

Technical Information

Phyto Cmm Agar Base

Product Code: PHM1005

Application: Semi-selective medium for the detection of *Clavibacter michiganensis* subsp *michiganensis* on seeds of tomato.

Composition**

Ingredients	Grams/Litre
Potassium dihydrogen phosphate	0.50
Di-potassium hydrogen phosphate	2.00
Magnesium sulphate anhydrous	0.122
Boric acid	1.50
Yeast extract	0.10
Sucrose	10.00
Agar	18.00
Total	32.23gm/liter
Final pH (at 25°C)	7.3

**Formula adjusted standard to suit the performance parameter

Principle And Interpretation

Bacterial canker is a serious and destructive disease caused by *Clavibacter michiganensis* subsp. *michiganensis* in tomatoes and is of major concern due to the great losses to the tomato growing countries (1) Symptomatic plants showed reddish brown cavities in the stem, discoloration, and water soaking of vascular tissue. Diseased tissues were washed with phosphate buffer and placed on semiselective *Clavibacter* medium (2), Yeast extract serves as a nitrogenous source. Boric acid helps in the selectivity of the medium. Phosphates in the medium help in buffering of the medium. Sucrose serves as a carbohydrate source.

Directions

Suspend 32.23 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize the medium by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50 °C and aseptically add the rehydrated contents of one vial of CNNP supplement (PHS1004). Mix well and pour into sterile Petri plates.

Quality Control

Appearance:

Light yellow coloured, homogeneous, free flowing powder.

Gelling:

Firm, comparable with 1.8% Agar gel.

Colour and Clarity of prepared medium:

Yellow coloured, opalescent gel forms in Petri plates

Reaction:

Reaction of 3.22% w/v aqueous solution is pH 7.3 at 25°C

Cultural Response:

Cultural characteristics observed with added CNNP supplement (PHS1004), after an incubation at 30-32°C for 5-6 days .

Organism (ATCC)	Growth	Colony Characteristics
<i>Clavibacter michiganensis</i> Subsp michiganensis	luxuriant	small, light to dark grey subsp michiganensis glistening , (often irregularly shaped)
<i>Escherichi coli</i> (25922)	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

- T. Stephens AND Dennis W. Fulbright, Bacterial Canker of tomato, MSU Ag Facts E1943 January 1986.
- C. Alarcon et al. Phytopathology 88:306, 1998.

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