Phyto Xano Camp Agar Base **PHM019**

Selective medium for the isolation of *Xanthomonas campestris pv campestris* and *Xanthomonas campestris pv. armoraciae* from crucifer seeds.

Composition**

Ingredients	**Grams/Litre**
Soya Peptone	2.00
Tryptone	2.00
Soluble Starch	25.00
Potassium dihydrogen phosphate	2.80
Diammonium hydrogen phosphate	0.80
Magnesium Sulphate anhydrous	0.1952
L-Glutamine	6.00
L- Histidine	1.00
Glucose monohydrate	1.00
Agar	18.00
Final pH (at 25°C)	6.5

**Formula adusted standard to suit the performance parameter

Direction :

Suspend 58.70 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121) for 15 minutes. Cool to 45-50 C and aseptically add the rehydrated content of one vial of NNB supplement (PHS015). Mix well and pour into Petri plate .

Note : Store plates for 4 days at 4 C to improve visibility of starch hydrolysis.

Principle and Interpretation :

Xanthomonas campestris pv.*campestris* and *Xanthomonas campestris pv. armoraciae*, the causal agent of black rot of crucifers, is a bacterial pathogen of significant economic importance. The disease occurs in many countries and regions. It produces a range of extracellular enzymes (including proteases, pectinases and cellulases) and extra cellular polysaccharide (EPS), which collectively play essential roles in pathogenesis (2).

The original medium was developed by Chang (1) for the isolation of *Xanthomonas campestris* which was then modified by lowering the pH of the medium using additional potassium dihydrogen phosphate.

Phyto Xano Camp Agar Base **PHM019**

The medium contains soluble starch which helps in the detection of starch hydrolyzing organisms. Starch is a reserve sugar for the plant, hence phyto pathogen utilizes starch from plant as a energy source. Bacteria which show a clear zone around the growth produce the exoenzyme amylase which cleaves the starch into di- and monosaccharides. Soya peptone and tryptone provide nitrogenous compounds, carbon, vitamin B complex and trace ingredients. The inorganic phosphates in the medium serve as buffers. Amino acids provide necessary growth factor for bacterial population. Glucose acts as a alternate carbon source for the organism.

Quality Control :

Appearance of Powder:

Cream to 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 5.88 % w/v aqueous solution is pH 6.5 ± 0.2 at 25°C.

Cultural Response:

Cultural characteristics observed, after an incubation at 25-30°C for 5-7 days

Organism (ATCC)	Growth	Colony Characteristics
Xanthomonas campestris pv campestris	luxuriant	Yellow, Mucoid colonies surrounded by a zone of starch hydrolysis
Xanthomonas campestris pv. armoraciae	luxuriant	Yellow, Mucoid colonies surrounded by a zone of starch hydrolysis
Escherichia coli	inhibited	-
Staphylococcus aureus	inhibited	-
Saccharomyces cerevisiae	inhibited	-

References:

1. Chang, C.J., Donaldson, R., Crowley, M, and Pinnow, D. 1991. A new semiselective medium for the isolation of *Xanthomonas campestris pv campestris.* Phytopathology 81: 449-453.
2. Dow, J. M., and Daniels, M. J. 1994. Pathogenicity determinants and global regulation of pathogenicity of *Xanthomonas campestris* pv. *campestris*. Pages 29-41 in: Current Topics in Microbiology and Immunology, Vol. 192: Bacterial Pathogenesis of Plants and Animals. J. L. Dangl, ed. Springer-Verlag, Berlin.

Storage and Shelf-life :

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