

**Pathogen :**

PSbMV Pea Seed borne Mosaic Virus
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Test format :**DAS-ELISA (alkaline phosphatase)****Catalogue number :****PSS10007****REAGENT**

	Coating-Ab	AP-Conjugate-Ab
Batch	80905	80905
Type	Rabbit Polyclonal	Rabbit Polyclonal
Dilution	1/100	1/100
Format	PBS / Glycerol 50%	PBS / Glycerol 50%
Storage temperature	-20°C	-20°C
Use by		

Number of tests	500
Volume per bottle of Coating-Ab*	500 µL
Volume per bottle of Conjugate-Ab*	500 µL

* Volume based on a test performed with 200 µl per well. 1 test = 1 well

QUALITY CONTROL

	Positive Control	Negative Control
Value of ELISA responses (OD 405 nm)*	1.937	0.055

* ELISA responses were measured 1 hour after incubation of substrate (pNPP) at +37°C.



CHARACTERISTICS OF THE DISEASE

Pea seed-borne mosaic virus (**PSbMV**) is a species in the genus *Potyvirus*, family *Potyviridae*. Symptoms are often difficult to identify under field conditions as the virus may be symptomless or show mild mosaic symptoms. PSbMV may severely damage the quality of pulse seed by causing brown rings or line patterns on the seed surface, which may lead to downgrading of seed from human consumption to stockfeed standard.

Field symptoms of PSbMV on pulses are as follows:

- Field peas develop various degrees of stunting, downward rolling of leaflets and a transient clearing and swelling of leaf veins of most cultivars. Infected plants may produce distorted flowers, which often give rise to small distorted pods. Ovule development in affected pods may be uneven, with only one or two seeds produced. Seed coats may split as the seeds mature. The symptoms on seeds result in brown rings and tan spots.
- Faba beans develop systemic dark and light-green zonal leaf mottle, leaf margins become upright and leaf blade is reduced. The seeds from infected plants show brown ring patterns and reduced size.
- Chickpeas develop yellowing on new shoots, mottling of leaves, down curling of leaves and plant stunting.
- Lentils may show no symptoms or there may be chlorosis in new shoots, mottling on leaves, shoot tip necrosis and stunting of plants.

PSbMV is of economic importance in pea, faba bean and lathyrus, mainly due to its effect on seed quality. It has been mistakenly considered to be a minor disease because it often causes only minor yield loss and mild symptoms. However, at the International Centre for Agriculture in the Dry Areas (ICARDA), Syria, glasshouse studies on yield losses due to PSbMV in chickpea, faba bean, lentil and pea showed losses of 66%, 40.5%, 44.6% and 49.2% respectively. The virus is believed to have spread worldwide through the exchange of infected seed. Seed transmission rates of up to 100% in peas and up to 44% in lentils have been reported. PSbMV is also transmitted in a non-persistent manner by more than 20 aphid species and by mechanical means. The most efficient vector is the pea aphid (*Acyrtosiphon pisum*).

MORE INFORMATION

Mohammad Aftab and Angela Freeman. 2006. Temperate Pulse Viruses: Pea Seedborne Mosaic Virus (PSBMV). *State of Victoria, Department of Primary Industries. November. AG1267. ISSN 1329-8062.*

KHETARPAL, RK; MAURY, Y. 1987. PEA SEED-BORNE MOSAIC-VIRUS - A REVIEW. *AGRONOMIE*. Volume: 7. Issue: 4. Pages: 215-224.