Product Specification

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Technical Information

Phyto Boric Acid Peptone Agar Base

Product Code: PHM1001

Application: Selective medium for the detection of *Pseudomonas syringae* on seeds of beans and also for the detection of *Ps. porri*, *Ps. pisi* and *Ps. tomato* on seeds of resp. leek, pea and tomato.

Composition**

Ingredients	Grams/Litre
Proteose peptone	20.00
Di-potassium hydrogen phosphate	1.50
Boric acid	1.50
Magnesium sulphate, anhydrous	0.73
Agar	15.00
Total	**38.73 gm/liter**
Final pH (at 25°C)	7.2

**Formula adjusted standard to suit the performance parameter

Principle And Interpretation

The bacterium *Pseudomonas syringae pv. syringae* can cause diseases on several kinds of plants, but only a unique form of this bacterium is known to be the causative agent of bacterial brown spot. These bacteria can grow on the surface of some plants, including snap and dry beans, without causing disease. Bacteria that exist this way are called epiphytes. Bacterial brown spot on beans often occurs after large epiphytic populations of the bacteria develop. Since severe infection may not develop until after a major rainstorm, an absence of symptoms does not reveal the absence of the bacterium (1).

This medium is recommended for the selective medium for the detection of *Pseudomonas syringae* on seeds of beans and also for the detection of *Ps. porri*, *Ps. pisi* and *Ps.tomato* on seeds of resp. leek, pea and tomato. This medium is as per the formulation of KBC Medium It supported the good recovery of test organisms, while selectively inhibiting most of the saprophytic bacteria associated with bean seed. After three days of incubation at room temperature, the colonies of *Pseudomonas syringae pv. syringae* were 3-3.5 mm in diameter, flat circular, translucent and creamy white. Blue coloured fluorescence was observed under UV light (2).

Proteose peptone serves as a source of necessary nitrogen compounds, carbon, vitamins and some trace ingredients. Di-potassium phosphate buffers the medium while magnesium sulphate provides necessary cations for the activation of fluorescein production. The high selectivity for *Pseudomonas syringae pv. syringae* in the medium is primarily attributed to boric acid (3)

Directions

Suspend 38.73 grams in 1000 ml distilled water containing 30ml glycerol. Mix thoroughly and heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Aseptically add the rehydrated contents of one vial of CNC Supplement (PHS1001). Mix well and pour into sterile Petri plates.

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Quality Control

Appearance:
Cream to yellow coloured, homogeneous, free flowing powder.
Gelling:
Firm, comparable with 1.5% Agar gel.
Colour and Clarity of prepared medium:
Yellow coloured, opalescent gel with white precipitate forms in Petri plates
Reaction:
Reaction of 3.87% w/v aqueous solution (containing 3% glycerol) is pH 7.20 at 25°C.
Cultural Response:
Cultural characteristics observed after an incubation at 25-30°C for 5-6 days.

Organism (ATCC)	**Growth**
Pseudomonas syringae pv.syringae	good
Pseudomonas syringae pv.porri	good
Pseudomonas syringae pv.pisi	good
Pseudomonas syringae pv. tomato	good
Staphylococcus aureus (25923)	inhibited
Saccharomyces cerevisiae (9763)	inhibited

Storage and Shelf Life

Store below 30°C and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Further Reading

- Morris C.E., The life history of the plant pathogen *Pseudomonas syringae* is linked to the water cycle, The ISME Journal (2008) 2, 321–334.
- Mohan, S.K., and Schaad, N.W. 1987.An improved Agar Plating Assay for Detecting *Pseudomonas syringae pv. syringae* and *P.s. pv. phaseolicola* in Contaminated Bean Seed. Phytopathology 77:139-1395.
- Mohan, S.K., and Schaad, N.W. 1985.Semiselective agar media for isolation of *Pseudomonas syringae pv. syringae pathogenic to beans* (Abstr.) Phytopathology 75 :1351

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
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