

## Dextrose Tryptone HiVeg™ Agar / Broth, MV092/MV122/MV913/MV914 Dextrose Tryptone HiVeg™ Agar, Modified / Broth, Modified

Dextrose Tryptone HiVeg Agar / Broth media are recommended for the detection and enumeration of mesophilic and thermophilic aerobic microorganisms in foods.

### Composition \*\*:

Ingredients	MV092	MV122	MV913	MV914
	Grams/Litre	Grams/Litre	Grams/Litre	Grams/Litre
HiVeg hydrolysate	10.00	1000	10.00	10.00
Dextrose	5.00	5.00	5.00	5.00
Dipotassium phosphate	—	—	1.25	1.25
Yeast extract	—	—	1.00	1.00
Bromo cresol purple	0.04	0.04	0.04	0.04
Agar	15.00	—	15.00	—

Final pH (at 25°C) 6.7 ± 0.2

\*\* Formula adjusted, standardized to suit performance parameters

### Directions :

Suspend 30 grams of MV092 or 15 grams of MV122 or 32.3 grams of MV913 or 17.3 grams of MV914 in 1000 ml distilled water. Heat to boiling the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle and Interpretation :

Dextrose Tryptone HiVeg Media are prepared by using HiVeg hydrolysate in place of Casein enzymic hydrolysate which makes the media free of BSE/TSE risks. Dextrose Tryptone HiVeg Agar is the modification of the medium evolved by Williams (1) for cultivation and enumeration of the thermophilic bacteria. Its use for routine culture purpose is recommended by Cameron (2) and the Association of Official Agricultural Chemists (3). Dextrose Tryptone HiVeg Agar / Broth, Modified (MV913 / MV914) are more nutritious and well buffered than Dextrose Tryptone HiVeg Agar / Broth (MV092 / MV122) due to inclusion of yeast extract and dipotassium phosphate. Dextrose Tryptone HiVeg Agar/ Broth, Modified is used for the examination of canned food, sugar and starch for thermophilic bacteria such as *Bacillus stearothermophilus* ('flat sour' spoilage bacteria) (4) and also for plate count of mesophilic or thermophilic aerobes in sweetening agents used in frozen desserts (5) and for counts of aerobic microorganisms in liquid sugar. HiVeg hydrolysate provides nutrients to the organisms. Dextrose serves as an energy source while bromo cresol purple is a pH indicator. Acid producing organisms produce yellow coloured colony. The plates / tubes should be incubated at 55°C for 48 hours in a humid incubator. These media are useful for enumeration of mesophilic organisms, thermophiles in cereals and cereal products, dehydrated fruits vegetables and spices (6)

### Quality Control :

#### Appearance of Powder

Yellow coloured, may have slightly greenish tinge, homogeneous, free flowing powder.

#### Gelling

Firm, comparable with 1.5% Agar gel of MV092 and MV913.

### Product Profile :

Vegetable based (Code MV)Ⓞ		Animal based (Code M)
MV092/MV122/MV913/MV914 HiVeg hydrolysate		M092/M122/M913/M914 Casein enzymic hydrolysate
Recommended for	:	Detection and enumeration of mesophilic and thermophilic aerobic microorganisms in foods.
Reconstitution	:	(MV092) : 30.0 g/l
	:	(MV122) : 15.0 g/l
	:	(MV913) : 32.3 g/l
	:	(MV914) : 17.3 g/l
Quantity on preparation (500g):	(MV092) :	16.66 L
	(500g):	(MV122) : 33.33 L
	(500g):	(MV913) : 15.47 L
	(500g):	(MV914) : 28.90 L
pH (25°C)	:	6.7 ± 0.2
Supplement	:	None
Sterilization	:	121°C / 15 minutes.
Storage	:	Dry Medium - Below 30°C, Prepared Medium 2 - 8°C.

### Colour and Clarity

Purple coloured, slightly opalescent gel forms in petri plates, clear solution in tubes.

### Reaction

Reaction of 3.0 w/v of MV092 or 1.5% w/v of MV122 or 3.23% w/v of MV913 or 1.73% w/v of MV914 aqueous solution is pH 6.7 ± 0.2 at 25°C.

### Cultural Response

Cultural characteristics observed after an incubation at 55°C for 48 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony on the Agar Media
<i>Bacillus coagulans</i> (8038)	10 <sup>2</sup> -10 <sup>3</sup>	good-luxuriant	>70%	yellow
<i>Bacillus stearothermophilus</i> (7953)	10 <sup>2</sup> -10 <sup>3</sup>	good-luxuriant	>70%	yellow
<i>Bacillus brevis</i> (8246)	10 <sup>2</sup> -10 <sup>3</sup>	good-luxuriant*	>70%	yellow

Key : \* = with or without dextrose fermentation

### References :

- Williams O.B., 1936, Food Res., 1:217.
- Cameron E.J., 1936, J.Assoc. Official Agr. Chem., 19:433.
- Association of Official Agriculture Chemists, 1945, Official and Tentive Methods of Analysis, Washington.
- Tanner F.W., 1944., The Microbiology of Foods, 2<sup>nd</sup> ed., Garrard Press, Champaers, P.762 and 1127.
- Standard Methods for the Examination of Dairy Products. 17<sup>th</sup> Edition, 2004 Edited by H. Michael Wehr and Joseph H.Frank.
- Downes FP and Ito K (Eds.), 2001, Compendium of Methods For The Microbiological Examination of Foods, 4<sup>th</sup> ed., APHA, Washington, D.C.