AbTF’s approach to crop protection in the 3P context

With its’ sustainability standard “Cotton made in Africa” AbTF works along the 3 P’s of People – Planet – Profit.

Strategies in Crop Protection follow these principles.

**People**
Reducing health risks for farmers

**Planet**
Reducing toxicity for the environment

**Profit**
Reducing input costs
Protecting yields
GAP & IPPM and their adaption to a smallholder context

- Chemical Pesticides – respecting the CmiA Exclusion Criteria & as last resort
- Botanical Pesticides – using locally available resources to control pests
- Pest Scouting by using simple means
- Natural Fertilizers for healthy plants
- Introducing Molasses Traps
- Training based on the „5 Finger Principle”

Effects on People - Planet - Profit

<table>
<thead>
<tr>
<th>People</th>
<th>Planet</th>
<th>Profit</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAP / 5 Finger</td>
<td>(+) includes training on safe pesticide use</td>
<td>+++ major driver to maximize yields</td>
<td>Continuous training required</td>
</tr>
<tr>
<td>Pest Scouting</td>
<td>None</td>
<td>(+) pesticide application based on assessment</td>
<td>+ potential to reduce input costs</td>
</tr>
<tr>
<td>Natural fertilizers</td>
<td>None</td>
<td>(+) maintain soil fertility</td>
<td>+ increase yields compared to untreated plots</td>
</tr>
<tr>
<td>Molasses Traps</td>
<td>(+) reduced pesticide application possible</td>
<td>+ yields protected at low costs</td>
<td>Access to molasses</td>
</tr>
<tr>
<td>Botanical Pesticides</td>
<td>+ most botanicals are less toxic - labour intensive</td>
<td>+ less harmful to beneficials</td>
<td>+ low/no costs for locally available plant material</td>
</tr>
<tr>
<td>Chemical Pesticides</td>
<td>- Negative health effects</td>
<td>- Negative effects on beneficials, water bodies, etc.</td>
<td>+ protecting yields - Inputs on loan</td>
</tr>
</tbody>
</table>

PPE; Long-term use of same substance groups leading to pest resistance
Economic Implications – Conservative Projection

Molasses traps

- 1 Bollworm moths can lay **up to 1.000 eggs**
- 1 Larva can attack **up to 10 squares/bolls**
- Calculation: One moth laying 400 eggs turning into 200 larva (50% survival rate), each attacking only 5 squares, will lead to a yield loss of 5 kg
- Molasses trap data from **Zambia (2014/15 season)**: Average weekly moths catches/trap: 155

\[
\text{31,000 larvae attacking each 5 squares/bolls} = 155,000
\]

\[
\text{Estimated yield per boll} = 3 \text{ gram}
\]

\[
\text{Potential loss} = 465 \text{ kg}
\]

Cow urine as foliar fertilizer

**Advantages:**
- locally available
- no costs (currently)
- good source of nitrogen
- additional effects in pest management

**Challenges:**
- not all farmers have cattle
- cultural barriers to overcome (witchcraft)

---

Zambian CmA Partner

Yield Comparison 2014/15 season

<table>
<thead>
<tr>
<th>Cow Urine (50 plots)</th>
<th>Total Average Demo Plots (330 plots)</th>
</tr>
</thead>
<tbody>
<tr>
<td>[800]</td>
<td>[850]</td>
</tr>
<tr>
<td>[900]</td>
<td>[950]</td>
</tr>
<tr>
<td>[1000]</td>
<td>[1050]</td>
</tr>
<tr>
<td>[1100]</td>
<td>[1150]</td>
</tr>
<tr>
<td>[1200]</td>
<td>[1250]</td>
</tr>
</tbody>
</table>
Application and Roll-out of IPPM in 2016

- **GAP & pest scouting** applied by all CmiA farmers (670,000) in all countries
- **Molasses traps**: applied by farmers in
  - Côte d’Ivoire,
  - Ethiopia (> 15,000),
  - Malawi,
  - Mozambique,
  - Tanzania,
  - Uganda,
  - Zambia (>20,000*),
  - Zimbabwe
- **Natural Liquid Fertilizers** cow urine and/or manure/compost teas applied by farmers in
  - Côte d’Ivoire,
  - Tanzania (>600*),
  - Zambia (>700*)
  - other natural fertilizers (compost, manure) in all CmiA countries
- **Botanical Pesticides** applied by farmers in
  - Côte d’Ivoire,
  - Tanzania (>600*),
  - Zambia (>700*)

* Detailed result data collected for the indicated nr of farmers