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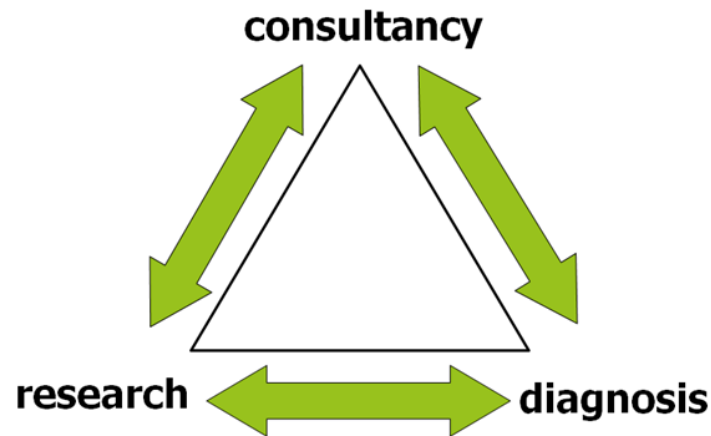
Renate Ellens

PAMV on the rise?

EAPR Phytopathology
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Research & Diagnostics lab



Performing diagnostics on wide variety of crops from both trial and production fields

Main focus on potato due to location, crop importance and potato generally being a bit of a wuss.



Diagnosics on potato

Diseases (Tubers)	Occurrence
Powdery scab	Common
<i>Fusarium</i> spp.	Common
<i>Phoma</i> spp.	Common
<i>Alternaria solani</i>	Occasional
Late blight	Common
Armillaria dry rot	Rare
Silver scurf	Common
Black Dot	Common
Black Scurf	Common
Violet Root Rot	Common
PAMV	Occasional
TRV	Common
PVY	Common
PVA	Occasional
PMTV	Rare
<i>Dickeya</i> spp. & <i>Pectobacterium</i> spp.	Common
Rootknot nematode	Occasional
Stem nematode	Occasional
Non-Germination/Herbicide damage	Common
Herbivory (slugs, mice, insects)	Common

Diseases (Plant)	Occurrence
Early blight	Common
Late blight	Common
Ozone damage	Common
<i>Rhizoctonia solani</i>	Common
White mold (<i>Sclerotinia</i>)	Occasional
Verticillium wilt	Common
Black dot	Common
PVY	Common
PVA	Rare
Bacterial rot	Occasional
Cyst nematodes (<i>Globodera</i>)	Common
Root lesion nematodes (<i>Pratylenchus</i>)	Occasional
Thrips, beetles	Occasional
Nutrient deficiencies	Common

Varying from quick 2 minute microscopic checks to real mystery samples that take weeks

Microscopic and molecular analyses



PAMV: Potato Aucuba Mosaic Virus



Foliage

Yellowing, mosaic, occasional deformation. Very much cultivar-dependent

Can be confused with: PMTV, TRV, mutants

Tubers

Necrotic (brown/black) tissue

Can be confused with: PMTV, TRV, Calcium deficiency, "necrotic hearts" (oxygen deficiency), late blight



PAMV: Lifestyle and transmission



- Transferred by aphids, most notably *Myzus persicae* (peach aphid)
- Expands in storage (!)
- Can be transferred mechanically from infected to clean plants
- Needs help to transfer: Potyviruses linked to PAMV
- Potyviruses include PVY and PVA



The PAMV story becomes a PVA/PVY story

PVY

Well-known virus. Tested for both officially and voluntarily

Accepted up to 10% in ware potatoes

PVA

Can be tested for, but is not done often

Often asymptomatic, can resemble sulfur deficiency

PAMV

Rarely tested for!

Any other potyviruses out there?



PAMV found in...:

Netherlands

Belgium

France

Poland



→ 6 different cultivars positive in 14 samples

5 positive PVY, 8 positive PVA



PAMV can be transmitted throughout the plant

Small trial

Tubers positive for PAMV and PVY, containing necrotic symptoms
planted in small greenhouse free of aphids

Daughter tubers tested positive for PAMV and PVY



The message

PAMV is present in the Netherlands and the surrounding countries

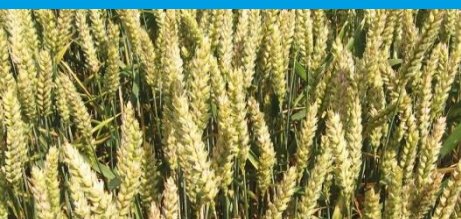
We only get diagnostic samples: the size of the problem remains to be studied

Causes necrotic lesions in tubers, mostly causing problems in ware potato production

Not much known about the virus other than its relationship with potyviruses (often comes with PVA and/or PVY)

Basically a warning: don't overlook PAMV.





HLB Dept. Of Diagnostics



Thank you!

