PHI10: Ralstonia solanacearum and/or Clavibacter michiganensis subsp. sepedonicus (Potato brown rot and/or ring rot)

Description: The annual percentage of compliant results with respect to the control of potato brown rot and/or ring rot (Ralstonia solanacearum and/or Clavibacter michiganensis subsp. sepedonicus) within the framework of the FASFC control plan.

Results:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of samples</th>
<th>% conformity</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2,476</td>
<td>100 %</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2009</td>
<td>2,188</td>
<td>99.95 %</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2008</td>
<td>2,222</td>
<td>100 %</td>
<td>Not applicable</td>
</tr>
<tr>
<td>2007</td>
<td>3,151</td>
<td>100 %</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Calculation of the indicator: Compared to 2009, there was an increase of 0.05 % in 2010. Compared to 2008, there was a reduction of 0.05 % in 2009. Compared to 2007, there was no change in 2008.

Interpretation: This indicator measures the presence of potato brown rot and/or ring rot within the Belgian plant production chain. An increase of this indicator, i.e. an increase in the percentage of compliant samples, therefore implies an improvement in the plant health situation in Belgium.

Part of the chain to which the indicator applies: Primary plant production, plant and plant product trading (including exports), plant propagation.

Type of plant or plant product: Seed plants, table plants.

Category: Control.

Justification for the selection of this indicator: The presence on the Belgian territory of harmful quarantine organisms such as potato brown rot and ring rot can be extremely detrimental, economically speaking, to plant and plant product production. It is therefore essential to maintain/improve the phytosanitary situation by verifying the absence of these organisms.

Additional information: In the EU, Ralstonia solanacearum is mainly found in potatoes (Solanum tuberosum), tomatoes (Lycopersicon esculentum) and woody nightshade Solanum dulcamara. R. solanacearum is widespread in tropical, subtropical and warm temperature areas throughout the world. In the EU, a "low temperature" strain is adapted to cooler climates in the highlands of the tropics and in the Mediterranean area. Its occurrence has now been reported from temperate zones, and in particular from a number of European countries in the 1990s. Due to the existence of various strains, this bacterium can be found throughout the world.

The bacterium can spread in soil, in which it survives for varying periods of time, and in irrigation and drainage water. The entry of the bacterium into plants is by way of injured roots, stem wounds or through stomata. Within the plant, the bacteria move in vascular bundles (including the tubers for potatoes, which has the most significant potential economic impact), a process which is accelerated by higher temperatures.

The first visible symptom on potatoes is the wilting of the leaves at the ends of the branches during the heat of the day with recovery at night; eventually plants fail to recover and die. In terms of the tubers, a bacterial ooze often emerges from the eyes and stem-end attachment of infected tubers.

Further information relating to potato brown rot and ring rot is available at the following address:

In the EU, Clavibacter michiganensis subsp. sepedonicus can only be found naturally in potatoes. This bacterium can be found in the EU, America (North, central and South) and in Asia. The temperature optimum for the growth of C. michiganensis subsp. sepedonicus is relatively low (21°C) and is mainly confined to cooler areas of the world.

After a diseased potato is planted, the bacteria multiply very rapidly and pass along the vascular strands into the stems and petioles. From there they reach the roots and maturing daughter tubers, sometimes within eight weeks of planting, thereby representing a significant economic impact.

The symptoms shown on infected plants are rather variable. They usually appear late in the growing season. First symptoms of wilting develop in the lower leaves, before spreading to the entire plant. In terms of the tubers, wilting of the vascular ring occurs, which becomes progressively yellow then light brown (= wet bacterial rot).

This bacterium is spread by direct tuber to tuber contact or indirectly via machinery, storage areas or other materials, which have been in contact with the contaminated tubers.

Other information relating to potato ring rot is available at the following address:
Legal framework:
1. Council Directive 2000/29/EC of 8/05/2000 on protective measures against the introduction into the Community of organisms harmful to plants or plant products and against their spread within the Community.
4. Ministerial decree of 4/07/1996 establishing the conditions under which certain harmful organisms, plants, plant products or other objects listed in appendices I to V of the Royal Decree of 3 May 1994 on the control of organisms harmful to plants and plant products, may be introduced or moved within the Community or certain protected zones thereof for trial or scientific purposes or for work on varietal selection.
5. Ministerial Decree of 14/02/2000 setting out the measures to prevent the spread of Ralstonia solanacearum (Smith) Yabuuchi et al.
6. Ministerial Decree of 30/08/1999 on the control of Ralstonia solanacearum (Smith) Yabuuchi et al.
7. Ministerial Decree of 3/11/1994 on the control of bacterial ring rot of potato (Clavibacter michiganensis (Smith) Davis et al. spp. sepedonicus (Spieckermann et Kotthoff) Davis et al.).

Does the indicator meet the set criteria?
- Measureable (availability of quantitative data)
- Independent (no overlap between respective indicators)
- Reliable (bias sensitivity)
- Availability of information contained in existing reports or documents
- Relevancy with respect to the health situation of plant production
- Clear interpretation
- Sustainable
- The body of indicators must be representative of the plant and plant product production chain

Comments: Uncertain relevant data extraction The statistical data listed for year ‘a’ actually relate to the previous crop year ‘a-1’ (= from 1st June of year ‘a-1’ to 31 May of year ‘a’), and are in accordance with the statistical data published in the FASFC annual activity reports and with the requirements on the reporting of findings to the European Commission.

Explanatory notes to the results: In 2009 (= 2008 crop year), the findings for brown rot were 100% consistent with respect to seed potatoes but 1 case of contamination was confirmed for one batch of farmer’s seed potatoes. All measures required to ensure the complete eradication of the bacterium were taken: destruction (through biomethanisation) or safe processing (for example into mashed potato, at the end of the working day and ensuring decontamination of the production line, waste incineration and water treatment).