Aedes aegypti survey of Chennai Port/Airport, India

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Introduction
The International Health Regulations, 1969, enjoin upon national governments to keep international ports/airports and peripheral areas up to 400 metres free of Aedes aegypti in its adult and immature stages and the mosquito vectors of malaria and other diseases of epidemiological significance\(^1\). The Ministry of Health, Government of India, set up Aedes control units in all major international ports/airports in the country. Periodic monitoring of the successful implementation of Aedes control programme is undertaken by the National Institute of Communicable Diseases (Directorate General of Health Services, Government of India). Present finding relates to an assessment carried out in Chennai port/airport during March 1998.

Port area
The Chennai International Seaport is situated at a latitude 13\(^0\) 6N and longitude 80\(^0\) 8E in the Bay of Bengal. The total land area of the port is 551 acres, and the water spread area is 420 acres. The port area is divided into north, central and south zones and fishing harbours. Slum colonies surround the port area.

Airport
The airport has both international and domestic terminals, covering an area of 1.5 and 1.8 sq km respectively. The airport is divided into two circles, with five zones each, for administrative conveniences.

Aedes control activities

Port area
Mosquito control in the port area is being undertaken by two agencies; (i) The Chennai Port Trust (CPT); and (ii) the Port Health Organization (PHO). Anti-mosquito measures are undertaken by CPT while the

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\(^*\) Formerly known as Madras
issuance of yellow fever certificates, ship deratting and overall supervision of mosquito control is undertaken by PHO.

**Airport**

At the airport also, mosquito control is the responsibility of the airport health officer, while the fumigation of incoming and outgoing aircrafts is undertaken by the Airport Authority of India.

**Survey results**

Tables 1 and 2 include data on *Aedes aegypti* index and container index in the airport and port areas respectively.

**Table 1.** *Aedes aegypti* index and container index in different zones of Chennai Airport

<table>
<thead>
<tr>
<th>Area</th>
<th>Premises searched</th>
<th>Premises positive</th>
<th>Premises index</th>
<th>Container searched</th>
<th>Found positive</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cowl Bazar Area</td>
<td>22</td>
<td>6</td>
<td>27.2</td>
<td>33</td>
<td>7</td>
<td>21.2</td>
</tr>
<tr>
<td>Old Airport Area</td>
<td>18</td>
<td>1</td>
<td>5.5</td>
<td>35</td>
<td>2</td>
<td>5.71</td>
</tr>
<tr>
<td>New Airport Area</td>
<td>19</td>
<td>1</td>
<td>5.26</td>
<td>49</td>
<td>5</td>
<td>10.20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59</strong></td>
<td><strong>8</strong></td>
<td><strong>3.55</strong></td>
<td><strong>117</strong></td>
<td><strong>14</strong></td>
<td><strong>11.96</strong></td>
</tr>
</tbody>
</table>

In the airport area, the *Aedes aegypti* index was found to be maximum (21.2%) in the Cowl Bazar area, which is a residential colony adjoining the airport area, in which breeding was promoted due to high water storage practices compelled by intermittent water supply. The container index in this area varied from 10.20% in the new airport area to 5.71% in old airport area. Used aircraft tyres lying in the open and holding rainwater were again the major breeding sites.

**Table 2.** *Aedes aegypti* index and container index in different zones of Chennai Seaport

<table>
<thead>
<tr>
<th>Area</th>
<th>Premises searched</th>
<th>Premises positive</th>
<th>Premises index</th>
<th>Container searched</th>
<th>Found positive</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>South zone</td>
<td>18</td>
<td>2</td>
<td>11.1</td>
<td>48</td>
<td>10</td>
<td>20.8</td>
</tr>
<tr>
<td>Central zone</td>
<td>17</td>
<td>1</td>
<td>5.8</td>
<td>71</td>
<td>18</td>
<td>25.35</td>
</tr>
<tr>
<td>North zone</td>
<td>15</td>
<td>1</td>
<td>6.6</td>
<td>32</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td><strong>4</strong></td>
<td><strong>6.6</strong></td>
<td><strong>151</strong></td>
<td><strong>29</strong></td>
<td><strong>19.20</strong></td>
</tr>
</tbody>
</table>

In the Port area, the *Aedes aegypti* index was found to be maximum (11.1%) in the South zone and minimum (5.8%) in the Central zone, whereas the container index was found to be maximum (25.35%) in the Central zone and minimum (3.1%) in the North zone. Used automobile tyres holding rainwater were identified as the key breeding sites.

High *Aedes aegypti* indices observed during the dry months in both the port and airport areas, hint at a worsening situation by the monsoon period. This necessitated the need for more vigilance and further strengthening of ecology-based control measures.

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References