STUDY OF TRICHOMES IN SOME SPECIES OF LITSAEA LAMK.

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ABSTRACT

Litsaea Lamk. belongs to the family Lauraceae which is economically important for aromatic oils. These oils are responsible for the fragrance of many of its members. This family is also called as the avocado family. The members of the genus Litsaea are also medicinally important. The bark of Litsaea sebifera is mixed with goats milk and serves as an application for sprains and bruises. The infusion of bark is used in dysentery. Wood is durable and not attacked by insects. The bark of Litsaea polyantha is used in Indian medicine. Muga silkworms are reared on its leaves. The forked stems of sufficient dimensions of Litsaea angustifolia are used for single yoke for buffaloes. Pat silkworms (Assam silk) are reared on the leaves of L. citrata. In this study the trichomes of 17 species of the genus Litsaea are studied. The structure and development of trichomes and glands have been studied in several angiosperm families. The trichomes observed in genus Litsaea are eglandular, unicellular, glandular & multicellular peltate type.

KEY WORDS: Litsaea, Lauraceae, trichomes, eglandular, unicellular, glandular & multicellular peltate.

INTRODUCTION

The present work deals with the anatomical studies in the genus Litsaea. The family Lauraceae is commonly called Laurel family as suggested by Hooker, 1883. There is meagre anatomical work carried out in Genus Litsaea of Lauraceae. Economically the family is important for the aromatic oils that are responsible for the fragrance of many of its members the avocado (Persea americana), Cinnamon and camphor (Cinnamomum), benzoin (Lindera), Sassafras (Sassafras), and many fragrant woods used in cabinet work. Avocado
Growing is a major fruit industry in Southern U.S.A. Species of about 7 genera are cultivated domestically for ornamentation, as mentioned by Kanjilal, 1939.


MATERIAL AND METHODS
The species studied are as shown in the table

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Genus species</th>
<th>Place of Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Litsaea chartacea Wall.</td>
<td>B.S.I. Eastern Circle, Shillong, 30111, 30113.</td>
</tr>
<tr>
<td>3</td>
<td>Litsaea coriacea Hook. f.</td>
<td>Mahadbehwar, Bhimashankar.</td>
</tr>
<tr>
<td>5</td>
<td>Litsaea elongata Wall.</td>
<td>Mawsmai, K&amp;J Hills B.S.I. Eastern Circle, Shillong, 24926, 24930, 24933</td>
</tr>
<tr>
<td>8</td>
<td>Litsaea oblonga Wall.</td>
<td>Tirap (Eastern Nepal) B.S.I. Eastern Circle Shillong, 30933, 27860, 17875.</td>
</tr>
<tr>
<td>10</td>
<td>Litsaea Panamonja Ham.</td>
<td>Tirap (Eastern Nepal) B.S.I. Eastern Circle, Shillong, 17844, 25176</td>
</tr>
<tr>
<td>17</td>
<td>Litsaea Wightiana Hook.f.</td>
<td>KodaiKanal</td>
</tr>
</tbody>
</table>

The plant material for the present work was personally collected from Shillong-Meghalaya; Kodaikanal, Kolli Hills-Tamilnadu. The duplicates of herbarium were collected from the
herbarium section of B.S.I. Eastern Circle and A.R.I., Pune. The identification of fresh material was checked with the help of Standard Herbaria from B.S.I. Shillong and B.S.I. Yercaud and A.R.I. Herbarium, Pune.

The lamina was boiled in nitric acid and upper and lower epidermal peelings were taken. The peelings were washed in water and stained with Saffranine or Haematoxylin and mounted in glycerine. Foliar trichomes were observed from the cleared surface of the lamina under the compound microscope. Trichomes were sketched by using Erma Camera Lucida at 10 x 45 magnification.

The terminology used in anatomical studies for trichomes classification is in accordance with Inamdar and Patel (1973).

**OBSERVATIONS**

1. *Litsaea chartacea*: (Text Fig. 1)
   Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

2. *Litsaea citrata*: (Text Fig. 2)
   Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

3. *Litsaea coriacea*: (Text Fig. 3)
   Trichomes are eglandular, unicellular type, conical with an acute apex. The outer walls are slightly concave.

4. *Litsaea cubeba*: (Text Fig. 4)
   Trichomes are eglandular, unicellular type, conical with an acute apex. The outer walls are concave.

5. *Litsaea elongata*: (Text Fig. 5)
   The trichomes are glandular, multicellular peltate type.

6. *Litsaea glutinosa*: (Text Fig. 6)
   Trichomes are eglandular, unicellular type, conical with an acute apex. The outer walls are wavy.
7. **Litsaea Khasyana**: (Text Fig. 7)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

8. **Litsaea oblonga**: (Text Fig. 8)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

9. **Litsaea oleoides**: (Text Fig. 9)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

10. **Litsaea Panamonja**: (Text Fig. 10)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

11. **Litsaea polyantha**: (Text Fig. 11)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

12. **Litsaea salicifolia**: (Text Fig. 12)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are concave.

13. **Litsaea sebifera**: (Text Fig. 13)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

14. **Litsaea semecarpifolia**: (Text Fig. 14)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

15. **Litsaea stocksii**: (Text Fig. 15)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

16. **Litsaea umbrosa**: (Text Fig. 16)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.
17. *Litsaea Wightiana*: (Text Fig. 17)
Trichomes are eglandular, unicellular type, conical with an obtuse apex. The outer walls are slightly concave.

RESULT AND DISCUSSION
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Trichomes of all the studied species were examined. The trichomes observed in genus *Litsaea* are eglandular, unicellular, mostly conical with an acute apex in *Litsaea cubeba, L. coriacea, L. glutinosa*; while obtuse apex is observed in *L. chartacea, L. citrata, L. Khasyana, L. oblonga, L. oleoides, L. Panamonja, L. polyantha, L. salicifolia, L. sebifera, L. semecarpifolia, L. stocksii, L. umbrosa* and *L. Wightiana* and glandular, multicellular peltate type is observed in *L. elongata.*
In Lauraceae all trichomes thus far reported in the literature or observed by the authors (Christophel et al., 1996) have been simple as in Litsaea costalis. Generally their bases can be characterized as poral meaning they consist not of a set of specially modified cells, but of a pore or hole, at the junction of several non-stomatal cells. Some Lauraceae also display glandular cells. The observations made on the studied species of Litsaea which are eglandular, unicellular, conical and glandular, multicellular only in L. elongata.

Since Vaidya 2015 has already studied the venation patterns in some of the species & stomatal complexes also have been studies by Vaidya 2016, the studies on trichome complex was undertaken even though it is not much significant taxonomically for the seperation of the species. However eglandular unicellular, conical becomes a significant character with rarely glandular, multicellular peltate type.

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REFERENCES


