GMP/WHOPES Project on LN Fabric Strength

Abraham Mnzava, WHO Global Malaria Programme
Morteza Zaim, WHO Department of Neglected Tropical Diseases
1211 Geneva 27
Switzerland
WHO recommended long-lasting insecticidal mosquito nets

<table>
<thead>
<tr>
<th>Product name</th>
<th>Product type</th>
<th>Status of WHO recommendation</th>
<th>Status of publication of WHO specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>DawaPlus® 2.0</td>
<td>Deltamethrin coated on polyester</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Duranet®</td>
<td>Alpha-cypermethrin incorporated into polyethylene</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Interceptor®</td>
<td>Alpha-cypermethrin coated on polyester</td>
<td>Full</td>
<td>Published</td>
</tr>
<tr>
<td>LifeNet®</td>
<td>Deltamethrin incorporated into polypropylene</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>MAGNet™</td>
<td>Alpha-cypermethrin incorporated into polyethylene</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Netprotect®</td>
<td>Deltamethrin incorporated into polyethylene</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Olyset®</td>
<td>Permethrin incorporated into polyethylene</td>
<td>Full</td>
<td>Published</td>
</tr>
<tr>
<td>Olyset® Plus</td>
<td>Permethrin and PBO incorporated into polyethylene</td>
<td>Interim</td>
<td>Pending</td>
</tr>
<tr>
<td>PermaNet® 2.0</td>
<td>Deltamethrin coated on polyester</td>
<td>Full</td>
<td>Published</td>
</tr>
<tr>
<td>PermaNet® 2.5</td>
<td>Deltamethrin coated on polyester with strengthened border</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>PermaNet® 3.0</td>
<td>Combination of deltamethrin coated on polyester with strengthened border (side panels) and deltamethrin and PBO incorporated into polyethylene (roof)</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Royal Sentry®</td>
<td>Alpha-cypermethrin incorporated into polyethylene</td>
<td>Interim</td>
<td>Published</td>
</tr>
<tr>
<td>Yorkool® LN</td>
<td>Deltamethrin coated on polyester</td>
<td>Full</td>
<td>Published</td>
</tr>
</tbody>
</table>
WHO recommended long-lasting insecticidal mosquito nets

• concept of value-for-money and improving the quality of LNs
  – WHO Guidelines for monitoring the durability of long-lasting insecticidal nets under operational conditions
  – WHO Guidelines for procuring public health pesticides
WHO recommended long-lasting insecticidal mosquito nets

• Lack of sufficient comparative data on durability of LNs in different settings to support procurement decisions
  – GMP/WHOPES project on LN fabric strength - a medium term solution
  – Study common causes of wear and tear of LNs in operational use and develop criteria and laboratory studies that can simulate field use conditions
  – Field data should be linked to the detailed specifications of the LN

• Improve WHO guideline specifications and quality standards for LNs
GMP/WHOPES Project on LN Fabric Strength

• All manufacturers of WHOPES recommended LNs are invited to participate
  – Submit three intact nets (each from a separate production batch) in their original packaging
  – Advanced list of LNs to be submitted with their full description (standard form)

• All nets will be subject to:
  – Fabric weight or mass per unit area (EN ISO 12127);
  – Tear strength (EN ISO 13937-1);
  – Bursting strength (EN ISO 13938-2); and
  – Tensile strength (ISO 13934-2; with and without hooks).
  – Flammability

• WHO consultation with LN industry and textile research institutions to review the outcome of the study
GMP/WHOPES Project on LN Fabric Strength

• **Standard form**
  
  – **Notes:**
    - A separate form to be completed and submitted for each product, including where there are LNs of different fabric strength (e.g. 75 and 100 denier nets).
    - Three intact nets of each type of LN (one each from different production batch) are required where such products exist.
    - A copy of the same completed form has to accompany the batch of three samples and sent to the textile institution for testing.
  
  – **Name of the manufacturer**
  – **Address of the manufacturer**
  – **LN Brand name**
  – **Production batch numbers and dates**
  – **Fabric and net technology**
    - Polymer type
    - Number of filaments (where multi-filament, specify number of filaments in a yarn):
    - Weaving pattern – net construction
    - Mesh size (number of complete holes in cm\(^2\))
    - Mass (g) per m\(^2\)
    - Denier:
  
  – **Any other relevant information**
  – **Date and signature**