



PHM020

Phyto XcCar Agar Base

Semi Selective medium for the detection of *Xanthomonas campestris* pv. *carotae* in carrot

Composition **:

Ingradients	Grams/Litre
Sodium dihydrogen phosphate	0.900
Di-potassium hydrogen phosphate	3.00
Magnesium sulphate, anhydrous	0.15
Ammonium chloride	1.0
Agar	15
Final pH (at 25°C)	6.4

**Formula adjusted standard to suit the performance parameter

Direction.:

Suspend 20.05 grams in 900 ml distilled water. Dissolve 10.00 gms of D-cellobiose in 100ml of distilled water. Heat to boiling to dissolve the medium completely. Sterilize both the solutions separately by autoclaving at 15 lbs pressure(121°C) for 15 minutes .Cool to 45-50 °C

Principle and Interpretation

Bacterial leaf blight of carrot (*Daucus carota* subsp. *sativus*), caused by *Xanthomonas campestris* pv. *carotae*, is a common problem wherever carrots are grown (1). *X. campestris* pv. *carotae* needed to give rise to bacterial blight in sprinkler-irrigated carrots (2). Once established, this disease is difficult to manage. Yet, disease prevention also is difficult because *X campestris* pv. *carotae* is seedborne and hot water seed treatments may not entirely eradicate the pathogen. To monitor populations of *X. campestris* pv. *carotae* on plants, this media has developed.

This medium is formulated as per the formulation of MD5A by Cubeta and Kuan, 1986 (3). Phyto XcCar Agar Base is semi selective medium for the detection of *Xanthomonas campesris* pv. *carota* in carrot. Medium contains all inorganic components, out of which phosphates present in the medium serve as buffers. Ammonium chloride and magnesium sulphate are trace element, provides nutritional value to organisms.

Quality Control :

Appearance of Powder:

White to cream coloured, homogeneous, free flowing powder.

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

White to cream coloured, opalescent gel with precipitate forms in Petri plates.

PHM020**Phyto XcCar Agar Base****Reaction:**

Reaction of 2.01% w/v aqueous solution is pH 6.4 ± 0.2 at 25°C.

Cultural Response:

Cultural characteristics observed after an incubation at 25-30°C for 5-6 days.

Organism (ATCC)	Growth	Colour of the Colony
<i>Xanthomonas campestris</i> pv. <i>carota</i>	Luxuriant	Straw yellow, glistening, round, smooth, convex and 2-3mm in diameter.
<i>Escherichia coli</i> (25922)	Inhibited	-
<i>Staphylococcus aureus</i> (25923)	Inhibited	-
<i>Saccharomyces cerevisiae</i> (9763)	Inhibited	-

References:

- 1.Parks, R and Crowe, F. 1998. Sensitivity of *Xanthomonas campestris* pv. *carotae* to copper pesticides in central oregon carrot seed fields.
- 2.Umesh, K. C., R. M. Davis, and R. L. Gilbertson. 1998. Seed contamination thresholds for development of carrot bacterial blight caused by *Xanthomonas campestris* pv. *carotae*. Plant Dis. 82:1271-1275.
3. Cubeta , M.A. and Kuan , T.L., 1986 . Comparison of MD5 and XCS medium and development of MD5A medium for detecting *Xanthomonas campestris* pv. *carotae* in carrot seed Phytopathology 76:1109

Storage and Shelf-life :

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

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