

Technical Information

Rye Agar B

Product Code: DM 2855

Application: - Rye Agar B is recommended 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

Principle & Interpretation

Rye Agar B is suggested for the isolation of *Phytophthora infestans*. *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).

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 acts as carbohydrate source. Beta sitosterol helps in sporulation.

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

Methodology

Suspend 95.05 grams of dehydrated powder media in 1000 ml distilled water. Mix thoroughly & heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 20 minutes. Shake well & before pour into sterile petri plates.

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

Medium amber coloured opaque gel forms in Petri plates.

Cultural Response

DM2855: Cultural characteristics observed after an incubation at 18-24°C for 2 weeks in dark.

Organism	Inoculum (CFU)	Growth
<i>Phytophthora infestans</i>	50-100	good



Dehydrated Culture Media
Bases / Media Supplements

Storage and Shelf Life

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

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

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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