

**EUROPEAN AND MEDITERRANEAN PLANT PROTECTION ORGANIZATION  
ORGANISATION EUROPEENNE ET MEDITERRANEENNE POUR LA PROTECTION  
DES PLANTES**

(11-17239)

**Summary sheet of validation data for a diagnostic test**

The EPPO Standard PM 7/98 *Specific requirements for laboratories preparing accreditation for a plant pest diagnostic activity* describes how validation should be conducted. It also includes definitions of performance criteria.

<b>Target Organism</b>	Beet necrotic yellow vein virus	
<b>Short description</b>	Detection of BNYVV by ELISA in host plant material	
<b>Laboratory contact details</b>	Anses, Laboratoire de la Santé des Végétaux - Unité de bactériologie, virologie OGM 7 rue Jean Dixméras, 49044 Angers, France	
<b>Date and reference of the validation report</b>	2014-11 - Renaudin I., Loiseau M. (2014). Evaluation des méthodes de détection du Beet necrotic yellow vein virus (BNYVV).	
<b>Validation process according to EPPO Standard PM 7/98:</b>	Yes	
<b>Reference of the test description</b>	PM 7/030(2)	
<b>Is the test the same as described in the EPPO DP?</b>	Yes	
<b>Is the lab accredited for this test?</b>	Yes	
<b>Plant species tested (if relevant)</b>	Beta vulgaris subsp. vulgaris, Spinacia oleracea, Chenopodium quinoa, Nicotinia benthamiana	
<b>Matrices tested (if relevant)</b>	roots	
<b><i>List of methods used</i></b>		
<b>Method for extraction / isolation / baiting of target organism from matrix</b>		
<b>Molecular methods, e.g. hybridization, PCR and real time PCR</b>		
<b>Serological methods: IF, ELISA, Direct Tissue Blot Immuno Assay</b>	X	DAS-ELISA
<b>Plating methods: selective isolation</b>		
<b>Bioassay methods: selective</b>		

<b>enrichment in host plants, baiting, plant test and grafting.</b>		
<b>Pathogenicity test</b>		
<b>Fingerprint methods: protein profiling, fatty acid profiling &amp; DNA profiling</b>		
<b>Morphological and morphometrical methods intended for identification</b>		
<b>Biochemical methods: e.g. enzyme electrophoresis, protein profiling</b>		
<b>Other</b>		
<b><u>Analytical sensitivity (= limit of detection)</u></b>		
<b>What is smallest amount of target that can be detected reliably?</b>	<p>in our condition and with our infected material, between a dilution of 1/100 and 1/250 of an infected material in an healthy material.</p> <p>Approximatly, 40 times less sensitive than real-time RT-PCR (Harju et al., 2005)</p>	
<b><u>Diagnostic sensitivity</u></b>		
<b>Proportion of infected/infested samples tested positive compared to results from the standard test , see appendix 2 of PM 7/98</b>	100%	
<b>Specify the standard test</b>	20 samples agreement/20 (2 replicate for each sample)	
<b><u>Analytical specificity</u></b>		
<b>Specificity value</b>	89%	
<b>Number of strains/populations of target organisms tested</b>	10 different samples infected by BNYVV isolated in France	
<b>Number of non-target organisms tested</b>	<p>4 healthy Beta vulgaris subsp. vulgaris</p> <p>Healthy Spinacia oleracea</p> <p>Tobacco rattle virus</p> <p>Beet black scotch virus</p> <p>Beet mosaïc virus</p> <p>Beet western yellows virus</p> <p>Beet yellows virus</p> <p>Beet soil-borne mosaic virus</p> <p>Soil-borne wheat mosaic virus</p> <p>Potato mop top virus</p>	
<b>Cross reacts with (specify the species)</b>	<p>Beet yellows virus</p> <p>Beet black scorch virus</p> <p>Potato mop top virus</p> <p>Soil borne wheat mosaic virus</p>	

<b><u>Diagnostic Specificity</u></b>	
<b>Proportion of uninfected/uninfested samples (true negatives) testing negative compared to results from a standard test</b>	75%
<b>Specify the standard test</b>	72 samples agreement/96
<b><u>Reproducibility</u></b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	Not evaluated
<b><u>Repeatability</u></b>	
<b>Provide the calculated % of agreement for a given level of the pest (see PM 7/98)</b>	100% in the range of dilution described for analytical sensitivity
<b><u>Test performance study</u></b>	
<b>Test performance study?</b>	No
<b>Include brief details of the test performance study and its output. If available, provide a link to published article/report</b>	
<b><u>Other information</u></b>	
<b>Any other information considered useful e.g. robustness, ease of performing the test, etc.</b>	