



Agdia Launches New ImmunoStrip® and ELISA Kits for *Pseudomonas* spp.

Agdia is pleased to announce the commercial launch of two new diagnostic products to detect plant-pathogenic bacteria in the *Pseudomonas* genus. The [field-deployable ImmunoStrip® kit](#) and [lab-based ELISA kit](#) for *Pseudomonas* spp. are available to order now.

For those interested in sending plant samples for analysis, Agdia's [Testing Services diagnostic laboratory](#) now offers services to test for *Pseudomonas* spp. Agdia's Testing Services laboratory provides expert guidance on crop screening and rapid turnaround time of test results.

The *Pseudomonas* genus consists of nearly 350 species of gram-negative bacteria, many of which can cause disease in a wide range of plants including fruits, vegetables, grains, root crops and ornamental species.

The most prominent phytopathogenic species is *Pseudomonas syringae*, which is among the most widely-studied plant pathogens. *Pseudomonas syringae* consists of over 50 pathovars (pathogenic varieties, or pv.) which are generally host-specific. Diseases caused by *Pseudomonas syringae* occur most rapidly in cool & moist environmental conditions.

While symptoms of *Pseudomonas* infections can vary widely by host, common symptoms include:

- Necrotic leaf spots
- Stem cankers
- Discolored leaf veins
- Shoot-tip dieback in woody species
- Flower blast (blossom blast)

The table below shows notable phytopathogenic *Pseudomonas* species detected by both of the new ImmunoStrip® and ELISA kits. For a full list of species detected and other validation results, see the validation reports available on each product webpage.



Figure 1: The new ImmunoStrip® for *Pseudomonas* spp.



Figure 2: Bacterial blight caused by *Pseudomonas syringae* on lilac, *Syringa vulgaris*. Symptoms on foliage. Courtesy of Nancy Gregory, University of Delaware, Bugwood.org

Table 1: *Pseudomonas* species & pathovars detected by the new test kits



Species / Pathovar	Disease names & affected crops	Detected by ELISA?	Detected by ImmunoStrip®?
<i>Pseudomonas aeruginosa</i>	Bacterial soft rot of fruits and vegetables	Yes	Yes
<i>Pseudomonas amygdali</i> pv. <i>lachrymans</i>	Angular leaf spot of cucurbits	Yes	Yes
<i>Pseudomonas amygdali</i> pv. <i>morsprunorum</i>	Bacterial canker of <i>prunus</i> trees	Yes, low sensitivity	Yes
<i>Pseudomonas cannabina</i> pv. <i>cannabina</i>	Leaf and stem rot of cannabis	Yes, low sensitivity	Yes
<i>Pseudomonas cannabina</i> pv. <i>alisalensis</i>	Bacterial leaf blight in crucifers (broccoli, radish, etc.)	Yes	Yes
<i>Pseudomonas capsici</i>	Bacterial leaf spot of pepper, tomato & many other crops	Yes	Yes
<i>Pseudomonas cichorii</i>	Bacterial leaf spot of celery, lettuce, pepper, chrysanthemum & other crops	Yes	Yes
<i>Pseudomonas corrugata</i>	Tomato pith necrosis	Yes	Yes
<i>Pseudomonas savastanoi</i> pv. <i>glycinea</i>	Bacterial blight of soybean	Yes	Yes
<i>Pseudomonas savastanoi</i> pv. <i>phaseolicola</i>	Halo blight disease of <i>Phaseolus vulgaris</i> (common bean)	Yes, low sensitivity	Yes, low sensitivity
<i>Pseudomonas syringae</i> pv. <i>aptata</i>	Bacterial leaf spot disease of sugar beet	Yes, low sensitivity	Yes
<i>Pseudomonas syringae</i> pv. <i>atrofaciens</i>	Bacterial disease of cereal crops, basal glume rot of wheat	Yes, low sensitivity	Yes, low sensitivity
<i>Pseudomonas syringae</i> pv. <i>japonica</i>	Bacterial black node of barley and wheat, seedling blight and bacterial grain rot of rice	Yes	Yes
<i>Pseudomonas syringae</i> pv. <i>pisi</i>	Pea bacterial blight	Yes	Yes
<i>Pseudomonas syringae</i> pv. <i>syringae</i>	Infects many plant species: Blights, cankers, dieback of woody ornamentals, bacterial canker or	Yes	Yes



	blast of pome & stone fruits, brown spot disease of bean, etc.		
<i>Pseudomonas syringae</i> pv. <i>tomato</i>	Bacterial speck disease of tomato	Yes	Yes
<i>Pseudomonas syringae</i> pv. <i>aceris</i>	Infects maple trees	No	Yes
<i>Pseudomonas viridiflava</i>	Infects many plant species: bacterial leaf spot of lettuce, bacterial blight of pea & kiwifruit, necrosis of tomato, rot of cucumber, carrot and alfalfa, bacterial canker in prunus trees, etc.	Yes	Yes

ELISA and ImmunoStrip® Platforms

Both ELISA and ImmunoStrip® platforms utilize immunochemistry, and results are visualized via an antibody-antigen reaction in infected samples.

The **ELISA** platform has been used for more than 50 years and is widespread throughout the plant diagnostic community. This trusted, lab-based technology offers unparalleled cost efficiency in high-throughput applications.

The [Pseudomonas spp. ELISA kits](#) are sold in two formats. Reagent sets include capture and detection antibodies along with 96-well microtiter plates (buffers are sold separately). Pathoscreen® kits include pre-coated microtiter plates, detection antibody, buffers and positive controls.



Agdia's **ImmunoStrip**® platform provides end-users with unrivaled utility; samples can be tested in the field or lab by those having no previous diagnostic experience, and results are visualized within 30 minutes. This product includes everything necessary to perform a test and does not require special equipment. The testing protocol is simple and includes:

1. Sample collection and extraction in Agdia buffer bags.
2. Placing the ImmunoStrip® in the sample extraction bag.
3. Allowing results to develop.

Test results are visualized as a single control line or a control and test line for negative or positive results, respectively. The introduction of Agdia's ImmunoStrip® for *Pseudomonas* spp. expands their catalog to [57 plant pathogen products on this platform](#).

The [Pseudomonas spp. ImmunoStrip®](#) is sold in kits of 5 or 25 strips, and kits include everything necessary to perform a test.

Agdia provides a one-year warranty and comprehensive customer support on all purchased products.

About Agdia

A leading provider of diagnostic solutions for agriculture, Agdia, Inc. has been serving plant breeders, propagators, growers, universities, and private testing laboratories since 1981. The company offers a comprehensive portfolio of validated, easy-to-use diagnostics for identifying plant pathogens, hormones, and transgenic traits. In addition, Agdia operates an ISO accredited, in-house, testing services laboratory. Agdia's quality management system is ISO 9001:2015 certified and their Testing Services Laboratory is ISO/IEC 17025:2017 accredited by ANAB. Visit the company's website at www.agdia.com, e-mail info@agdia.com, phone 1-574-264-2615 (toll-free 800-622-4342) or fax 1-574-264-2153.

ImmunoStrip® is a registered trademark of Agdia, Inc.



Figure 3: Angular leaf spot of cucumber caused by *Pseudomonas syringae* pv. *lachrymans*. Image provided courtesy of Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org