Supplementary Table ST 1: WHO toxicity classes and hazard color band. Adapted from WHO (42) and FAO and WHO (9).
LD50: Lethal dose whereby 50% of the animals die

<table>
<thead>
<tr>
<th>WHO Toxicity Class</th>
<th>LD50 for rat (mg/kg body weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Oral</td>
</tr>
<tr>
<td>Ia</td>
<td>Extremely hazardous</td>
</tr>
<tr>
<td>Ib</td>
<td>Highly hazardous</td>
</tr>
<tr>
<td>II</td>
<td>Moderately hazardous</td>
</tr>
<tr>
<td>III</td>
<td>Slightly hazardous</td>
</tr>
<tr>
<td>IV / U</td>
<td>Unlikely to present acute hazard</td>
</tr>
</tbody>
</table>

Supplementary Table ST 2: Label explanation

<table>
<thead>
<tr>
<th>Part of Label</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol 1</td>
<td>Keep locked away and out of reach of children</td>
</tr>
<tr>
<td>Symbol 2</td>
<td>Wear rubber boots</td>
</tr>
<tr>
<td>Symbol 3</td>
<td>Wear rubber apron</td>
</tr>
<tr>
<td>Symbol 4</td>
<td>Wear overalls</td>
</tr>
<tr>
<td>Symbol 5</td>
<td>Wear gloves</td>
</tr>
<tr>
<td>Symbol 6</td>
<td>Handling of product</td>
</tr>
<tr>
<td>Symbol 7</td>
<td>Application of product</td>
</tr>
<tr>
<td>Symbol 8</td>
<td>Wear mask with carbon filter</td>
</tr>
<tr>
<td>Symbol between 4 and (4) left</td>
<td>Dangerous/harmful to animals</td>
</tr>
<tr>
<td>Symbol between 4 and (4) right</td>
<td>Application of product</td>
</tr>
<tr>
<td>Symbol between (4) and 5</td>
<td>Wear eye protection</td>
</tr>
<tr>
<td>Symbol 9</td>
<td>Wash after use</td>
</tr>
<tr>
<td>Reading from left to right</td>
<td>Order of actions to be conducted</td>
</tr>
<tr>
<td>Warning color red</td>
<td>WHO toxicity class Ia/Ib</td>
</tr>
</tbody>
</table>

Supplementary Table ST 3: Highest Qualification to be an agro-input dealer

<table>
<thead>
<tr>
<th>Highest Qualification to be an agro-input dealer</th>
<th>Unit</th>
<th>KAP*</th>
<th>OBS*</th>
<th>MYS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree AVPM*</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma in AVPM*</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Certificate in AVPM*</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced secondary (A Level) without additional training</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ordinary secondary (O Level) without additional training</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below O Level without additional training</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: No significant differences were found.
*aThe samples are abbreviated with KAP for the full sample of interviewees, MYS for those participating in Mystery Shopping and OBS for those participating in the sales observation

*AVPM: Agriculture, Veterinary, Pharmacy or Medicine
Supplementary Table ST 4: Content of general pesticide training

<table>
<thead>
<tr>
<th>Topic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe use and handling of chemicals (or pesticides)</td>
<td>86.9</td>
</tr>
<tr>
<td>(New) product knowledge</td>
<td>32.9</td>
</tr>
<tr>
<td>Crop protection (Pest and disease identification &amp; product matching)</td>
<td>20.8</td>
</tr>
<tr>
<td>General agriculture</td>
<td>18.5</td>
</tr>
<tr>
<td>Business management</td>
<td>23.0</td>
</tr>
<tr>
<td>Don’t know / No response</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Supplementary Table ST 5: Training providers for general pesticide training as well as specific training on pesticide alternatives and pesticide application. MAAIF: Ministry of Agriculture, Animal Industry and Fisheries.

<table>
<thead>
<tr>
<th>Base for share (number)</th>
<th>General Training (%) n=402</th>
<th>Alternatives (%) n=313</th>
<th>Application (%) n=176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever attended a training on pesticides ...</td>
<td>77.9</td>
<td>100.0</td>
<td>43.8</td>
</tr>
<tr>
<td>Informal training from shop owner</td>
<td>16.4</td>
<td>21.1</td>
<td>5.2</td>
</tr>
<tr>
<td>MAAIF or other national government agency</td>
<td>16.7</td>
<td>21.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Pesticide manufacturer, importer or supplier</td>
<td>4.5</td>
<td>5.8</td>
<td>2.0</td>
</tr>
<tr>
<td>Local government, such as agricultural extension</td>
<td>7.0</td>
<td>8.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Schools or university</td>
<td>14.7</td>
<td>18.8</td>
<td>16.7</td>
</tr>
<tr>
<td>UNACOH (Uganda National Association for Community and Occupational Heath)</td>
<td>1.0</td>
<td>1.3</td>
<td>0.2</td>
</tr>
<tr>
<td>UNADA (Uganda National Agro Input Dealer Association)</td>
<td>18.4</td>
<td>23.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Crop Life (Umbrella Pesticide Importer Association)</td>
<td>2.5</td>
<td>3.2</td>
<td>0.7</td>
</tr>
<tr>
<td>NOGAMU (National Organic Agricultural Movement of Uganda)</td>
<td>0.5</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Media (radio / TV / newspaper)</td>
<td>3.2</td>
<td>4.2</td>
<td>2.7</td>
</tr>
<tr>
<td>Self-trained through product labels or supplier leaflets</td>
<td>3.0</td>
<td>3.8</td>
<td>2.7</td>
</tr>
<tr>
<td>NGO</td>
<td>2.0</td>
<td>2.6</td>
<td>1.2</td>
</tr>
<tr>
<td>Agribusiness</td>
<td>5.5</td>
<td>7.0</td>
<td>1.0</td>
</tr>
<tr>
<td>USAID / Feed the Future</td>
<td>2.2</td>
<td>2.9</td>
<td>0.2</td>
</tr>
<tr>
<td>Fellow Farmers / Cultural Practice</td>
<td>0.0</td>
<td>0.0</td>
<td>3.2</td>
</tr>
<tr>
<td>Other</td>
<td>0.2</td>
<td>0.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Don’t remember</td>
<td>5.5</td>
<td>7.0</td>
<td>2.5</td>
</tr>
<tr>
<td>No response</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
**Supplementary Table ST 6: Inspection and License. MAAIF: Ministry of Agriculture, Animal Industry and Fisheries**

<table>
<thead>
<tr>
<th>Has your shop ever been inspected by an authority, and what for?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No inspection</td>
<td>16.2</td>
</tr>
<tr>
<td>initial license approval or license renewal</td>
<td>30.6</td>
</tr>
<tr>
<td>Quality control: Counterfeits, fake, unregistered, unauthorized, outdated products</td>
<td>36.8</td>
</tr>
<tr>
<td>inspection of the shop/setup</td>
<td>10.2</td>
</tr>
<tr>
<td>sensitization</td>
<td>3.0</td>
</tr>
<tr>
<td>other</td>
<td>0.5</td>
</tr>
<tr>
<td>Don't Know</td>
<td>1.0</td>
</tr>
<tr>
<td>No response</td>
<td>1.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Is the shop licensed as pesticide distribution store with MAAIF</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>41.5</td>
</tr>
<tr>
<td>In progress</td>
<td>17.7</td>
</tr>
<tr>
<td>Yes without evidence</td>
<td>23.9</td>
</tr>
<tr>
<td>Yes with evidence: license not up-to-date</td>
<td>2.74</td>
</tr>
<tr>
<td>Yes with evidence: license up-to-date</td>
<td>5.72</td>
</tr>
<tr>
<td>Don't Know</td>
<td>7.96</td>
</tr>
<tr>
<td>No response</td>
<td>0.5</td>
</tr>
</tbody>
</table>
Supplementary Table ST 7: Categorization of deviations from recommended shop organization and setup.

<table>
<thead>
<tr>
<th>Deviation</th>
<th>somewhat serious</th>
<th>serious</th>
<th>very serious</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Documents</strong></td>
<td>85.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display of CCSP</td>
<td>58.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display of business license</td>
<td>71.7% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product records</td>
<td>38% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Shop organization</strong></td>
<td>20.2%</td>
<td>25.5%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Clean and orderly shop</td>
<td>20.2% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food on sale in shop</td>
<td>6.6% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal feed on sale in shop</td>
<td>1.3% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighboring shops selling food or animal feed</td>
<td>25.5% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Containers</strong></td>
<td>90.3%</td>
<td>30.6%</td>
<td></td>
</tr>
<tr>
<td>(Restricted) pesticides under lock</td>
<td>90.3% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarked/unlabeled containers</td>
<td>10.5% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repackaged containers</td>
<td>25% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaking containers</td>
<td>6.1% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Displays</strong></td>
<td>99.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displaying general health and safety information</td>
<td>87.2% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displaying warnings on pesticides</td>
<td>94.9% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displaying prohibition of smoking, eating and drinking</td>
<td>93.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Displaying prohibition of underage pesticide sales</td>
<td>99% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Infrastructure</strong></td>
<td>99.7%</td>
<td>89.8%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Shop size &gt; 9m2</td>
<td>41.1% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shelves for pesticide storage</td>
<td>25.5% &gt; 2.5m</td>
<td>3.6% No</td>
<td></td>
</tr>
<tr>
<td>Palettes for pesticide storage</td>
<td>6.1% &gt; 1.3m</td>
<td>41.6% No</td>
<td></td>
</tr>
<tr>
<td>Pesticide exposure to sunlight, water or moisture</td>
<td>7.7% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pesticides stored separately from other commodities</td>
<td>20.9% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shop walls from washable materials</td>
<td>23.2% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shop floor from washable materials</td>
<td>18.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shop floor drainage</td>
<td>78.8% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient lighting</td>
<td>6.1% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient ventilation</td>
<td>31.1% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sufficient water supply</td>
<td>43.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric wires in wall tubes</td>
<td>42.9% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire Fighting equipment</td>
<td>93.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unobstructed fire exit</td>
<td>41.6% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lockable doors</td>
<td>41.6% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Safety Equipment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No PPE visible</td>
<td>61.2% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nothing to wash eyes or remove toxic materials visible</td>
<td>41% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soap and water (tap/bucket) visible</td>
<td>75.5% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No materials for cleanup or disposal visible</td>
<td>41.8% Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broom visible</td>
<td>43.4% No</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>98%</td>
<td>36%</td>
</tr>
</tbody>
</table>

*Safety Equipment is categorized based on subsets of questions given in Supplementary Table ST 25.

CCSP: Certification of competency on safe handling of pesticide
Supplementary Figure SF 1: PPE access and use for agro-input dealers when handling pesticides.

Supplementary Table ST 8 Hygiene practices

**How long after you handled pesticides do you take a bath?**  %

<p>| | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Immediately after</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>19</td>
<td>18</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>A few hours later</td>
<td>9.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Many hours later</td>
<td>64</td>
<td>63</td>
<td>62</td>
<td>61</td>
<td>60</td>
<td>59</td>
<td>58</td>
<td>57</td>
<td>56</td>
<td>55</td>
<td>54</td>
<td>53</td>
</tr>
<tr>
<td>The next day or later</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>0.75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How long after you handled pesticides do you change your clothes?**  %

<p>| | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Immediately after</td>
<td>16</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>A few hours later</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Many hours later</td>
<td>63</td>
<td>62</td>
<td>61</td>
<td>60</td>
<td>59</td>
<td>58</td>
<td>57</td>
<td>56</td>
<td>55</td>
<td>54</td>
<td>53</td>
<td>52</td>
</tr>
<tr>
<td>The next day or later</td>
<td>2.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not applicable</td>
<td>1.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Who washes the clothes you wore during pesticide handling?**  %

<p>| | | | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>90</td>
<td>80</td>
<td>70</td>
<td>60</td>
<td>50</td>
<td>40</td>
<td>30</td>
<td>20</td>
<td>10</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Me</td>
<td>66</td>
<td>65</td>
<td>64</td>
<td>63</td>
<td>62</td>
<td>61</td>
<td>60</td>
<td>59</td>
<td>58</td>
<td>57</td>
<td>56</td>
<td>55</td>
</tr>
<tr>
<td>A family member</td>
<td>23</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>19</td>
<td>18</td>
<td>17</td>
<td>16</td>
<td>15</td>
<td>14</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Maintenance aid or washerwoman of the shop</td>
<td>7.46</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>They aren’t washed</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response / Don’t know / etc.</td>
<td>2.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A minority (8.5%) had refillable containers in stock, but nineteen out of twenty (94.8%) of agro-input dealers said none of the farmers ever returned containers to them.

**Supplementary Table ST 9: Container handling practices and disposal**

<table>
<thead>
<tr>
<th>Why have you stopped repackaging or mixing pesticides in your shop?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>health effects</td>
<td>33.33</td>
</tr>
<tr>
<td>personal health effects</td>
<td>20.51</td>
</tr>
<tr>
<td>it’s illegal</td>
<td>28.21</td>
</tr>
<tr>
<td>packaging changed</td>
<td>7.69</td>
</tr>
<tr>
<td>Other</td>
<td>5.13</td>
</tr>
<tr>
<td>No response</td>
<td>5.13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How are you disposing of empty pesticide containers?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>I don’t dispose of any empty containers</td>
<td>45.0</td>
</tr>
<tr>
<td>Municipal disposal site / waste / trash</td>
<td>11.7</td>
</tr>
<tr>
<td>Burning</td>
<td>36.3</td>
</tr>
<tr>
<td>Burying</td>
<td>5.5</td>
</tr>
<tr>
<td>Recycling to manufacturer</td>
<td>2.2</td>
</tr>
<tr>
<td>Reused for pesticide refill</td>
<td>0.7</td>
</tr>
<tr>
<td>Reused for other purposes</td>
<td>2.0</td>
</tr>
<tr>
<td>Other</td>
<td>0.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.5</td>
</tr>
<tr>
<td>No response</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How are you disposing of waste pesticides?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no waste pesticides</td>
<td>33.1</td>
</tr>
<tr>
<td>Municipal disposal site / Waste / Trash</td>
<td>19.7</td>
</tr>
<tr>
<td>Burning</td>
<td>12.9</td>
</tr>
<tr>
<td>Burying</td>
<td>8.7</td>
</tr>
<tr>
<td>Recycling to manufacturer</td>
<td>24.1</td>
</tr>
<tr>
<td>They are sold to customers</td>
<td>1.0</td>
</tr>
<tr>
<td>Apply in own garden</td>
<td>4.5</td>
</tr>
<tr>
<td>Other</td>
<td>1.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.7</td>
</tr>
<tr>
<td>No response</td>
<td>0.5</td>
</tr>
</tbody>
</table>

*Note: Waste pesticides are pesticides that have expired or are excess pesticides and need to be disposed of.*
### Supplementary Table ST 10: Stocked products, their availability, bestsellers, profitability and future offerings

<table>
<thead>
<tr>
<th>Products (n=402, %)</th>
<th>available</th>
<th>most sold</th>
<th>most profitable</th>
<th>offered in the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbicides (synthetic)</td>
<td>97.5</td>
<td>47.3</td>
<td>50.7</td>
<td>4.2</td>
</tr>
<tr>
<td>Insecticides (synthetic)</td>
<td>95.3</td>
<td>33.3</td>
<td>22.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Fungicides (synthetic)</td>
<td>87.3</td>
<td>8.0</td>
<td>6.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Rodenticides</td>
<td>30.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.0</td>
</tr>
<tr>
<td>Nematicides</td>
<td>14.2</td>
<td>0.7</td>
<td>0.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Acaricides</td>
<td>4.5</td>
<td>0.0</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Organic pesticides</td>
<td>10.4</td>
<td>1.5</td>
<td>0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Insect pheromones</td>
<td>4.0</td>
<td>0.2</td>
<td>0.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Veterinary products besides acaricides</td>
<td>2.5</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Fertilizer</td>
<td>92.3</td>
<td>2.5</td>
<td>6.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Seeds</td>
<td>85.6</td>
<td>2.0</td>
<td>5.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Spray Pump</td>
<td>65.4</td>
<td>0.0</td>
<td>0.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Farm Tools and Equipment</td>
<td>42.5</td>
<td>0.2</td>
<td>0.2</td>
<td>11.7</td>
</tr>
<tr>
<td>PPE</td>
<td>48.8</td>
<td>0.2</td>
<td>0.5</td>
<td>13.4</td>
</tr>
<tr>
<td>Processing and Packaging Equipment</td>
<td>3.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Animal Feed</td>
<td>1.2</td>
<td>0.2</td>
<td>0.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Food</td>
<td>0.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Hygiene articles</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Human medicine</td>
<td>0.2</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Spray Pump spares</td>
<td>3.7</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>2.2</td>
<td>0.7</td>
<td>0.2</td>
<td>0.7</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>0.5</td>
<td>0.2</td>
<td>2.0</td>
<td>33.3</td>
</tr>
<tr>
<td>No response</td>
<td>1.5</td>
<td>2.2</td>
<td>2.7</td>
<td>17.4</td>
</tr>
</tbody>
</table>

### Supplementary Table ST 11: PPE available for sale

<table>
<thead>
<tr>
<th>Share of shops (%)</th>
<th>Share of shops offering PPE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base for share (number)</td>
<td>n=402</td>
</tr>
<tr>
<td>Cap</td>
<td>1.2</td>
</tr>
<tr>
<td>Glasses</td>
<td>11.7</td>
</tr>
<tr>
<td>Mask with carbon filter</td>
<td>17.4</td>
</tr>
<tr>
<td>Mask without carbon filter</td>
<td>31.6</td>
</tr>
<tr>
<td>Long sleeved shirt</td>
<td>0.5</td>
</tr>
<tr>
<td>Poncho</td>
<td>0.0</td>
</tr>
<tr>
<td>Overall or kimono</td>
<td>3.0</td>
</tr>
<tr>
<td>Rubber apron</td>
<td>0.2</td>
</tr>
<tr>
<td>Gloves</td>
<td>27.6</td>
</tr>
<tr>
<td>Long pants</td>
<td>0.2</td>
</tr>
<tr>
<td>Waterproof pants</td>
<td>0.5</td>
</tr>
<tr>
<td>Gaiters</td>
<td>0.2</td>
</tr>
<tr>
<td>Gumboots</td>
<td>35.6</td>
</tr>
<tr>
<td>Other</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Supplementary Figure SF 2: Availability of pesticides in shops by WHO toxicity class
<table>
<thead>
<tr>
<th>Trade Name</th>
<th>Active Ingredient (AI)</th>
<th>Mode of action</th>
<th>WHO Classification</th>
<th>Rate of Application 15 L Knapsack</th>
<th>Rate of Application 20 L Knapsack</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMDocs</td>
<td>Emamectin, abamectin</td>
<td>IRAC 6</td>
<td>II</td>
<td>25 - 30 mls</td>
<td>30 - 50 mls</td>
</tr>
<tr>
<td>Rocket</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>AGRO-CYPRO</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Supa Profenofos</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Hitcell</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Profecron</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Socket Plus</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Cypercal</td>
<td>Profenofos, Cypermethrin</td>
<td>IRAC 1B + IRAC 3A</td>
<td>II</td>
<td>15 - 40 mls</td>
<td>20 - 50 mls</td>
</tr>
<tr>
<td>Striker</td>
<td>Lambda Cyhalothrin thiometoxam</td>
<td>IRAC 3A + IRAC 4A</td>
<td>III</td>
<td>15 - 20 mls</td>
<td>20 - 25 mls</td>
</tr>
<tr>
<td>Engeo</td>
<td>Lambda Cyhalothrin thiometoxam</td>
<td>IRAC 3A + IRAC 4A</td>
<td>III</td>
<td>15 - 20 mls</td>
<td>20 - 30 mls</td>
</tr>
<tr>
<td>Chlobenzo</td>
<td>Emamectin benzoate</td>
<td>IRAC 6</td>
<td>IV</td>
<td>4 tea spoon (6 g/tea spoon)</td>
<td>5 tea spoons</td>
</tr>
<tr>
<td>Prove (EC)</td>
<td>Emamectin benzoate</td>
<td>IRAC 6</td>
<td>IV</td>
<td>6 - 9 mls</td>
<td>8 - 12 mls</td>
</tr>
<tr>
<td>Dynamo (WG)</td>
<td>Emamectin benzoate</td>
<td>IRAC 6</td>
<td>IV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Supplementary Figure SF 3: Approved pesticides available for controlling the fall armyworm in Uganda
Supplementary Table ST 12: Suggested and purchased products during MYS

<table>
<thead>
<tr>
<th>Pesticide Brand</th>
<th>Suggested Freq.</th>
<th>Suggested Share</th>
<th>Purchased Freq.</th>
<th>Purchased Share</th>
<th>WHO Toxicity Class</th>
<th>Approved for FAW</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROCKET</td>
<td>35</td>
<td>27.34%</td>
<td>24</td>
<td>25.53%</td>
<td>II</td>
<td>Yes</td>
</tr>
<tr>
<td>STRIKER</td>
<td>21</td>
<td>16.41%</td>
<td>16</td>
<td>17.02%</td>
<td>III</td>
<td>Yes</td>
</tr>
<tr>
<td>Dudu Acelamectin</td>
<td>11</td>
<td>8.59%</td>
<td>8</td>
<td>8.51%</td>
<td>Ib</td>
<td>No</td>
</tr>
<tr>
<td>PROFECRON</td>
<td>9</td>
<td>7.03%</td>
<td>8</td>
<td>8.51%</td>
<td>II</td>
<td>Yes</td>
</tr>
<tr>
<td>DUDU-FENOS</td>
<td>10</td>
<td>7.81%</td>
<td>7</td>
<td>7.45%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Alpha Killer</td>
<td>5</td>
<td>3.91%</td>
<td>4</td>
<td>4.26%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Dudu Cyper 5% EC</td>
<td>5</td>
<td>3.91%</td>
<td>3</td>
<td>3.19%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Eminent 5 WDG</td>
<td>3</td>
<td>2.34%</td>
<td>3</td>
<td>3.19%</td>
<td>IV</td>
<td>No</td>
</tr>
<tr>
<td>DD Force</td>
<td>3</td>
<td>2.34%</td>
<td>2</td>
<td>2.13%</td>
<td>Ib</td>
<td>No</td>
</tr>
<tr>
<td>AMDOCS</td>
<td>2</td>
<td>1.56%</td>
<td>2</td>
<td>2.13%</td>
<td>II</td>
<td>Yes</td>
</tr>
<tr>
<td>Cyper Lacer</td>
<td>2</td>
<td>1.56%</td>
<td>2</td>
<td>2.13%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Cypresshi 5% EC</td>
<td>2</td>
<td>1.56%</td>
<td>2</td>
<td>2.13%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Ascoris 48EC</td>
<td>2</td>
<td>1.56%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Kuu Cyper</td>
<td>2</td>
<td>1.56%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Lava</td>
<td>2</td>
<td>1.56%</td>
<td>1</td>
<td>1.06%</td>
<td>Ib</td>
<td>No</td>
</tr>
<tr>
<td>Ant-Killer</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Chorpy 480 EC</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Cyper Force</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Lara Force</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>M-D FOS 48% EC</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Metalamanco 72 WP</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Supacyper</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Tafgor 40 EC</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>TROBAN 48EC</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Umeme</td>
<td>1</td>
<td>0.78%</td>
<td>1</td>
<td>1.06%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>SOCKET PLUS</td>
<td>1</td>
<td>0.78%</td>
<td>0</td>
<td>0.00%</td>
<td>II</td>
<td>Yes</td>
</tr>
<tr>
<td>Cyclone</td>
<td>1</td>
<td>0.78%</td>
<td>0</td>
<td>0.00%</td>
<td>II</td>
<td>No</td>
</tr>
<tr>
<td>Extreme</td>
<td>1</td>
<td>0.78%</td>
<td>0</td>
<td>0.00%</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>SUPA PROFENOFOS</td>
<td>1</td>
<td>0.78%</td>
<td>0</td>
<td>0.00%</td>
<td>II</td>
<td>Yes</td>
</tr>
</tbody>
</table>

FAW: Fall army worm

Supplementary Table ST 13: Original questions to Figure 5

<table>
<thead>
<tr>
<th>Column</th>
<th>Original Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>“We are now coming to a section where we talk about <em>what you say</em> when selling pesticides. Please answer with yes or no. Do you generally offer <em>any</em> pest and disease advice to farmers? Do you give suggestions about <em>which chemicals to buy</em> when farmers buy pesticides? Do you give any advice regarding <em>handling and application</em> of the product? Do you <em>explain the label</em> of the product? Do you mention the possibility of <em>health effects</em>? Do you give advice on <em>personal protective equipment</em>? Do you mention the possibility of <em>environmental effects</em>? Do you give advice on <em>storage</em> of the pesticide? Do you give advice on <em>container disposal</em>?”</td>
</tr>
<tr>
<td>Second</td>
<td>“We are now coming to a section where we would like to know how many of your customers ask for a <em>specific kind</em> of advice. How many of the farmers ask you for advice regarding product choice, application procedure, information on the label, health effects, PPE, environmental effects, storage of pesticide, container disposal” Answer options: None (0%), Some (25%), Half of them (50%), Most of them (75%), All of them (100%), Don’t know. Displayed here: Sum of answers for 50% or more.</td>
</tr>
<tr>
<td>Third</td>
<td>“Which topics were discussed during the sales procedure <em>overall</em>?” followed by “Who <em>initiated</em> the conversation regarding each of the following topics”</td>
</tr>
<tr>
<td>Fourth</td>
<td>“Did the agro-input dealer give you advice WITHOUT you asking?” If yes: “On what topics did you receive advice?” Probing questions: “How should I protect myself?” and “Is there any other advice you have relate to the product?”</td>
</tr>
</tbody>
</table>
Supplementary Table ST 14: Label colors and areas

<table>
<thead>
<tr>
<th>Reason for coloring</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct answer: Hazard color band</td>
<td>64.2</td>
</tr>
<tr>
<td>Wrong Answer: any answer not indicating hazard, risk, toxicity, etc.</td>
<td>14.4</td>
</tr>
<tr>
<td>Don’t know</td>
<td>20.9</td>
</tr>
<tr>
<td>No response</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What color do you see?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>97.8</td>
</tr>
<tr>
<td>Any other color</td>
<td>0.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the specific meaning of this color?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong answers</td>
<td>2.7</td>
</tr>
<tr>
<td>General expression such as ‘hazardous’ or ‘dangerous’</td>
<td>46.0</td>
</tr>
<tr>
<td>Extremely hazardous</td>
<td>15.2</td>
</tr>
<tr>
<td>Highly hazardous</td>
<td>4.0</td>
</tr>
<tr>
<td>Very Toxic</td>
<td>6.2</td>
</tr>
<tr>
<td>Toxic</td>
<td>7.5</td>
</tr>
<tr>
<td>Fatal</td>
<td>1.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>16.7</td>
</tr>
<tr>
<td>No response</td>
<td>0.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What other colors could the label have?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>23.63</td>
</tr>
<tr>
<td>Yellow</td>
<td>47.76</td>
</tr>
<tr>
<td>Blue</td>
<td>40.3</td>
</tr>
<tr>
<td>Green</td>
<td>40.05</td>
</tr>
<tr>
<td>Other color</td>
<td>10.2</td>
</tr>
<tr>
<td>Don’t know</td>
<td>29.35</td>
</tr>
<tr>
<td>No response</td>
<td>1.24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What do the other colors indicate?</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong answers</td>
<td>15.92</td>
</tr>
<tr>
<td>Yellow - Moderately hazardous, harmful, toxic</td>
<td>16.92</td>
</tr>
<tr>
<td>Blue - Slightly hazardous, caution, (may be) harmful</td>
<td>12.94</td>
</tr>
<tr>
<td>Green - Unlikely to present acute hazard in normal use, not classified</td>
<td>12.69</td>
</tr>
<tr>
<td>Don’t know</td>
<td>62.44</td>
</tr>
<tr>
<td>No response</td>
<td>3.98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Please explain the difference between the two areas with similar symbols</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong answers</td>
<td>19.4</td>
</tr>
<tr>
<td>Correct Answer: left side: ‘Necessary PPE for <em>handling</em> the product’, right side ‘Necessary PPE for <em>applying</em> the product’</td>
<td>19.4</td>
</tr>
<tr>
<td>Partially correct answer: ‘Necessary PPE for the product’</td>
<td>14.4</td>
</tr>
<tr>
<td>Partially correct: left side: ‘Necessary PPE for <em>handling</em> the product’</td>
<td>4.5</td>
</tr>
<tr>
<td>Partially correct: right side: ‘Necessary PPE for <em>applying</em> the product’</td>
<td>2.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>38.1</td>
</tr>
<tr>
<td>No response</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Supplementary Figure SF 4: Hazard symbol identification

Supplementary Table ST 15: Brands mentioned as best, second or third selling product.

<table>
<thead>
<tr>
<th>Brand name</th>
<th>n</th>
<th>%</th>
<th>Corresponding active ingredient</th>
<th>Group*</th>
<th>WHO Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-D</td>
<td>30</td>
<td>7.5</td>
<td>2,4- (Dimethyl) amine 720g/l</td>
<td>H</td>
<td>II</td>
</tr>
<tr>
<td>Ametryne</td>
<td>8</td>
<td>2.0</td>
<td>Ametryn 500g/l</td>
<td>H</td>
<td>II</td>
</tr>
<tr>
<td>Force Up</td>
<td>16</td>
<td>4.0</td>
<td>Glyphosate 480g/l</td>
<td>H</td>
<td>III</td>
</tr>
<tr>
<td>Weedmaster</td>
<td>159</td>
<td>39.6</td>
<td>Glyphosate 500g/l</td>
<td>H</td>
<td>III</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>52</td>
<td>12.9</td>
<td>Abamectin 1.8% + Acetamiprid 3%</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Dudu Acelamectin</td>
<td>202</td>
<td>50.2</td>
<td>Abamectin 1.8% + Acetamiprid 3%</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Dudu Cyper</td>
<td>74</td>
<td>18.4</td>
<td>Cypermethrin 50g/l</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>Dudu Fenos</td>
<td>17</td>
<td>4.2</td>
<td>Profenofos 400g/l + Cypermethrin 40g/l</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Lava</td>
<td>61</td>
<td>15.2</td>
<td>Dichlorvos 1000g/l</td>
<td>I</td>
<td>Ib</td>
</tr>
<tr>
<td>Profecron</td>
<td>14</td>
<td>3.5</td>
<td>Profenofos 400g/l + Cypermethrin 40g/l</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Rocket</td>
<td>187</td>
<td>46.5</td>
<td>Profenofos 400g/l + Cypermethrin 40g/l</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Striker</td>
<td>24</td>
<td>6.0</td>
<td>Lambdacyhalothrin 106g/l + thiomethoxam 141g/l</td>
<td>I</td>
<td>II/II</td>
</tr>
<tr>
<td>Tafgor</td>
<td>56</td>
<td>13.9</td>
<td>Dimethoate 400g/l</td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>Dithane</td>
<td>15</td>
<td>3.7</td>
<td>Mancozeb 800g/kg</td>
<td>F</td>
<td>U</td>
</tr>
<tr>
<td>Fangocil</td>
<td>13</td>
<td>3.2</td>
<td>Mancozeb 640g/kg + Metalaxyl 80g/kg</td>
<td>F</td>
<td>U/I/II</td>
</tr>
<tr>
<td>Indofil</td>
<td>66</td>
<td>16.4</td>
<td>Mancozeb 800g/kg</td>
<td>F</td>
<td>U</td>
</tr>
<tr>
<td>Other</td>
<td>177</td>
<td>44.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t remember</td>
<td>0</td>
<td>0.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t Know</td>
<td>9</td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>19</td>
<td>4.7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Group corresponds to the chemical groups H for herbicide, I for insecticide and F for fungicide.
### Supplementary Table ST 16: Corresponding active ingredients to best, second or third selling product

<table>
<thead>
<tr>
<th>Active ingredient</th>
<th>WHO Class</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,4-Dichlorophenoxyacetic acid</td>
<td>II</td>
<td>10</td>
<td>0.8</td>
</tr>
<tr>
<td>Abamectin</td>
<td>Iib</td>
<td>15</td>
<td>1.2</td>
</tr>
<tr>
<td>Abamectin + Acetamiprid</td>
<td>Iib/II</td>
<td>49</td>
<td>4.1</td>
</tr>
<tr>
<td>Acetamiprid</td>
<td>II</td>
<td>3</td>
<td>0.2</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>II</td>
<td>108</td>
<td>9.0</td>
</tr>
<tr>
<td>Cypermethrin + Profenofos</td>
<td>II/II</td>
<td>95</td>
<td>7.9</td>
</tr>
<tr>
<td>Dichlorvos</td>
<td>Iib</td>
<td>37</td>
<td>3.1</td>
</tr>
<tr>
<td>Dimethoate</td>
<td>II</td>
<td>46</td>
<td>3.8</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>III</td>
<td>121</td>
<td>10.0</td>
</tr>
<tr>
<td>Lambda cyhalothrin</td>
<td>II</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>Lambda cyhalothrin + Thiamethoxam</td>
<td>II/II</td>
<td>5</td>
<td>0.4</td>
</tr>
<tr>
<td>Mancozeb</td>
<td>U</td>
<td>47</td>
<td>3.9</td>
</tr>
<tr>
<td>Profenofos</td>
<td>II</td>
<td>20</td>
<td>1.7</td>
</tr>
<tr>
<td>Thiamethoxam</td>
<td>II</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Other</td>
<td>-</td>
<td>24</td>
<td>2.0</td>
</tr>
<tr>
<td>Don’t remember</td>
<td>-</td>
<td>38</td>
<td>3.2</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>-</td>
<td>555</td>
<td>46.1</td>
</tr>
<tr>
<td>No response</td>
<td>-</td>
<td>26</td>
<td>2.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>1205</td>
<td>100</td>
</tr>
</tbody>
</table>

### Supplementary Figure SF 5: Information sources of farmers according to agro-input dealers; best* indicating: “the best way to inform farmers about safe pesticide use”. All options were read out.
### Supplementary Table ST 17: Agro-input dealers’ attitudes regarding license, counterfeits and management of pest resistance

#### Do you consider the license relevant? (%Yes)

<table>
<thead>
<tr>
<th>Why?</th>
<th>88.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enables business according to regulation</td>
<td>50.8</td>
</tr>
<tr>
<td>Enables tax payment</td>
<td>20.7</td>
</tr>
<tr>
<td>Quality assurance to the customer</td>
<td>19.9</td>
</tr>
<tr>
<td>Enables occupational safety</td>
<td>19.9</td>
</tr>
<tr>
<td>Enables Business Promotion</td>
<td>5.0</td>
</tr>
<tr>
<td>Other</td>
<td>1.7</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>5.7</td>
</tr>
<tr>
<td>No response</td>
<td>4.2</td>
</tr>
</tbody>
</table>

#### What are the biggest problems with counterfeits?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>They are less or not effective</td>
<td>73.9</td>
</tr>
<tr>
<td>They negatively impact the farmer’s business</td>
<td>55.5</td>
</tr>
<tr>
<td>They negatively impact the agro-dealer’s business</td>
<td>45.3</td>
</tr>
<tr>
<td>They negatively impact human health</td>
<td>14.4</td>
</tr>
<tr>
<td>They negatively impact on the environment</td>
<td>10.4</td>
</tr>
<tr>
<td>Other</td>
<td>1.6</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.5</td>
</tr>
<tr>
<td>No response</td>
<td>0.3</td>
</tr>
</tbody>
</table>

#### What do you do in your business to prevent and manage pest resistance?

<table>
<thead>
<tr>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better advising the farmer</td>
<td>33.8</td>
</tr>
<tr>
<td>Recommending stronger pesticides to the farmers</td>
<td>23.6</td>
</tr>
<tr>
<td>Better consulting with the supplier</td>
<td>19.9</td>
</tr>
<tr>
<td>Buying more specific (targeted) pesticides from suppliers</td>
<td>14.9</td>
</tr>
<tr>
<td>Buying different pesticides from the suppliers (pesticide rotation)</td>
<td>13.4</td>
</tr>
<tr>
<td>Recommending different pesticides to the farmers (pesticide rotation)</td>
<td>11.9</td>
</tr>
<tr>
<td>Recommending more specific (targeted) pesticides to the farmers</td>
<td>11.4</td>
</tr>
<tr>
<td>Buying stronger pesticides from the suppliers</td>
<td>9.0</td>
</tr>
<tr>
<td>Other</td>
<td>1.7</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.7</td>
</tr>
</tbody>
</table>
### Supplementary Table ST 18: Alternatives to synthetic pesticides and their limitations

<table>
<thead>
<tr>
<th>Alternative options</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural/ ecological (sanitation, tillage, crop spacing, crop rotation, push-pull)</td>
<td>58.9</td>
</tr>
<tr>
<td>Chemical (biopesticides / natural pesticides / organic pesticides)</td>
<td>36.3</td>
</tr>
<tr>
<td>Biological (release/promotion of natural enemies)</td>
<td>27.1</td>
</tr>
<tr>
<td>Mechanical (hand picking of insects or weeds, protective covers like insect nets)</td>
<td>25.2</td>
</tr>
<tr>
<td>Host plant resistance (crop variety less vulnerable to pest attack)</td>
<td>6.7</td>
</tr>
<tr>
<td>Behavioral (pheromone/hormone traps)</td>
<td>5.7</td>
</tr>
<tr>
<td>Other</td>
<td>0.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limitations to alternative options</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less effective against pests</td>
<td>53.8</td>
</tr>
<tr>
<td>Time consuming / Labour intensive</td>
<td>47.8</td>
</tr>
<tr>
<td>More expensive</td>
<td>14.3</td>
</tr>
<tr>
<td>Knowledge and skill demanding</td>
<td>12.1</td>
</tr>
<tr>
<td>Materials not readily available</td>
<td>11.1</td>
</tr>
<tr>
<td>Difficult to mix</td>
<td>6.4</td>
</tr>
<tr>
<td>Can’t be easily used on large scale</td>
<td>5.7</td>
</tr>
<tr>
<td>Smell from materials</td>
<td>1.9</td>
</tr>
<tr>
<td>Mainly preventative than curative</td>
<td>1.3</td>
</tr>
<tr>
<td>Some irritate eyes and skin</td>
<td>1.3</td>
</tr>
<tr>
<td>Other</td>
<td>4.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>4.5</td>
</tr>
<tr>
<td>No response</td>
<td>1.6</td>
</tr>
</tbody>
</table>

### Supplementary Figure SF 6: Comparison of synthetic pesticides with alternatives to them

In terms of ... synthetic pesticides are

<table>
<thead>
<tr>
<th>criterion</th>
<th>cost</th>
<th>labor</th>
<th>management time</th>
<th>effectivity</th>
<th>skills needed</th>
<th>health risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>share (%)</td>
<td>33</td>
<td>78</td>
<td>87</td>
<td>88</td>
<td>34</td>
<td>30</td>
</tr>
</tbody>
</table>

- **better**
- **the same**
- **worse**
- **Don’t know**
### Supplementary Table ST 19: Recommendations and corresponding reasons

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>n</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommending pesticide use over alternative strategies</td>
<td>402</td>
<td>68.7</td>
<td>31.3</td>
</tr>
<tr>
<td>Reasons for recommendation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synthetic pesticides are more effective and work faster</td>
<td>200</td>
<td>90.5</td>
<td>9.5</td>
</tr>
<tr>
<td>For economic reasons (time, money)</td>
<td>112</td>
<td>92.9</td>
<td>7.1</td>
</tr>
<tr>
<td>To protect the human health</td>
<td>100</td>
<td>20.0</td>
<td>80.0</td>
</tr>
<tr>
<td>To protect the environment (e.g., sustainability)</td>
<td>73</td>
<td>21.9</td>
<td>78.1</td>
</tr>
<tr>
<td>Because it is more practical and easy</td>
<td>51</td>
<td>96.1</td>
<td>3.9</td>
</tr>
<tr>
<td>Source of income</td>
<td>10</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Alternatives not known/available</td>
<td>9</td>
<td>88.9</td>
<td>11.1</td>
</tr>
<tr>
<td>Higher Yield</td>
<td>7</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>For cultural or traditional reasons</td>
<td>4</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>75.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Don’t know</td>
<td>2</td>
<td>50.0</td>
<td>50.0</td>
</tr>
</tbody>
</table>

### Supplementary Table ST 20: Symptoms of pesticide poisoning recalled (known) or experienced.

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Experienced (%)</th>
<th>Known (%)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin irritation</td>
<td>22.4</td>
<td>57.2</td>
<td>0.39</td>
</tr>
<tr>
<td>Headache</td>
<td>29.1</td>
<td>44.0</td>
<td>0.66</td>
</tr>
<tr>
<td>Itchy eyes</td>
<td>11.4</td>
<td>37.3</td>
<td>0.31</td>
</tr>
<tr>
<td>Vomiting</td>
<td>5.7</td>
<td>33.3</td>
<td>0.17</td>
</tr>
<tr>
<td>Respiratory difficulties</td>
<td>23.6</td>
<td>29.1</td>
<td>0.81</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>7.5</td>
<td>25.1</td>
<td>0.30</td>
</tr>
<tr>
<td>Dizziness</td>
<td>11.2</td>
<td>19.9</td>
<td>0.56</td>
</tr>
<tr>
<td>Nausea</td>
<td>11.7</td>
<td>19.2</td>
<td>0.61</td>
</tr>
<tr>
<td>Other</td>
<td>4.7</td>
<td>17.2</td>
<td>0.28</td>
</tr>
<tr>
<td>Muscular weakness</td>
<td>6.0</td>
<td>9.2</td>
<td>0.65</td>
</tr>
<tr>
<td>Chest pain</td>
<td>5.0</td>
<td>7.5</td>
<td>0.67</td>
</tr>
<tr>
<td>Extreme tiredness</td>
<td>5.5</td>
<td>6.7</td>
<td>0.81</td>
</tr>
<tr>
<td>Blurred vision</td>
<td>2.2</td>
<td>4.2</td>
<td>0.53</td>
</tr>
<tr>
<td>Dry mouth</td>
<td>2.0</td>
<td>3.0</td>
<td>0.67</td>
</tr>
<tr>
<td>Back pain</td>
<td>2.0</td>
<td>3.0</td>
<td>0.67</td>
</tr>
<tr>
<td>Salivation</td>
<td>0.7</td>
<td>2.7</td>
<td>0.27</td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>2.2</td>
<td>2.7</td>
<td>0.82</td>
</tr>
<tr>
<td>Excessive sweating</td>
<td>2.0</td>
<td>2.5</td>
<td>0.80</td>
</tr>
<tr>
<td>Trembling hands</td>
<td>1.2</td>
<td>1.7</td>
<td>0.71</td>
</tr>
<tr>
<td>Lack of coordination</td>
<td>0.7</td>
<td>1.2</td>
<td>0.60</td>
</tr>
<tr>
<td>Speech difficulty</td>
<td>0.2</td>
<td>1.0</td>
<td>0.25</td>
</tr>
</tbody>
</table>

### Supplementary Table ST 21: Through which body parts do you think pesticides can enter us?

<table>
<thead>
<tr>
<th>Body Part Entry Site</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nose (inhalation)</td>
<td>92.5</td>
</tr>
<tr>
<td>Skin (dermal)</td>
<td>88.3</td>
</tr>
<tr>
<td>Mouth (ingestion)</td>
<td>78.4</td>
</tr>
<tr>
<td>Eyes (mucous membranes)</td>
<td>60.4</td>
</tr>
<tr>
<td>Ears</td>
<td>28.9</td>
</tr>
<tr>
<td>Other</td>
<td>1.5</td>
</tr>
<tr>
<td>Don’t know</td>
<td>0.5</td>
</tr>
<tr>
<td>None</td>
<td>0.2</td>
</tr>
</tbody>
</table>
### Supplementary Table ST 22: Pesticide trends over the past and future five years within community

<table>
<thead>
<tr>
<th></th>
<th>Increasing</th>
<th>Constant</th>
<th>Decreasing</th>
<th>Don’t know</th>
</tr>
</thead>
<tbody>
<tr>
<td>past</td>
<td>91.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>future</td>
<td>86.8</td>
<td>1.5</td>
<td>5.2</td>
<td>6.5</td>
</tr>
</tbody>
</table>

### Supplementary Table ST 23: Reasons for pesticide trends

<table>
<thead>
<tr>
<th>Reason for this trend</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of farmers increased/decreased</td>
<td>31.1</td>
</tr>
<tr>
<td>Pesticides are required to obtain good/any harvest at all</td>
<td>22.1</td>
</tr>
<tr>
<td>Abundance of pest organisms increased/decreased</td>
<td>14.9</td>
</tr>
<tr>
<td>Pesticides reduce labour</td>
<td>8.0</td>
</tr>
<tr>
<td>Pesticides are effective</td>
<td>3.7</td>
</tr>
<tr>
<td>Other</td>
<td>3.2</td>
</tr>
<tr>
<td>Organic farming increases/decreases</td>
<td>2.5</td>
</tr>
<tr>
<td>Pesticides are advertised/farmers are a</td>
<td>2.0</td>
</tr>
<tr>
<td>Pesticides increase yield</td>
<td>1.7</td>
</tr>
<tr>
<td>Agriculture modernizes</td>
<td>1.7</td>
</tr>
<tr>
<td>Farmers are sensitized about negative</td>
<td>1.7</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>1.7</td>
</tr>
<tr>
<td>Pesticides are cheaper</td>
<td>1.5</td>
</tr>
<tr>
<td>Weather / Climate Change, soils aren’t fertile</td>
<td>1.2</td>
</tr>
<tr>
<td>Farms are bigger</td>
<td>0.8</td>
</tr>
<tr>
<td>Counterfeits increase</td>
<td>0.5</td>
</tr>
<tr>
<td>No response</td>
<td>0.5</td>
</tr>
</tbody>
</table>

### Supplementary Figure SF 7: Attitudes regarding future possible change in the pesticide sector in Uganda.
**Supplementary Table ST 24: What companies are you subscribed to receive regular messages with business-related information on your mobile phone?**

<table>
<thead>
<tr>
<th>Company</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bukoola Chemicals Industries Ltd</td>
<td>35.8%</td>
</tr>
<tr>
<td>Wefarm</td>
<td>22.8%</td>
</tr>
<tr>
<td>various verified Agrodealers</td>
<td>21.6%</td>
</tr>
<tr>
<td>East African Seed (U) Ltd</td>
<td>14.2%</td>
</tr>
<tr>
<td>Daps Distribution Co.Ltd</td>
<td>11.1%</td>
</tr>
<tr>
<td>various unverified Agrodealers</td>
<td>11.1%</td>
</tr>
<tr>
<td>Jubilee Insurance Company of Uganda Ltd</td>
<td>9.9%</td>
</tr>
<tr>
<td>NGOs and Government</td>
<td>6.8%</td>
</tr>
<tr>
<td>No response / Don’t remember / Don’t know / Unrelated answers</td>
<td>7.4%</td>
</tr>
</tbody>
</table>

**Supplementary Table ST 25: Detailed safety equipment layout**

<table>
<thead>
<tr>
<th>Safety Equipment</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>nothing available (not visible)</td>
<td>61.2%</td>
</tr>
<tr>
<td>hat</td>
<td>3.1%</td>
</tr>
<tr>
<td>goggles or face shields for eye and face protection</td>
<td>4.6%</td>
</tr>
<tr>
<td>specific or all-purpose gas masks</td>
<td>9.4%</td>
</tr>
<tr>
<td>respirators</td>
<td>9.4%</td>
</tr>
<tr>
<td>long-sleeved, buttoned coat or suit completely covering the worker</td>
<td>11.2%</td>
</tr>
<tr>
<td>gloves (water-proof and impervious)</td>
<td>18.1%</td>
</tr>
<tr>
<td>boots</td>
<td>15.6%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facilities to wash eyes or remove toxic materials from the skin</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>nothing available (not visible)</td>
<td>41.1%</td>
</tr>
<tr>
<td>facilities for washing eyes such as fixed or portable eye-wash fountains</td>
<td>0.5%</td>
</tr>
<tr>
<td>adequate emergency water supply for washing off corrosive or toxic materials getting on the skin</td>
<td>0.5%</td>
</tr>
<tr>
<td>Water Bucket</td>
<td>42.6%</td>
</tr>
<tr>
<td>Soap / detergent</td>
<td>29.9%</td>
</tr>
<tr>
<td>Tap Water outside shop</td>
<td>15.6%</td>
</tr>
<tr>
<td>Tap Water inside shop</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials available to cleanup and decontaminate spills</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>nothing available (not visible)</td>
<td>41.8%</td>
</tr>
<tr>
<td>broom</td>
<td>56.6%</td>
</tr>
<tr>
<td>inert absorbent material such as sand, soil or sawdust</td>
<td>1.3%</td>
</tr>
<tr>
<td>disposable container</td>
<td>2.3%</td>
</tr>
<tr>
<td>hydrated lime or soda ash</td>
<td>0.3%</td>
</tr>
<tr>
<td>clay or similar material for absorbing scrubbing liquid</td>
<td>1.8%</td>
</tr>
</tbody>
</table>