A holistic approach to sustainable control of pests and diseases in cocoa
Syngenta is a leading agriculture company enabling farmers to improve global food security by better use of available resources.
Efficient pest and disease control as part of a holistic model

1. Technology toolbox
2. Access to technology
3. Application technology
4. Capabilities
5. Crop management
Cutting edge technology toolbox for better control of pests and diseases

1. Technology toolbox
   - Proven products
   - New products (global R&D)
     - new active ingredients
     - new properties
     - ready-mixtures
   - Leading to
     - better efficacy
     - better resistance management
     - fewer sprays
Access to technology benefits cocoa growers

- Food Chain acceptability
- Food Chain partnerships
- Local availability
- Affordability
- Value proposition

The Cocoa Grower

1. Technology toolbox
2. Access to technology
3. Application technology
4. Capabilities
5. Crop Management
Improved application technology enhances pest and disease control

- Availability of better spray equipment
- Correct spray device calibration
- Training
- Better coverage
- Higher biological efficacy
- Residue management
- Improved safety for users
Sustainable know-how transfer is essential to improve capabilities

1. Technology toolbox
2. Access technology
3. Application technology
4. Capabilities
   • Pest and disease knowledge
   • Safe use awareness
   • Training
     - value proposition
     - adoption after first contact
     - behavioral changes
   • Operator exposure
5. Crop management

The Cocoa Grower
Crop management and efficient crop protection are closely interrelated.

1. Technology toolbox
   - Pruning, thinning
   - Re-planting of trees
   - Fertilization
   - Shading trees
   - Pollinators
   - Harvesting

2. Access technology
3. Application technology
4. Capabilities
5. Crop management

The Cocoa Grower
This holistic approach is supported by the Syngenta’s commitment of the Good Growth Plan

By 2020, we commit to:

- More food less waste
- More biodiversity less degradation
- More health less poverty

- Make crops more efficient
- Rescue more farmland
- Help biodiversity flourish
- Empower smallholders
- Help people stay safe
- Look after every worker

One planet. Six commitments.
Higher cocoa productivity by effective control of pests and diseases

Ghana 2015/16 – Yield improvement vs. local farm practice

![Bar chart showing yield improvement at different demo farm locations.]

<table>
<thead>
<tr>
<th>Demo Farm Locations</th>
<th>Local farm Program</th>
<th>Syngenta Program</th>
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<tbody>
<tr>
<td>Suponso</td>
<td>Ridomil Gold Plus 66WP x 3</td>
<td>Ridomil Gold Plus 66WP x 6</td>
</tr>
<tr>
<td>Kotei Nkwanta</td>
<td>Kocide x 2</td>
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<tr>
<td>Antwiagyeikrom</td>
<td>Akate Master x 3</td>
<td>Actara 240 SC x 3</td>
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<tr>
<td>Beposo</td>
<td></td>
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<tr>
<td>Average yield</td>
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Harvest only reflects Pods harvested between August & December – Potentially only 70 % of the final yield.
Consequently, higher return on investment by effective control of pests and diseases

Ghana 2015/16

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<thead>
<tr>
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<th>Local Farm Program</th>
<th>Syngenta Program</th>
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</thead>
<tbody>
<tr>
<td>Yield average / ha</td>
<td>340kg $615</td>
<td>650kg $1,176</td>
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<tr>
<td>Return on CP investment $</td>
<td>3.7 : 1</td>
<td>5 : 1</td>
</tr>
</tbody>
</table>
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