



Trichoderma harzianum Selective Agar Base

M1836

Trichoderma harzianum Selective Agar Base is recommended for selective isolation of *Trichoderma harzianum*.

Composition**

Ingredients	Gms / Litre
Magnesium sulphate heptahydrate	0.200
Dipotassium hydrogen phosphate	0.900
Ammonium nitrate	1.000
Potassium chloride	0.150
Glucose	3.000
Rose Bengal	0.150
Agar	20.000

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 25.54 grams (the equivalent weight of dehydrated medium per litre) in 960 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add the rehydrated contents of one vial of Trichoderma harzianum Selective Supplement (FD276).

Principle And Interpretation

Trichoderma harzianum is an efficient biocontrol agent that is commercially produced to prevent development of several soil pathogenic fungi. Different mechanisms have been suggested as being responsible for their biocontrol activity, which include competition for space and nutrients, secretion of chitinolytic enzymes, mycoparasitism and production of inhibitory compounds. (1,2). Nevertheless, the biocontrol activity of *T. harzianum* could be affected by environmental cues, that include among others, the presence of plant nutrients at the field level (1). Also, the isolates of *Trichoderma harzianum* attack the commercial mushroom *Agaricus bisporus* colonize spawned compost and result in substantial yield reduction. This medium was based on the formulation of *T. harzianum* selective medium (THSM) (3). Glucose in the medium serve as a source of energy as well as carbohydrate source and Dipotassium hydrogen phosphate buffers the medium. Magnesium phosphate act as a source of ions and sulphates. Ammonium nitrate provides source of nitrogen. Chloramphenicol suppresses the growth of accompanying bacteria. Rose Bengal is a selective agent that inhibits bacterial growth and restricts the size and height of colonies of more rapidly growing moulds. Care should be taken not to expose this medium to light, since photodegradation of Rose Bengal yields compound that are toxic to fungi.

Quality Control

Appearance

Light yellow to pink homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel

Colour and Clarity of prepared medium

Light pink coloured clear to slightly opalescent gel forms in Petri plates.

Cultural Response

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

Cultural Response

Organism	Growth
<i>Trichoderma harzianum</i>	luxuriant
<i>Escherichia coli</i> ATCC 25922	inhibited

Staphylococcus aureus inhibited
ATCC 25923

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. Angela Roco., (2001), In vitro biocontrol activity of *Trichoderma harzianum* on *Alternaria alternata* in the presence of growth regulators. *Plant Pathology*. 4 :2
2. Haram, S.; Schickler, H.; Oppenheim, A. and Chet, I. (1996). Differential expression of *Trichoderma harzianum* chitinases during mycoparasitism. *Phytopathology* 86:980-985.
3. Williams, J., Clarkson, J.M., Mills, P.R., and Cooper, R.M. (2003) A Selective Medium for Quantitative Reisolation of *Trichoderma harzianum* from *Agaricus bisporus* Compost

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