

Data Sheets on Quarantine Pests

Arracacha B 'nepovirus', oca strain

IDENTITY

Name: Arracacha B 'nepovirus', oca strain

Taxonomic position: Viruses: Comoviridae: Possible *Nepovirus*

Common names: AVB-O (acronym)

EPPO computer code: AABOSX

EU Annex designation: I/A1

HOSTS

Two strains of AVB exist, of which strain T, found in *Arracacia xanthorrhiza*, does not infect potatoes (*Solanum tuberosum*) (Kenten & Jones, 1979; Jones, 1981). Strain O (oca strain) of AVB was originally discovered in oca (*Oxalis tuberosa*; Oxalidaceae) and potatoes. The experimental host range includes 30 species of the families Aizoaceae, Amaranthaceae, Apiaceae, Chenopodiaceae, Cucurbitaceae, Fabaceae, Portulacaceae and Solanaceae (Jones & Kenten, 1981).

GEOGRAPHICAL DISTRIBUTION

EPPO region: Absent.

South America: Peru (Andean highlands).

EU: Absent.

BIOLOGY

Little is known of the biology of AVB-O. No vectors are known. The virus is easily transmitted by mechanical inoculation and also through true seed and pollen of potato. It enters most tubers produced by infected plants (Jones, 1982). Strain O differs from strain T in host range and in symptomatology in indicator hosts. The two strains are serologically only distantly related (Jones & Kenten, 1981).

DETECTION AND IDENTIFICATION

Symptoms

AVB-O causes symptomless infections in experimentally inoculated potato plants. Naturally infected plants show calico symptoms, but other viruses have always been found in such plants, in mixed infection.

Morphology

AVB-O forms isometric particles about 26 nm in diameter.

Detection and inspection methods

Indicator plants

On *Chenopodium murale*, AVB-O gives occasional expanding necrotic spots and/or ringspots in inoculated leaves; systemic chlorotic mottle and twisting of young leaves

followed by necrosis of the tip and upper leaves; on *Chenopodium amaranticolor*, small chlorotic or necrotic spots or rings in inoculated leaves, followed by systemic mild mosaic; on *Cucumis sativus*, systemic mild mosaic, leaves produced later being symptomless.

Serological detection methods

Both gel diffusion and ELISA are suitable for use in routine tests (Jones & Kenten, 1985; Schroeder & Weidemann, 1990).

MEANS OF MOVEMENT AND DISPERSAL

AVB-O is transmitted through true seed and pollen and by passage through tubers. In international trade, it could be carried by potato tubers or by true seed of potato.

PEST SIGNIFICANCE

Economic impact

AVB-O is not known to have any direct economic importance in potato.

Control

As with all potato viruses, control depends on the production of high-quality seed potatoes from virus-free nuclear stock.

Phytosanitary risk

AVB-O was originally included among the non-European potato viruses of the EPPO A1 quarantine list (OEPP/EPPO, 1984). In general, all regional plant protection organizations outside South America recommend very strict measures for potato material from that continent. The principal perceived risk is the introduction of new viruses into seed-potato production schemes, increasing the cost and difficulty of operating these schemes, and opening up new possibilities for yield losses from single or mixed virus infections. However, AVB-O could be regarded, among the group of South American potato pathogens, as of relatively minor significance. It is of no direct economic importance in potato and is not primarily a pathogen of this crop (its main host being oca). Though seed-transmitted, it is relatively unlikely to be present in exported breeding material.

PHYTOSANITARY MEASURES

Measures of the type taken against other South American potato viruses, e.g. potato T trichovirus (EPPO/CABI, 1996), will, if necessary, protect against the introduction of ABV-O.

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