

TM 1060 – ORCHID AGAR (Plant Tissue Culture Media)

INTENDED USE

For germination of orchid seeds.

PRODUCT SUMMARY AND EXPLANATION

Orchids exhibit flowers of exquisite beauty and variety of patterns and belong to one of the largest family, the *Orchidaceae*. Orchids are the first floricultural crop successfully mass propagated through tissue culture technique. Orchids may be propagated either sexually or asexually. Vegetative propagation is common practice for many of the commercial orchids. Germination of seeds can be symbiotic or asymbiotic. Symbiotic seed germination is done under natural conditions, the orchid seeds germinate after being infected by fungus and mycorrhiza. Orchid seeds have only minute reserves of food and the symbiotic organisms provide the required nutrients. Lewis Knudson in 1916 formulated a medium in which orchid seed were germinated successfully without fungal infection. Asymbiotic germination is done by aseptic inoculation of seeds on medium.

COMPOSITION

Ingredients	Gms / Ltr
Calcium nitrate	1.000
Monopotassium dihydrogen phosphate	0.250
Magnesium sulphate	0.250
Ammonium sulphate	0.500
Ferrous sulphate	0.025
Manganese sulphate	0.0075
Saccharose	20.000
Agar	15.000

PRINCIPLE

Orchid Agar was developed by Knudson for the germination of orchid seeds. In his research he found the importance of the presence of minor elements like copper, manganese and zinc for the growth of orchid seeds. The medium also consists of iron, which is three times more the concentration of manganese. Somers and Shive reported that double or triple the amount of iron, then manganese, in the medium is optimum for orchid seed germination. Ammonium and magnesium sulphate in the medium helps in germination of the orchid seeds. Saccharose (sucrose) is the carbohydrate source in the medium while monopotassium phosphate helps in maintaining the acidic pH of the medium by its buffering action.

INSTRUCTION FOR USE

- Dissolve 37.25 grams in 1000 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder	: White to cream homogeneous free flowing powder.
Appearance of prepared medium	: Light yellow coloured opalescent gel forms in Petri plates that may contain a slight precipitate.
pH (at 25°C)	: 5.0 ± 0.2

INTERPRETATION

Satisfactory germination of orchid seeds was observed within a month.

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.










Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Knudson L., 1922, Bot. Gaz., 73:1.
2. Knudson L., 1943, Amer. Orchid. Soc. Bull., 12:77.
3. Somers I. I. and Shive J. W., 1942, Plant Physiol., 17:582.
4. Knudson L., 1916, Cornell Univ. Agric. Exper. Sta. Merm 9:1.

 GMP Good Manufacturing Practices Certified	 Best Before	 QTY. Quantity	 REF Catalogue Number	 Manufacturer
 Temperature Unit	 LOT/ B. NO. Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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