Specific PRAs for grain pests

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Plant Health Director - Honduras
### Area and production of basic grains of the OIRSA region countries 2010/11

<table>
<thead>
<tr>
<th>Countries</th>
<th>MAIZE</th>
<th>RICE</th>
<th>SORGHUM</th>
<th>BEANS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area (ha)</td>
<td>Production</td>
<td>Area (ha)</td>
<td>Production</td>
</tr>
<tr>
<td>Guatemala</td>
<td>840,000</td>
<td>1625,120</td>
<td>8,540</td>
<td>25,088</td>
</tr>
<tr>
<td>Honduras</td>
<td>335,850</td>
<td>587,682</td>
<td>9,099</td>
<td>49,273</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>8,600</td>
<td>18,765</td>
<td>66,415</td>
<td>264,756</td>
</tr>
<tr>
<td>Nicaragua</td>
<td>382,900</td>
<td>600,386</td>
<td>80,500</td>
<td>237,727</td>
</tr>
<tr>
<td>El Salvador</td>
<td>253,894</td>
<td>768,113</td>
<td>4,916</td>
<td>34,479</td>
</tr>
<tr>
<td>Panama</td>
<td>58,600</td>
<td>85,959</td>
<td>112,940</td>
<td>304,059</td>
</tr>
<tr>
<td>Dominican Republic</td>
<td>22,988</td>
<td>35,110</td>
<td>185,399</td>
<td>552,518</td>
</tr>
<tr>
<td>Belize</td>
<td>3,584</td>
<td>7,509</td>
<td>223</td>
<td>6,692</td>
</tr>
<tr>
<td>Mexico</td>
<td>7,726,109</td>
<td>20,142,815</td>
<td>60,771</td>
<td>263,027</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>9,632,524</td>
<td>23,871,459</td>
<td>528,803</td>
<td>1,737,619</td>
</tr>
</tbody>
</table>

**Sources:** Statistics of the Ministries/Secretaries of Agriculture and Central Banks of the countries

### Imports of grains to Central America during 2010 (in MT)

<table>
<thead>
<tr>
<th></th>
<th>Guatemala</th>
<th>Honduras</th>
<th>El Salvador</th>
<th>Nicaragua</th>
<th>Costa Rica</th>
<th>Central America</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>1,292,415</td>
<td>678,225</td>
<td>917,418</td>
<td>452,496</td>
<td>1,033,643</td>
<td>4,374,200</td>
</tr>
</tbody>
</table>
Cases on PRA in grains
PRA on *Steneotarsonemus spinki* Smiley*

- **PRA area:**
  
  Guatemala
  Belize
  El Salvador

- In the list of pathways for this PRA, it is included “Seed of host plants (rice for planting, including paddy rice or rice husks not intended for planting)”

- Paddy rice is considered a likely entry pathway for *S. spinki* to enter the PRA area, especially due to the high volumes moving internationally

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* ECHEGOYEN RAMOS, P.E. 2005. Pest risk analysis for *Steneotarsonemus spinki* Smiley in the Central American area where it has not been reported yet. San Salvador, El Salvador. Unit for Support in Epidemiological Surveillance and Pest Risk Analysis, OIRSA. 26 P.
ARP sobre *Steneotarsonemus spinki* Smiley

As options for risk management for hulls and paddy rice are proposed:

– Prohibit importation of hulls (rice husks) and other milling residues originated from rice coming from infested areas, or;
  • Permitted entry if the product is subject to a proper phytosanitary treatment

– Prohibit importation of paddy rice and rice seed for planting if it comes from infested areas, or;
  • Permitted entry if the product is subject to a proper phytosanitary treatment or tested to verify if consignments are mite-free
PRA for grains and flours*

PRA area: Guatemala

Potentials of pest risk\(^1\) and number of species by type

<table>
<thead>
<tr>
<th>Risk potential</th>
<th>Arthropods</th>
<th>Bacteria</th>
<th>Fungi</th>
<th>Weeds</th>
<th>Nematodes</th>
<th>Viruses and phytoplasms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Medium</td>
<td>57</td>
<td>6</td>
<td>13</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>High</td>
<td>17</td>
<td>4</td>
<td>8</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>162</td>
<td>74</td>
<td>10</td>
<td>21</td>
<td>35</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

1 The pest risk potential is obtained by adding the ratings of the risk of "Likelihood of Introduction" and "Consequences of Introduction"

Options proposed for risk management of grains and flours

– Inspection of the product at points of entry (this option is especially recommended for low risk pests)

– Sampling (for inspection or to test at a laboratory)
Options proposed for risk management in grains and flours

– Where appropriate, apply treatment with methyl bromide or phosphine [phosphane - phosphorus trihydride] to consignments, either in origin or in destiny
  • If treatments in origin are certified prior to the formation of the consignment, verify the absence of pests in the ship's holds before loading the ship with grain
  • In case of treatments with phosphine during transportation, in trips shorter than the required exposure period, or at temperatures lower than the required, the treatment is ineffective

– As regards weed seeds, carry out a screening of the product either in origin or in destiny with the appropriate biosecurity measures
Options proposed for risk management of grains and flours

- Prohibited entry when in consignments are detected specific quarantine pests for which do not exist options for risk management (e.g. certain fungi and bacteria)

- For paddy rice, if *Aphelenchoides besseyi* is detected, treat the product with heat at 56°C during 15 minutes
PRA for *Polygonum lapathifolium*

PRA area: Nicaragua

This PRA was carried out due to the repeated interceptions of *Polygonum lapathifolium* seeds and of other weeds in imports of paddy rice, consigned to the milling industry of the country

PRA for *Polygonum lapathifolium*

Two cases of *P. lapathifolium* in environments similar to those of the PRA area

Case 1: In the state of Sao Paulo, Brazil. At the Tropic of Capricorn (south)

Case 2: In the state of Veracruz, Mexico. At the Tropic of Cancer (north)
Case 1. Distribution and abundance of *P. lapathifolium*, Sao Paulo

Fig. 22. Status of *Polygonum lapathifolium* in 18 dams of five ribers in the state of Sao Paulo, Brazil. Abbreviations: asnm = above sea level (approximately determined with Google Earth); FR = Relative Frequency of *P. lapathifolium* in the basin (Martins et al. 2008); IVI = Importance Value Index (Cavenghi et al. 2005); SP = Sampled points per dam (Martins et al. 2008); km2 = square kilometers.

Tags: A = dam; P = dams where *P. lapathifolium* was not detected; A = Dams where *P. lapathifolium* was detected. (Martins et al. 2008)
Case 2. Populations of *P. lapathifolium* in the state of Veracruz, Mexico (Pictures courtesy of Eric Estrada Cruz, CESVVER)
PAR for *Polygonum laphathifolium*

Risk assessment:

- *P. laphathifolium* easily adapts to different tropical fresh water environments, so it is very likely that it establishes and disseminates in this type of environments in Nicaragua.

- It is very likely that *P. laphathifolium* be introduced to Nicaragua through the pathways under study, if no effective measures are implemented to manage these risks.

- Some areas for tourism, fishing and other human activities probably would not be used any longer due to being invaded by weeds.
PRA for *Polygonum lapathifolium*

Options proposed for pest management:

– Prevention of contamination, or decontamination of consignments and their certification as free of weed seeds by the exporting country

– Inspection of consignments (including sampling)
PRA for *Polygonum lapathifolium*

Options proposed for risk management (cont.):

- Setting a tolerance for weed seed in products that can be satisfactorily decontaminated (parameters have to be defined)

- Decontamination of the product (screening or other process) and destruction or devitalization of weed seed (by heating or methyl bromide)
Conclusions

• Most countries in the OIRSA region import large quantities of grains, however, their productions are very significant, especially basic grains, which are key to food security of their citizens.

• The international movement of grains involves risks of quarantine pests, so it is necessary to manage them in order to protect grain importing countries from the introduction of these pests.