

Meeting Name: National Potato Virus Forum

Meeting Date: 14/01/20

Circulation:

Location: NFU HQ, Stoneleigh

Chairman: Alex Godfrey

Present: Alex Godfrey (Chair, NFU), Rob Clayton (AHDB), Rupert Weaver (NFU), Graham Nichols (NFU), Mark Taylor (FPSA), Vidyanath Gururajan (FPSA), Paul Wood (BPTA), John Addams-Williams (BPTA), Lynne Bradley (APHA), Helen Appleyard (NIAB), Tom Wood (NIAB), Eric Anderson (Ind Agronomist), Colin Herron (PPA), Graham Tomalin (Ind Agronomist), Rob Blades (Ind Agronomist), Adrian Fox (FERA), Sue Cowgill (AHDB), Jon Pickup (SASA), Christophe Lacomme (SASA), Peter Loggie (NFUS, Telephone), Peter Grewar (NFUS, Telephone).

Apologies: Sophie Churchill (AHDB)

AHDB/NFU National Potato Virus Forum

Welcome and Objectives

AG opened the forum, noting that those present were there as industry representatives rather than as individual businesses.

The meeting aimed to draw together a number of discussions which had already taken place throughout the industry, and the aim of the day was to establish actions to reduce the future impact of virus, and not assign blame for the previous season.

AG referenced the AHDB survey which went out prior to the meeting to get views from the industry on what the outcomes of the meeting should be. It was apparent that there is interest in exploring all options, and key outcomes desired were based on good practice and increasing knowledge on the certification scheme. Early results from the NFU survey, which is still being conducted, suggest that the average loss from virus for per affected UK grower responding is approaching £50,000. The international nature of the issue and potential impact on seed imports was also noted.

Stakeholder views and asks

Those in the room were asked to briefly outline their key views and asks for the virus issues. The overarching theme coming out of this was the need to restore trust and confidence in the quality of seed. Instrumental within this were questions about the sampling and testing procedures, queries around timings of inspections and burn downs, as well as downgrading, and communications with growers.

A full list of the views and asks is attached/included below as an appendix.

Researcher views on sampling and diagnosis

Adrian Fox gave an overview of sampling and diagnosis of virus. The key impacts of the mosaic virus are yield and quality loss, with further issues for processors where the sugar-starch balance has been disrupted.

The key mosaic viruses transmitted by aphids are PVA and PVY, of which there are several further strain types. The one most prevalent in the 2018 season whose symptoms were observed in 2019 was PVY NTN.

Adrian gave an overview of Post-harvest virus testing, outlining the advantages and the limitations. The key advantages of post-harvest testing are that it is based on diagnostic data rather than visual inspection, and will detect virus presence in varieties which are not showing symptoms. It can also allow for a definite identification of the virus strain which is present.

Limitations of this form of testing were noted such as only picking up viruses that are specifically being tested for, and not being able to predict the impact of the virus present and what level will be passed down to daughter stocks. Also noted was that the accuracy of the testing would always be dependent on the sampling and bulking of sub-samples prior to testing. A discussion took place as to the best method of sampling, in particular a 'W' pattern vs. a grid pattern, but it was agreed that in-field sampling was preferable to sampling from boxes.

A key shortcoming of any form of virus testing is it is nearly impossible to derive an estimate of the eventual loss and damage to the main crop, as there are so many variables beyond virus level, such as the variety, virus strain, environment etc.

Also covered were the two main methods of post-harvest testing; the grow-out test and the direct test. Interpretation is key for both of these tests, with the error bars becoming wider as virus level increases. Due to the margin of error it would be impossible to definitively declare a sample as virus free. A larger sample size decreases the margin of error but can quickly become prohibitively expensive.

Concern was raised over consistency of the testing bodies but stakeholders were pleased that the labs involved were already in discussion and had solutions to propose. The two main answers to this are either standardisation of the method or a proficiency test. Standardising the methodology may not be practical as each testing body will have its own procedure and equipment, and changing this would make historical data incomparable and require re-training and re-certification of personnel. A proficiency test would allow confidence that results between testing bodies are comparable, although the raw figures may not necessarily be similar.

Actions agreed were:

- *A sub-group to investigate establishing a standard sampling protocol*
- *Creation of a forum between certification bodies to understand inconsistencies and utilise proficiency testing.*

Update from APHA

Lynne Bradley updated on APHA's view of the scheme and possible changes, further to a meeting she had convened last week, in particular noting that there are many different pathways for virus to get into the crop following the visual inspection, and prior to planting by the ware grower.

The previous meeting with stakeholders last week had raised four possible options:

- Only allow single parent stock within each seed stock
- A choice of compulsory burn down following inspection or post-harvest test
 - To date virus if levels reach 1/3 of tolerance at any level it always triggers an immediate burn down (21 days) or an automatic downgrade to the relevant grade.
 - Questions were raised over policing of this, and also the loss to seed growers where seed becomes unmarketable.
 - Also raised was the timing of inspections, and the practicality of later inspections where green cover makes inspection difficult.
- Checks of adjacent ware crops
 - Questions were raised over neighbourly relations, and other crop types which may harbour aphids
- Remove 10m buffer downgrade in adjacent stock when virus found and downgrade whole of adjacent stock. In the case where stock fails for virus require tuber indexing of adjacent stocks.

Actions agreed were:

- *A risk assessment based on variety and varietal propensity carried out by an independent body*
- *APHA to produce a standardised question to be circulated by all stakeholders to their contacts to request that growers report lot numbers of any affected 2019 seed to APHA*

Update from SASA

Jon Pickup from SASA explained that the current testing method is inexpensive and allows adhering to strict tolerances. Post-Harvest testing by comparison is relatively expensive with relatively crude tolerances, and depends heavily on sampling methodology. However, it has the advantage of picking up on late season transmission and on varieties which show no symptoms.

JP illustrated ways in which SASA were seeking to keep pace with industry views and intelligence e.g. through modifying models to account for the impact of willow-carrot aphid on virus prospects. JP's forecast for virus in 2020 was at least as high as 2019.

The importance of taking varietal variation into account was discussed, as some varieties will have a natural resistance to the virus, whilst others have a natural tolerance which allows for them to harbour a significant reservoir of virus which may be passed on to other varieties, without there being any apparent ill-effects such as yield or quality loss. The role of varietal propensity as a grower tool was discussed noting that figures were available for most common varieties in Scotland but not in England. Some concern was expressed that the

figures were a reflection of how varieties were managed rather than a genuine pathological measure. This should be teased out before being adopted.

Discussion on APHA and SASA Updates

The discussion raised that the visual inspection system on which we are reliant, is good at picking up secondary infection but can barely pick up primary infection at all unless it is early growing season. However, it is this primary infection in the seed crop which leads to problems for ware growers.

This also led to a question of whether the key aim is to reduce the overall level of virus in the environment or just to reduce the impact it has on ware crops. It was felt that both needed equal priority and grower communication and varietal risk assessments would be a key part of addressing this.

Best practice exercise

Attendees were split into three groups and asked to consider how best practice could be developed or spread to have the biggest impact on reducing the problem. Actions that the groups felt ought to be the subject of focus (largely for communications) were:

- Use of farm saved seed and its role in maintaining/growing the reservoir of virus
- Reducing groundkeepers
- Focus on the seed crop/ not growing for ware tops / growing for tuber numbers not yield (re-plantable hectares),
- Effective timings of application & desiccation
- Reduction in field generations
- Control of vectors

A full matrix of the responses is attached as an appendix.

AHDB Knowledge Gap exercise

Sue Cowgill updated on AHDB work on knowledge gaps. Aphid and virus control is a key focus of the 2020 onwards strategy, and some work has already been initiated on screening cereal aphids for pyrethroid resistance. A tender has also gone out for a research project on aphid control options, within the constraints of what might be available.

More immediately, discussions from the meeting will be used to further inform the Q&A document.

Looking ahead, a joint workshop with AHDB horticulture will take place in March as there are a number of shared aphid issues, and a workshop is planned for looking at 'outside the box' options for disrupting virus transmission.

Actions agreed were:

- *AHDB to collate key asks and concerns to form press plan.*
- *Group to put together a unified industry response to be sent out alongside AHDB Q&A.*
- *A piece of work on increasing transparency of seed labelling for ware growers.*

Conclusions & Next Steps

The group agreed that it should reconvene in approximately one year to gauge the impact of agreed actions and consider further actions required. However, it asked that in the meantime the Industry Stakeholder Forum monitor progress against the agreed actions as a standing agenda item at its meetings.

Summary of key outcomes and actions

A number of key outcomes and actions were identified and agreed:

- A sub-group to investigate establishing a standard sampling protocol
- A piece of work on increasing transparency of seed labelling for ware growers.
- Creation of a forum between certification bodies to understand inconsistencies and utilise proficiency testing.
- A risk assessment based on variety and varietal propensity carried out by an independent body
- APHA to produce a standardised question to be circulated by all stakeholders to their contacts to request that growers report lot numbers of any affected 2019 seed to APHA
- AHDB to collate key asks and concerns to form press plan.
- Group to put together a unified industry response to be sent out alongside AHDB Q&A.
- Reconvene in 1 year to review; Industry Stakeholder Group to review progress in interim