Agri. Res. J. Kerala, 1980, 18 (2) 246—247

SUITABILITY OF DIFFERENT MEDIA FOR THE ESTIMATION OF *PSEUDOMONAS SOLANACEARUM* FROM SOIL."

Pseudomonas solanacearum E. F. Smith, the causal agent of bacterial wilt of solanaceous crops, survives in the soil for varying periods (Kelman, 1953). But information on the soil factors that influence survival of this pathogen are very meagre. This may be due to the lack of efficient methods of isolation of the bacterium from soil particularly at low population levels (Karganilla and Buddenhagen, 1972). An attempt was made to test the suitability of the different media for isolation and estimation of *P. solanacearum* from artificially infected soil

The different types of media tried were the modified Karganilla and Buddenhagen's selective medium, (KBS medium) (Karganilla and Buddenhagen, 1972), containing only four antimicrobiai agents, viz., chloromycetin (5 mg/ ml), penicillin (1 mg/ml), actidione (50 mg/ ml) and captan (10 mg/ ml), Peptone dextrose crystal violet agar (PDCV agar) (Okabe, 1969) and soil extract agar (SE agar) (Lochhead and Thaxton, 1952) containing 0.1 per cent glucose. A suspension of 48 hrs old culture of P. *solanacearum* in sterile distilled water containing 1.6×10^6 cells/ml was prepared. Two ml aliquots of this suspension was added to 2 g of sterile soil in test tube and mixed well. The mixture was then transferred aseptically to 196 ml of sterile distilled water and agitated thoroughly. One ml aliquot of this was added to 99 ml of sterile distilled water and after thorough mixing, one ml was added to 15 ml each of the different media, mixed well and poured into petridishes. Four replicates were maintained for each medium. The plates were incubated for 10 days at laboratory temperature ($30 + 1^0$C) and bacterial counts were recorded.

To find out the best source of carbon, the modified KBS medium devoid of antimicrobial agents, was used as the basal medium and ten different carbohydrates were added separately as substitutes to mannitol, maintaining the quantity of carbon uniform in all cases. The medium was sterilized by steaming for 30 minutes each on three successive days. The pH of the medium was adjusted to 6.8 to 7.0. Forty eight hour oldculture of *P. solanacearum* isolated from tomato was streaked on the different media and incubated for 48 hrs at the laboratory temperature. Growth of the culture was graded on a 0–3 scale, as good (3), moderate (2), poor (1) and no growth (0). The efficiency of the media was compared statistically. Of the three media, the modified KBS medium was found to yield maximum recovery of the bacterium (41.31%) followed by PDCVagar (11.7%) and SE agar (3.6%) in that order. Colonies on KBS medium were small, discrete, non-fluidal and pink incolour. On PDCV agar, the colonieswere bigger, mostly fluidal and flowing freely with slight disturbance. On SE agar the colonies were rather small and non–fluidal.

Observations on thesuitability of the different carbon sources in modified KBS medium for the isolation of *P. solanacearum* from soil is given in Table 1.

* Part of the Ph. D. thesis approved by the Kerala Agrl. University

Mannitol, sucrose and glucose were found to be better sources of carbon for the growth of the bacterium. Thus KBS medium with the original carbon source mannitol appears to be the best medium for isolation of *P. solanacearum* from soil.

Tabie 1

Effect of different carbon sources on the growth of *P. solanacearum*

Carbon source	Index of growth
Mannitol	2.75
Sorbitol	1.00
Inositol	0.50
Glucose	2.00
Fructose	1,50
Galactose	1.25
Mannose	1.50
Sucrose	2.50
Lactose	1.25
Xylose	0.75
Maltose	1.25

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College of Agriculture,
Vellayani 695 522, Kerala.

L. REMA DEVI
M. RAMANATHA MENON

(MS Received: 20-2-1980)