

POTATO VIRUS Y (PVY)



Potato virus Y (PVY) is causing a common viral disease in potatoes named potato tuber necrotic ringspot disease (PTNRD). This disease leads to big crop losses. PVY is spread by aphids, but can also lie dormant in seed potatoes. The PVY test can determine the actual level of infection in the analysed sample, which can be used to calculate the probable infection level in the seed lot.

Using infected seed potatoes for several generations will lead to a successive increase in the amount of virus and this results in crop losses. The viral disease can be hard to visually detect since the symptoms are mild or non-existent. PVY tests can be performed in different ways, e.g. PCR, ELISA or bio-testing.

Our method for analysing for PVY is based on PCR, which means that the presence of PVY is determined by DNA technique which is fast and allows for combining several tests, for example PVY, blackleg and phoma without extra sample preparation costs.

PCR method

The advantage of using PCR compared to other techniques is that the analysis can be performed at an earlier stage since the potatoes do not have to develop sprouts and that the method is more sensitive.

Sampling and analysis

For PCR based PVY tests the basal end of a specific number of potatoes are sampled. These are pooled in sub-samples and form an analysed sample. This means that each individual tuber is not tested separately. It is important that enough tubers from the same lot are tested to ensure that the result for the sample is representative for the original lot. When the level of infection is expected to be low the recommended sample size is 200 tubers and 100 tubers can be enough for an expected high level of infection.

Sample size and sampling

Alternative 1

The sample should contain 100 tubers. The sample is divided in to 10 sub-samples with 10 tubers in each.

Alternative 2

The sample should contain 200 tubers. The sample is divided in to 16 sub-samples with 12 tubers in each. A higher number of tested tubers gives an increased reliability especially at low levels of viruses.

To minimize the cost of the analysis and shipping, you can do the sampling from the tubers yourself. Sampling materials and instruction can be ordered at: agritech.sweden@intertek.com

The order form must be sent to agritech.sweden@intertek.com and a printed copy must be included with the samples. Please note that the order form contains two pages. The customer information must be filled in on page 1, including e-mail and address where the results are to be sent, and the sample ID number and tests to be performed must be filled in on page 2.

The Intertek General Terms and Conditions of Services applies, a copy of which can be obtained from www.intertek.com/terms.

Shipping

Samples can be shipped to the laboratory by preferred courier or they can be left directly to us (see opening hours below). If the samples are shipped pre-sampled it is important to keep them frozen throughout transportation.

Intertek AgriTech
Elevenborgsv. 2
SE 230 53 Alnarp
Sweden

Phone: +46 40 69 28 001

Opening hours: 8.00am - 4.30pm

