Arthropod density in three lowland rice varieties determined by FARMCOP and CO$_2$NE insect samplers, IRRI, 1984.

<table>
<thead>
<tr>
<th>Sampler</th>
<th>Brown planthopper Nilaparvata lugens</th>
<th>Green leafhopper Nephotettix spp.</th>
<th>Green mirid bug Cytorhinus lividipennis</th>
<th>Wolf spider Lycosa pseudoannulata</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR22, IR28, IR36</td>
<td>7.2 a 4.0 a 1.6 a 44 a 2.8 a 13.6 a</td>
<td>17.6 a 12.2 a 8.4 a 9.2 a 6.4 a 5.2 a</td>
<td>21 b 4.4 a 15.6 a 22.8 a 17.2 a 13.6 a</td>
<td>9.2 a 8.4 a 7.6 a</td>
</tr>
<tr>
<td>CO$_2$NE</td>
<td>5.2 a 4.8 a 3.2 a 21 b 4.4 a 15.6 a</td>
<td>22.8 a 17.2 a 13.6 a 9.2 a 8.4 a 7.6 a</td>
<td>21 b 4.4 a 15.6 a 22.8 a 17.2 a 13.6 a</td>
<td>9.2 a 8.4 a 7.6 a</td>
</tr>
</tbody>
</table>

*In a column, means followed by the same letter are not significantly different according to t-test (P < 0.01).

The CO$_2$ NE sampler is inexpensive and easy to handle. A tank containing 22.5 kg of CO$_2$ costs about $10 and is enough to sample 2,000 or more hills. In the field, a portable tank with 300 ml of CO$_2$ can be used to sample 30 to 40 hills.

In a field trial comparing the CO$_2$NE and a formerly used FARMCOP suction machine, there was almost no difference in the number of arthropods collected (see table).†

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**Brown shield bug attack on rice**

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A pentatomid or shield bug damaged rice in Dinajpur District, West Bengal, in 1983. Dinajpur is between 25.2° and 26.5°N and 88° and 89° E. Wet season lowland rice is the principal crop, but summer and pre-kharif rice crops are increasing.

Two species of the pentatomid bug were identified by the Zoological Survey of India, Calcutta, as Dolycoris indicus Stal and D. baccarum Linn (see figure). Nymphs and adults damage rice by sucking plant sap and milk from panicles in dough stage. Panicle sterility averaged 10%. Populations were highest in Apr, when it was not unusual to find 2–3 insects per plant.‡

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**Rice hispa in Burdwan, West Bengal**

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Rice hispa *Dicladispa armigera* occurs in only a few areas of West Bengal. In 1984 kharif there was a severe hispa outbreak on 62,341 ha of rice in 5 southern districts.

Data from Burdwan District, which had 24,575 ha attacked by hispa, showed 4 broods during 1984 kharif. The first developed just after