

LETTER TO THE EDITOR

FIRST FINDINGS OF PLUM POX VIRUS IN WALNUT TREES
(*JUGLANS REGIA* L.)

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Summary. – Plum pox virus (PPV) was transmitted from infected buds and leaves of walnut tree (*Juglans regia* L.) on the following herbaceous indicators: *Chenopodium foetidum* Schrad., *Nicotiana bigelovii* var. *quadrivalvis* Fuchs., *N. clevelandii* x *N. glutinosa*. A positive ELISA reaction with antisera against PPV was obtained from infected buds and leaves of *Juglans regia* L. and from attacked leaves of indicator plants.

Key words: walnut tree; *Juglans regia* L.; plum pox virus; ELISA

It is well known that PPV attacks mainly different plum cultivars (*Prunus domestica*). Besides that there exist some other hosts in nature like *Prunus insititia*, *P. armeniaca*, *P. cerasifera*, *P. triloba*, *P. tomentosa*, *P. spinosa* and *P. mahaleb* (1, 2, 3, 4, 5).

Also many herbaceous species of several families are known hosts of PPV. Anyway, the presently known host range of this virus cannot be considered final. During our studies on PPV infection of plum trees we have observed that closely located walnut trees (*Juglans regia* L.) manifested pronounced symptoms of apparently the same disease. Therefore we have decided to test them for possible infection with PPV.

The isolation experiments were done as follows. The shoots of the diseased walnut trees were budded in glass-house conditions. From the buds suspensions with 0.02 mol/l phosphate buffer pH 8.0 containing 1% nicotine, 3.5% polyvinylpyrrolidone, 0.1% sodium thioglycolate and 0.02 mol/l Na-dietyldithiocarbamate was prepared and used for mechanical inoculation of herbaceous indicators (6). A positive transmission was observed on *Chenopodium fo-*

etidum where ochre lesions developed. On leaves of *Nicotiana clevelandii* yellow spots appeared. On *N. clevelandii* x *N. glutinosa* first chlorotic and later necrotic rings were found. On *N. bigelovii* var. *quadrivalvis* chlorotic rings were followed by necrotic rings and stripes.

From the positive *C. foetidum* successful a back transmission on *C. foetidum* and *N. benthamiana* was performed. For a serological identification of PPV in naturally infected leaves of *Juglans regia* L. the ELISA was applied (7). Antibodies of PPV ELISA kits from Löwe Biochemica (antibody No. 1) and Boehringer Mannheim (antibody No. 2) were employed. In addition, an antiserum against PPV obtained from Dr. Fuchs, Martin-Luther-University, Halle-

Antibodies	PPV isolates				
	1or	15or	B ₂ or	112or	Xor
No. 1	++	++	+++	+++	+
No. 2	–	–	+++	–	–
No. 3	+	++	++	+	+

Abbreviations: PPV = plum pox virus; ELISA = enzyme-linked immunosorbent assay

(+++), (++) , (+) and (–) correspond to A_{405} values 1.2 – 0.9, 0.202 – 0.170, 0.105 – 0.097, and ≤ 0.003 .

Wittenberg, Germany (antibody No. 3) was used for preparation of an antibody against it.

The results of ELISA demonstrated on the table show that the antibodies No. 1 and No. 3 gave a positive reaction with all isolates (1or, 15or, B₂or, 112or, and Xor) from the buds, leaves and samples of herbaceous indicators, on which a positive transmission was obtained. With the antibody No. 2 did react only the isolate B₂or.

These findings represent apparently the first report on the walnut tree (*Juglans regia* L.) as a host of PPV. Further work on this subject is in progress.

References

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ERRATUM

The following citation was missing in the References to the article by Lee *et al.*: "*Coxiella burnetii* in polymorphic lymphocytes in tissue and blood of patients with polymorphic reticulosis", *Acta Virol.* 39, 269-274, 1995: Kazár J., Kováčová E. (1983): Failure of Q fever phase I corpuscular vaccine to influence the persistence and reactivation of *Coxiella burnetii* infection in mice and guinea pigs. *Acta Virol.* 27, 418-428.