Rye Agar B

M1855

Rye Agar B is used for sporulation of *Phytophthora infestans* .

Composition**

Ingredients	Gms / Litre
Rye	60.000
Sucrose	20.000
Beta-sitosterol	0.050
Agar	15.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 95.05 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Mix well before pouring.

Principle And Interpretation

Phytophthora infestans is an oomycete that causes the serious potato disease known as late blight or potato blight. The organism can also infect tomatoes and some other members of the Solanaceae (1). *Phytophthora infestans* produces microscopic, asexual spores called sporangia. When the environment is highly conducive for disease, sporangia are airborne and spread for miles. The fungus will also survive in infected tubers that remain in soil from the previous season. Seed pieces can also be infected and harbor the pathogen (2,3,4).

Rye Agar A is suggested for the isolation of *Phytophthora infestans* . The appearance is flat, waxy when grown on agar medium. A study conducted to compare media for mycelial growth, sporangia, oospore production by isolation of *Phytophthora infestans* showed better growth on Rye Agar and V8 Juice Agar as compared to other media (5). Rye is a cereal grain which supplies manganese, tryptophan, phosphorous and magnesium to the pathogen. Sucrose is the carbohydrate source. Beta sitosterol helps in sporulation.

The optimum temperature for the growth of *Phytophthora infestans* was 18 to 24ºC and are able to growth between 10 to 25ºC (6).

Quality Control

Appearance

Light yellow to light brown hygroscopic soft lumps which can be easily broken down to powder

Gelling

Firm, comparable with 1.5% Agar gel.

Colour and Clarity of prepared medium

Medium amber coloured opague gel forms in Petri plates

Cultural Response

M1855: Cultural characteristics observed after an incubation at 18-24°C for 2 weeks in dark.

Organism	Inoculum (CFU)	Growth
Phytophthora infestans	50-100	good

Storage and Shelf Life

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

Reference

1.Nowicki, Marcin et al. (17 August 2011), Potato and tomato late blight caused by Phytophthora infestans: An overview of pathology and resistance breeding, Plant Disease, ASP, doi:10.1094/PDIS-05-11-0458.
2.Agrios, G. N. 1988. Plant Pathology. APS Press. St. Paul, Minnesota.
3.Alexopoulos, C. J., C. W. Mims, and M. Blackwell. 1996. Introductory Mycology. John Wiley & Sons, Inc. New York, USA.
4.Hooker, W. J. 1986. Editor. Compendium of Potato Diseases. American Phytopathological Society Press. St. Paul, Minnesota.
5.Marco V. Medina & H.W.(Bud) Platt, American Journal of Potato Research, Vol. 76, Number 3, 121-125, Comparison of different culture media on the mycelial growth, sporangia and oospore production of Phytophthora infestans.
6.Ann et al, 1998, Bot. Bull. Acad.Sin, 39; 33-37 Mating type and pathogenicity of Phytophthora infestans in Taiwan.

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