



A STUDY TO MEASURE THE RELATIONSHIP BETWEEN HUSK PURCHASE AND RAINFALL IN COIR INDUSTRIES

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ABSTRACT

India is the largest producer and exporter of coir and coir products. At present, coir and its products are exported to more than 100 countries. The industrial training is an attempt made to analyze the process right from initial to final and also the conceptual framework of Coir industry. Through this internship, applications of mathematics in Coir industry is known, understood and applied. This study exposes the relationship between the husk purchase and rainfall.

KEYWORDS :Raw material - husk, Final products - coir and pith

INTRODUCTION

Coir industry is one of the important cottage industries in India contributing significantly for creation of livelihood in major coconut growing states and Union territories i.e. Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Goa, Orissa, Assam, Andaman & Nicobar, Lakshadweep and Pondicherry. Coir fibre is the raw material of the industry and during the extraction process coir and pith is generated in large quantities equal to the input.

The trainer explained about the company, employees, manufacturing process, financial performances and transports that,

We are in this field since 2001 to perform sustainable and innovative efforts of Manufacturing unit leading quality Coco Pith Block and Coir Fibre. The machinery used for production of Coir based products exhibits precision engineering and able to boost productivity. This offered range caters diverse requirement of such firms engaged in manufacturing coir and related products. Keeping in mind divergent demands of the clients, we offer this range in different specifications at an affordable price.

With the support of our team, we have been able to bring forth the best range of products. Presently we export our products to different parts of the world. His remarkable understanding of market and rich industrial experience, we have been able to achieve milestones of this industry.

NEED OF THE PROBLEM

The major problem the coir industries facing is effect of rainfall on the husks purchased as well as the processed husks. Due to the fibre nature of husks of coconut, it can easily observe the H₂O molecules. Then the husks get decayed.

OBJECTIVE OF STUDY

- ✓ The aim is to find the relationship between the husks purchase and rainfall.
- ✓ Through this solution, we can able to find when the husks got more decayed and with this we can predict the future. It can be used to prevent more wastage by preventing.
- ✓

LIMITATIONS OF STUDY

Exact data Source Could not be found, as the data records not followed at industry.

Data collection in only in the area of Udumalpet, Tripur District.

Data collection is through interview method.

A large no. of. samples could not be taken because of the time constrains



PROBLEM STATEMENT

A sample of data's for one year (August 2021 – July 2022) in coir industry was selected. There daily husk purchase data was taken as tabulated below along with the rainfall data.

AVERAGE OF DATAS

S.NO.	MONTH	PURCHASE (X) cpm	RAINFALL (Y) cm
1	January	1466.65	0.27935
2	February	1370.73	0.089
3	March	1309.42	0.73581
4	April	1333.73	0.71833
5	May	1772.26	0.22871
6	June	2164.35	0.04194
7	July	1441.75	0.00964
8	August	1330.19	0.11
9	September	1505.6	0.046
10	October	1339.61	0.1371
11	November	1806.73	0.217
12	December	2676.29	0.11226

CORRELATION TABLE & ANALYSIS

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right)\left(\sum y^2 - \frac{(\sum y)^2}{n}\right)}}$$

$$r = \frac{4073.14 - \frac{19517.60 * 2.74}{12}}{\sqrt{\left(36600749.53 - \frac{(19517.60)^2}{12}\right)\left(1.3018 - \frac{(2.74)^2}{12}\right)}}$$

$$= \frac{4073.14 - \frac{53478.224}{12}}{\sqrt{\left(36600749.53 - \frac{380936709.76}{12}\right)\left(1.30 - \frac{7.5076}{12}\right)}}$$

$$= \frac{4073.14 - 4456.52}{\sqrt{\left(36600749.53 - 31744725.81\right)\left(1.3018 - 0.625633\right)}}$$

$$= \frac{-383.38}{\sqrt{\left(4856023.72\right)\left(0.6762\right)}}$$

$$= \frac{\sqrt{4856023.0438} - 383.38}{2203.64}$$

$$= -0.1739$$

r = -0.17

SUGGESTIONS & FINDINGS

The production of husk due to rain was the problem found.

- The composition of normal coconut husk is 30% with fiber and 70% with pith.



- The Coco Pith is made from the husks the coconuts, while Coco Coir is made from the fibers of coconuts
 - The pH range of a coconut husk is 5.2 to 6.8, which is more acceptable. The pH of coir ranges from 6.0 to 6.8 and the pith ranges from 3.5 to 4.8
 - The absorption capacity of coir ranges from 1000ml –1015.76ml of water. The absorption capacity of pith ranges from 500ml –506.72ml of water.
 - The correlation between husk purchase and rainfall is found to be -0.17.
 - The average husk purchase per year is 19517.6CPM.
 - The average rainfall per year is 2.74 cm.
 - The average revenue per year is 87,829.2 rupees.
- By the analysis, it is essential to give suggestions to prevent husks from decomposition. The following are the suggestions,
- The husk must be check for its fiber and pith ratio. So that we could know the elastic nature, durable nature and how resistance to rotting.
 - The pH and the moisturizing content have to examine.
 - The company should have an idea on the availability of water production of husks of their customers.
 - Different machineries might be used to dry the husks while keeping stocks or before the initiation of process.
 - The tools used like vehicles, machines, ropes, man powers should be qualified.
 - Since the correlation found was negative correlation. It implies that one variable increases with decrease in another one or one variable decreases with increase in another one. From this, if rainfall is high, purchasing of husk is enough with less than during less rainfall

CONCLUSION

From the Analysis, we find the following that there exist a Negative Correlation between the variable X(Purchase of Husk) and Variable Y (Rain Fall).

That is even though at some time there is drop in Rain Fall, still the Purchase of Husk is increased as Agriculturist are effectively using drip irrigation and other water management.

REFERENCES

- 1) S.C.Gupta, V.K. Kapoor, “FUNDAMENTALS OF MATHEMATICAL STATISTICS”, Sultan Chand&Sons, Educational Publishers, New Delhi, 2011.
- 2) S.P.Gupta, “STATISTICAL METHODS”, Sultan Chand& Sons, Educational Publishers, New Delhi, 2015
- 3) Anita Das Ravindranath, U.S. Sarma & S. Radhakrishnan, “COIR FIBRE EXTRACTION AND COIR PITH COMPOSTING USING BIOTECHNOLOGY”, National Workshop on Women Friendly Technologies, Kochi, Jan 20-22, 2005.
- 4) Anita Das Ravindranath, “COIR PITH –POTENTIAL IN INDIA”, 1991.
- 5) Proceedings of the seminar, “UTILIZATION OF COIR PITH IN AGRICULTURE”, Tamilnadu Agricultural University, Coimbatore.
- 6) <https://www.worldweatheronline.com/udumalaipettai-weather/tamil-nadu/in.aspx>