameters of the matching gadgets in laboratory simulation experiment. A laboratory simulation setup of rotary transmission system was developed for systematic and technical selection of operating parameters of the matching gadgets. An electricity generation setup for battery charging was developed by using an automobile alternator. Primarily 88 Ah and 33 Ah batteries were selected for charging. On the basis of laboratory experiments a 33 Ah battery was selected for charging through animal powered rotary transmission system at an alternator speed of 1250 rpm. A manually operated maize dehusker sheller was modified for the rotary transmission system and similarly a groundnut decorticator was also modified. From the laboratory simulation experiment drum speed of 400 and 300 rpm were selected for operating maize dehusker sheller and groundnut decorticator respectively for rotary mode of operation. A small air compressor was tested in the laboratory condition and crank speed of 300 rpm was selected for operating this gadget in rotary transmission system. Power requirement of the gadgets was observed in the range of 0.4 kW to 0.8 kW. All selected matching gadgets were tested in the camel driven rotary transmission system at different operating parameters, which were selected through laboratory simulation experiment. 6 hours of charging time was required to charge the 33 Ah battery in the rotary mode. It was found that maize dehusker sheller and groundnut decorticator could be continuously operated for 5 hours in the rotary mode with camel with an average draft of 55kgf. Average output of maize dehusker sheller and groundnut decorticator were 165 kg/h and 204 kg/h respectively in rotary transmission system. Air compressor took only 12 min for compressing the air in the rotary mode. Further comparison of performance parameters was done between laboratory simulation and rotary mode of operation
Description:	DEVELOPMENT AND PERFORMANCE EVALUATION OF ANIMAL POWERED MATCHING GADGETS FOR ROTARY TRANSMISSION SYSTEM
Subject:	Farm, Machinery and Power
Theme:	DEVELOPMENT AND PERFORMANCE EVALUATION OF ANIMAL POWERED MATCHING GADGETS FOR ROTARY TRANSMISSION SYSTEM
Research Problem:	DEVELOPMENT AND PERFORMANCE EVALUATION OF ANIMAL POWERED MATCHING GADGETS FOR ROTARY TRANSMISSION SYSTEM
These Type:	M.Sc

http://www.caephtcau.ac.in/farm-power-machinery/

Farm Machinery and Power Engineering

DEPARTMENT OF FARM MACHINERY AND POWER ENGINEERING

This department conducts teaching, research and extension education activities in the subjects related to tools, equipment and machineries, different sources of farm power and renewable sources of energy & workshop activities. The department offers 42 credit hours courses in B. Tech. (Agril. Engg.) and 15 credit hour courses in B. Tech. (Food Tech.) degree programmes. Three All India Coordinated Research Projects (AICRPs) namely Farm Implements and Machinery (FIM), Utilization of Animal Energy (UAE) and Ergonomics and Safety in Agriculture (ESA) are associated with this department.

5	Gravity based ropeway	Transportation of agricultural produce in difficult terain	
6	Pony driven rotary mode electricity generation	Generation and storage of electricity from animal power	
7	Value chain of lemongrass cultivation	Production and processing of aromatic plants	
8	Large cardamom harvesting knife	Harvesting of large cardamom	
9	Wing plough	Ploughing in terraces in place of country plough	

http://www.cropandweed.com/archives/2015/vol11issue1/14.pdf

Journal Crop and Weed, 11(1):75-79(2015)

Utilization of animal energy for post harvest operations in rotary mode

S. K. SWAIN, A. K. DASH, A. K. MOHAPATRA, D. BEHERA AND B. K. BEHERA

Department of Farm Machinery and Power
College of Agricultural Engineering and technology
OUAT, Bhubaneswar - 751003, Odisha

Received:16-08-2014, Revised: 05-02-2015, Accepted: 17-02-2015

ABSTRACT

The small and marginal farmers in many parts of the state of Odisha still depend upon the animal energy for accomplishment of agricultural operations because of small and fragmented land holding as well as poor socio-economic status. Of late, the maintenance cost of a pair of bullocks proves to be a burden on these farmers with increase in labour cost. A study on use of animal energy for two post harvest operations such as paddy threshing and chaff cutting with rotary gear system was made to increase the annual use of the bullocks so as to reduce the owning cost of bullocks. The results on operation of thresher indicated that the average output of the thresher was 143.23 q h^{-1} with mean threshing efficiency of 93.12%. The mean draft was 420 N which was 6.9 % of the bodyweight of the bullocks indicating that the bullocks were underutilized as far as power utilization is concerned. The results on operation of chaff cutter through bullock operated rotary unit indicated that the mean draft requirement was 250 N varying from 275 to 216 N which was 4.1 % equivalent to the bodyweight. The average output was found to be 69.43 kg h^{-1}. The power output was observed to be 0.207 kW. The cost of operation of the thresher and chaff cutter in rotary mode suggests that rotary unit is not economical compared to threshing and chaff cutting if operated by electrical power source but surely it will increase the utilization of animal which otherwise would have been sitting idle and can save time in threshing compared to traditional bullock treading.

Keywords : Bodyweight, draft requirement, output, rotary gear system, threshing efficiency

In Odisha, around 77 per cent of the farmers are under small and marginal categories and they posses about 43 per cent of the total cultivable land. The number of operational holdings is about 40.30 lakhs with a cropping intensity of 160 per cent. The average size of holding is 1.5 ha (Ghosal *et. al.*, 2014). Thus, the small and marginal farmers in many parts of the state of Odisha still depend upon the animal energy for accomplishment of agricultural operations because of small and fragmented land holding as well as poor socio-economic status. Use of bullocks for agricultural work is limited to tillage, threshing and transportation in the state of Orissa (Kurup, 2003). The total annual use amounts to less than 300 hours. Cost of utilization is,

MATERIALS AND METHODS

The rotary gear unit procured from UAE centre of Allahabad was installed in the premises of College of Agricultural Engineering and Technology, OUAT, Bhubaneswar. The rotary gear unit consists of few components such as a gear box, spur gears, bevel gears. Shafts, bearing, bearing cover, bushes and belt pulley transmission unit. In the rectangular shape gear box having dimensions of 660 x 579 x 274 mm different parts are assembled. It is made of 6 mm thick pressed mild steel plate. There is a set of spur gears which transmits the power between two parallel shafts. The spur gears are made of heat treated alloy steel having module 4.0 mm. The spur gear has 77 teeth while the