
7. Phyllocephalum tenue (Clarke) Narayana, Comb. nov. Centratherum tenue Clarke, Compositae Ind. 1876, 4.

The author is grateful to Dr. M. A. Rau for his encouragement and critical assessment of this work.

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OVICIDAL EFFECT OF DIFLUBENZURON ON ASH WEEVIL

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Diflubenzuron [Dimilin (R), 1-(4-Chlorophenyl)-3-(2, 6-difluorobenzyl) urea], popularly known as the moultiing inhibitor is known for its inhibitory action on chitin synthesis and deposition in insects, causes difficulty in moulting. Subsequently diflubenzuron was widely reported to have larvicidal activity, contact activity and to cause pupal mortality. Sterilizing effect of diflubenzuron was recently reported on Anthonomus grandis Boh., Musca domestica F. and Spondoptera littoralis Boisd. The effect of diflubenzuron was tested on the adult ash weevil (Myllocerus undecimpustulatus maculosus Desb.), the larvae of which cause economic damage to varieties of Gossypium barbadense L. in southern India.

The full-grown larvae and pupae were collected from cotton fields and maintained in the laboratory for adult emergence; the freshly emerged adults were fed with cotton leaves sprayed with 0.1% (1000 ppm) aqueous formulation of diflubenzuron (Dimilin 25% WP). Also ash weevil adults of unknown age and mating status were collected from cotton fields and fed with the treated leaves after one day of starvation. Twenty-four pairs of adults were studied with three replications for each experiment along with control.

Diflubenzuron partially inhibits oviposition but completely inhibits fertility in freshly emerged and virgin females, whereas the females of unknown age and mating status collected from the field laid both fertile and sterile eggs after feeding on the treated leaves (table 1), however, it does not interfere with courtship and mating.

Freshly emerged females fed with diflubenzuron-treated leaves laid significantly lower number of eggs (10-7 eggs/female) than freshly emerged ones fed with untreated leaves (436 eggs/female). The females of unknown age and mating status also showed a similar reduction in oviposition when fed with treated leaves and laid 52 eggs/female while those females fed with...
**Table 1**

*Effect of diflubenzuron on oviposition and fertility*

<table>
<thead>
<tr>
<th>Mating status</th>
<th>Total No. Fertile# of* eggs</th>
<th>Sterile# eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>laid</td>
<td></td>
</tr>
<tr>
<td>I. Fed with diflubenzuron-treated leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Virgin</td>
<td>256 (10.7)</td>
<td>0.0 (0)</td>
</tr>
<tr>
<td></td>
<td>256 (10.7)</td>
<td>0.0 (0)</td>
</tr>
<tr>
<td>(b) previously mated</td>
<td>1260 (52.5)</td>
<td>123 (9-8)</td>
</tr>
<tr>
<td></td>
<td>1137 (52.5)</td>
<td>113 (9-8)</td>
</tr>
<tr>
<td>II. Fed with untreated leaves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Virgin</td>
<td>10464 (436)</td>
<td>10293 (498-4)</td>
</tr>
<tr>
<td></td>
<td>171 (436)</td>
<td>171 (498-4)</td>
</tr>
<tr>
<td>(b) Mated</td>
<td>5601 (233-4)</td>
<td>5495 (98-1)</td>
</tr>
<tr>
<td></td>
<td>106 (233-4)</td>
<td>106 (98-1)</td>
</tr>
</tbody>
</table>

*Total for 24 pairs, eggs/female given in parentheses. #Percentage values given in parentheses.

untreated leaves laid 233 eggs/female, for the rest of the oviposition period, indicating inhibitory action of diflubenzuron on ovulation in both the virgin and previously mated females. The inhibitory action is however only partial.

The virgin and mated females fed with untreated leaves laid 98.4 and 98.1% eggs respectively, while all the eggs laid by the virgin females fed with treated leaves did not hatch. These eggs showed normal development on the first day, subsequently they shrunk and failed to hatch. It may be that the larvae did not develop further to hatch due to the deficiency of cuticle in the developing larva inside the egg shell. The mated females fed with treated leaves laid 90-2% sterile eggs and 9-8% fertile; perhaps the fully developed eggs were fertile and they were formed prior to contact with the insecticide; later due to the contact action of diflubenzuron in the ovary, subsequently developing eggs were contaminated with the insecticide, resulting in interference with the metabolism of the developing egg and arresting further development of the larva. Similar egg mortality in one-day-old eggs of *S. littoralis* was reported, when dipped in aqueous diflubenzuron formulation. Ovicide action was reported to be due to the decrease in the respiratory metabolism of the developing egg.

The author is thankful to M/s. Mysore Insecticide Ltd., Madras for supplying the insecticide and to the Project Coordinator (Cotton) and Head, CICR Regional Station, for facilities.


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**EUPATORIUM CAPILLIFOLIUM (L.) SMALL (ASTERACEAE — EUPATORIEAE) : A NEW RECORD FROM INDIA**

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DURING taxonomic studies in Asteraceae, a rare species was noticed from Saugar which has been identified as *Eupatorium capillifolium* (L.) Small. There seems to be no record of this plant from India. As no description was available in the literature, a fresh detailed description together with the diagrams (Figs. 1–10) of various parts of the plant is presented.

A perennial odoriferous herb or bushy under-shrub. Root tuberous. Stem cylindrical, pubescent; branches crowded in the lower part of stem, becoming lesser branched above, pubescent. Leaves sessile, simple coriaceous and scarcely pubescent on abaxial surface, alternate below, opposite above, linear, acute, entire, midrib not prominent. Each capitulum arising in the axial of small leafy bract, pedicellate, pedicel 1–2 mm long, pubescent, one or two bracteole like structures present on the pedicle just below the involucral bracts. Inflorescence an open panicle or raceme with 6–15