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Comparative study of moisture content of some ethnomedicinal plants of some species of family Malvaceae in Ranchi district Jharkhand

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Abstract- The family Malvaceae includes herbs, shrubs and trees. They are widely varied and include several important crops, which are mainly used as source of medicines, fiber, food etc. The importance of the studied species of the family Malvaceae consists in their very rapid emergence and fast growth. The tribal communities are having very deep knowledge about these plants. The tribes are using these plants in their daily life. Water is one of the most vital constituents in plants. The study was conducted to investigate moisture content in leaves. The analysis of the moisture content was done by drying fresh leaves. Some species of family Malvaceae like *Hibiscus rosa-sinensis* L., *Hibiscus esculentus* L. are having medicinal value.

Key words: Moisture content, Malvaceae, ethnomedicinal plants, tribal communities.

INTRODUCTION

Ranchi is the capital of Jharkhand. In Ranchi district different types of tribal communities dwell here. The tribals of Ranchi district use traditional remedies for different diseases are mainly plants. Moisture content is the amount of moisture in the sample given as a percentage of the sample's original weight. Dry content is the amount of solids which are left after drying given as a percentage of the sample's original weight. The comparative studies of moisture content of some species of family Malvaceae are also having medicinal properties. The difference between initial weight of fresh leaves and final weight of same leaves after drying is the moisture content. Percentage of

moisture content was calculated which varies from one plant to another.

MATERIALS & METHODS

In study of moisture content, plants of family Malvaceae were selected from the different areas of Ranchi district. Plant species were identified with the help of Botany of Bihar and Orissa vol I-VII.^{1,2} The fresh leaves of plants were collected then washed. After washing the leaves were kept in a cool place for drying and then weighted in weighing machine. Then these leaves were kept in hot air oven at 55°C temperature for half an hour. Repeated this activity for 2 or 3 times. After that dried leaves were weighted. The difference between initial weight of the green leaves and final weight after drying

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was the moisture content. Percentage of moisture content was calculated with the formula:-

$$\text{Moisture content} = \frac{\text{Initial weight of leaves} - \text{Final weight after drying}}{\text{Initial weight of leaves}} \times 100$$

RESULT & DISCUSSION

In this paper comparative study of moisture content of two ethnomedicinal plants viz *Hibiscus rosa-sinensis* L. and *Hibiscus esculentus* L. has been done. Several studies in this field have been done in different area of India.³

Table 1 : Moisture content of *Hibiscus rosa-sinensis* L.

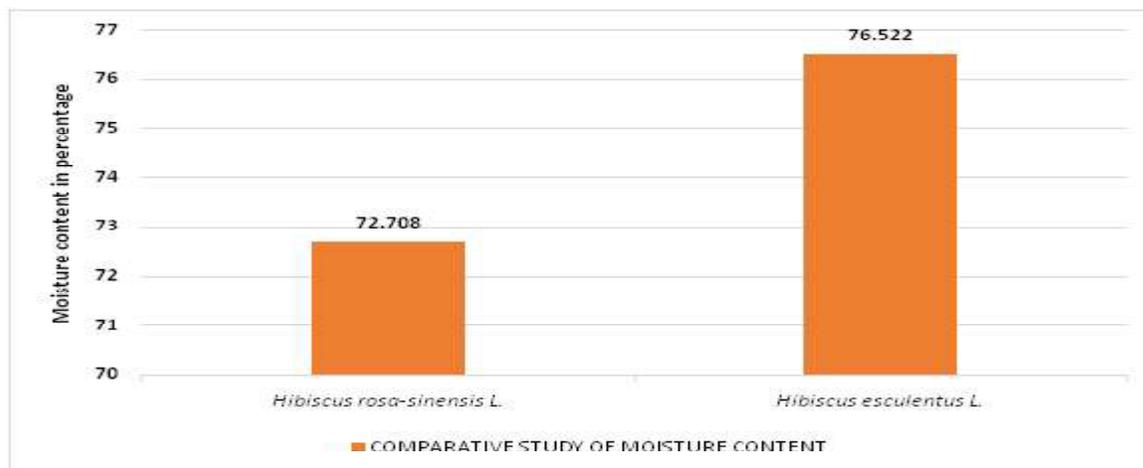
Material	Number of observation	Weight of fresh leaves	Weight of dried leaves	Difference	% of Moisture content
Fresh leaves of <i>Hibiscus rosa-sinensis</i> L.	1.	10 gms	2,680 gms	7.320 gms	73.2 %
	2.	10 gms	2.748 gms	7.252 gms	72.52 %
	3.	10 gms	2.748 gms	7.252 gms	72.52 %
	4.	10 gms	2.716 gms	7.284 gms	72.84 %
	5.	10 gms	2.750 gms	7.250 gms	72.5 %
	6.	10 gms	2.838 gms	7.162 gms	71.62 %
	7.	10 gms	2.800 gms	7.200 gms	72 %
	8.	10 gms	2.704 gms	7.296 gms	72.96 %
	9.	10 gms	2.646 gms	7.354 gms	73.54 %
	10.	10 gms	2.662 gms	7.338 gms	73.38 %
Total					727.08 %

Average Moisture content = 72.708

Table 2 : Moisture content of *Hibiscus esculentus* L.

Material	Number of observation	Weight of fresh leaves	Weight of dried leaves	Difference	% of Moisture content
Fresh leaves of <i>Hibiscus esculentus</i> L.	1.	10 gms	2.348 gms	7.652 gms	76.52 %
	2.	10 gms	2.352 gms	7.648 gms	76.48 %
	3.	10 gms	2.322 gms	7.678 gms	76.78 %
	4.	10 gms	2.371 gms	7.629 gms	76.29 %
	5.	10 gms	2.346 gms	7.654 gms	76.54 %
	6.	10 gms	2.386 gms	7.614 gms	76.14 %
	7.	10 gms	2.328 gms	7.672 gms	76.72 %
	8.	10 gms	2.354 gms	7.646 gms	76.46 %
	9.	10 gms	2.324 gms	7.676 gms	76.76 %
	10.	10 gms	2.347 gms	7.653 gms	76.53 %
Total					765.22 %

Average Moisture content = 76.522 %



Graph 1- Comparative study of moisture content

Kumari & Kandir- Comparative study of moisture content of some ethnomedicinal plants of some species of family Malvaceae in Ranchi district Jharkhand

The comparative study of two plant species of family Malvaceae it is found that the moisture content of *Hibiscus rosa-sinensis* L. was 72.708 % having low moisture content and *Hibiscus esculentus* L. was 76.522 % having high moisture content. The investigated plants are highly medicinal. *Hibiscus rosa-sinensis* L. are used to treat hair loss, fever, wounds etc and *Hibiscus esculentus* L. are used in the treatment of gonorrhoea, ordorurinae etc. These plants are used in our daily life. Few earlier works have been done in this field in different areas of Jharkhand.⁴ It is an urgent need to conserve different types of ethnomedicinal plants which are going to be extinct.

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