Experiences of Wheat dwarf virus in Finland 2004-2007
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The occurrence of Wheat dwarf virus (WDV) 2004-2007

- WDV was first found in samples from Ekenäs, Sjundeå and Sibbo in 2004

- The first samples of winter wheat were analyzed by Swedish University of Agricultural Sciences

- WDV probably occurred already in 2003 according to symptoms reported by farmers

- The occurrence was general and infestations were severe in 2004

- In 2005 and 2006 very few reported cases

- In 2007 WDV was again reported, but the occurrence was not as general and the infestations were not as severe as in 2004
Estimated yield reductions in winter wheat
(based on observations made by advisors and farmers):

2004:
- usually 20-40%
- in some cases up to 100%

2007:
- appr. 5-15%
WDV-positive plants

WDV-symptoms observed by NSLs advisors

WDV 2007

Valkeala 1
Lapinjärvi 2
Liljendal 1
Pernä 2
Vichtis
Somero
Sjundeå
Inga
Vahko
<table>
<thead>
<tr>
<th>Location</th>
<th>Tillage</th>
<th>Preceeding crop</th>
<th>Sowing date</th>
<th>Yield reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borgå</td>
<td>Direct drilled</td>
<td>Spring turnp rape</td>
<td>10.09.2006</td>
<td>15 %</td>
</tr>
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<td>Lappräsk</td>
<td>Reduced</td>
<td>Spring turnp rape</td>
<td>01.09.2006</td>
<td>10 %</td>
</tr>
<tr>
<td>Lappräsk</td>
<td>Reduced</td>
<td>Peas</td>
<td>28.08.2006</td>
<td>15 %</td>
</tr>
<tr>
<td>Pernå</td>
<td>Reduced</td>
<td>Winter wheat</td>
<td>15.09.2006</td>
<td>5%</td>
</tr>
<tr>
<td>Liljendal</td>
<td>Reduced</td>
<td>Winter wheat</td>
<td>02.09.2006</td>
<td>15 %</td>
</tr>
<tr>
<td>Valkeala</td>
<td>Reduced</td>
<td>Spring turnp rape</td>
<td>12.09.2006</td>
<td>10%</td>
</tr>
</tbody>
</table>
WDV in winter wheat in 2004
WDV in winter wheat in 2004
Influencing factors based on field observations 2004 and 2007

- The tillage was the most important factor

- The incidence was higher in direct drilled fields or fields with reduced tillage (more plant residues on the surface)

- The preceding crop important

- Early sowing in Finland?

- Direct drilling and reduced tillage have increased rapidly in Finland in the last 10 years

- Area of grass (set aside) have increased since 1995.
Preventive measures

- Due to the random occurrence of WDV, forecasting is important

- Leafhoppers were monitored with sticky traps in 2004 in collaboration with MTT (Agrifood Research Finland)

- More systematic monitoring since 2005 organized by MTT
Monitoring of leafhopper 2005 (Psammotettix alienus)
Monitoring of the leafhopper 2006

(Psammotettix alienus)

Pernă 2006
Field trials:
- Control of the leafhopper with seed dressing and spraying
- NSL/Syngenta, seed dressing, autumn treatment
- NSL/MMT, spring treatment – timing
- MTT