

Advice Sheet 9: Soil Sampling for Potato Cyst Nematode

FROM DECEMBER 2025 NRM WILL NO LONGER BE ACCEPTING SAMPLES FOR PCN ANALYSIS

Potato cyst nematode (PCN) causes annual UK yield losses of potatoes in excess of £26 million. The essential first step of any integrated PCN control programme is the accurate assessment of PCN population density. This information can only be obtained by careful soil sampling, followed by laboratory analysis for PCN cysts and eggs.

Depending on the level of PCN infestation, control measures employed may include the use of varietal resistance / tolerance, widening of potato rotations, growing of trap crops, bio-fumigation or nematicides.

NRM currently offers analysis of soil for Potato Cyst Nematode (PCN) via a partner laboratory.

Potato Cyst Nematodes (PCN)

We direct the reader to the guide by the Agriculture and Horticulture Development Board (AHDB), 'PCN – Sampling and laboratory guide', which was released in 2018. Customer services at NRM can provide a copy on request.

Please note that Statutory regulations cover the sampling of soil for PCN when growing seed potatoes. Comments here, and in the AHDB guide, only cover sampling for ware potato production.

Filling out the request form

- As the AHDB guide advocates, each sample should be taken from a 1ha sampling unit or less, comprising approximately 45-50 separate cores. We advocate GPS sampling as best practice for sample traceability. Please use a separate form for each field.
- Once the grower and/or agronomist has decided on the amount of soil to be extracted by the laboratory, tick the appropriate box. Please note we will still continue to offer a 100g extraction as an option even though the guide only mentions 200g, 400g and whole sample extraction, to allow a cost effective option if deemed appropriate by the grower and/or agronomist.
- Speciation can only be determined if eggs or larvae are present, not if only the cyst shells remain. This is a requirement in the AHDB guide and knowledge of the species of PCN present (*Globodera pallida*, *Globodera rostochiensis* or both) will allow the development of an integrated pest management strategy.
- Decide if you need a bulk speciation for each field or an individual speciation for each sample.

Sending the sample to the laboratory

We will need 1kg of soil for the 100g, 200g and 400g extraction, and 3kg for the 1kg extraction.

Due to the bulk and weight of the samples ideally they should be dispatched to us via a courier service. No single packet should exceed 15 kg as these have to be lifted and carried by both the delivery drivers and laboratory staff. Each packet should contain its own paperwork. Soils should be sent to us in a suitable sealed container, we are able to supply suitable packaging if required.

If the sample we receive is below the recommended weight the assumption will be that the appropriate sub-sampling has already been undertaken. NRM will only contact you if the final weight after drying does not meet the sample weight required to perform the analysis.

If a nutritional analysis is required then these should be submitted separately. Charges will be incurred for sub-sampling PCN samples for pH, Phosphorus, Potassium and Magnesium.

The PCN test is carried out on an air-dried soil that is then **sieved** to pass a 2 mm screen. The cysts are separated from the soil by floatation using a Fenwick Can. Cysts are identified and counted under a binocular microscope. After crushing eggs/nematodes are counted under a high-powered microscope on a counting chamber.

Irrespective of the weight of soil taken by the laboratory to analyse samples the results are all still reported as cysts per 100g soil and eggs per g.