

Orchid Maintenance/ Replate Medium

With Calcium Chloride, Vitamins, Sucrose, Banana powder, HiVeg™ peptone, MES, Activated Charcoal and CleriGel™

Product Code : PT074G

Product Description

Orchid Maintenance Medium has been formulated for the effective maintenance of the orchid species.

Orchid Maintenance Medium is a nutrient blend of inorganic salts, vitamins, carbohydrate and gelling agent. In addition, it is supplemented with MES buffer which maintains optimum buffering and prevents acidification in the media required for the cultivation of orchids. HiVeg™ peptone is added as an additional source of reduced organic nitrogen. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc enhance the metabolism in the plants. Boron plays a key role in the carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle and in primary and secondary metabolism in the plants.

CleriGel™, a gellan gum is used as an alternative to agar. It offers several advantages over conventional agar as it sets a clear gel which assists easy observation of cultures and their possible contamination. Unlike agar, gel strength of CleriGel™ is unaffected over a wide range of pH and contains no contaminants like phenolic compounds that can be toxic to plant tissues. It solidifies uniformly and rapidly.

The product is plant tissue culture tested but it is the sole responsibility of the user to ensure the suitability of the medium for individual species.

Composition :

| Ingredients | mg/L |
|-------------------------------|---------|
| MACROELEMENTS | |
| Ammonium nitrate | 825.000 |
| Calcium chloride | 166.100 |
| Magnesium sulphate | 90.340 |
| Potassium nitrate | 950.000 |
| Potassium phosphate monobasic | 85.000 |

MICROELEMENTS

| | |
|--------------------------------|--------|
| Boric acid | 3.100 |
| Cobalt chloride hexahydrate | 0.013 |
| Copper sulphate pentahydrate | 0.013 |
| EDTA disodium salt dihydrate | 37.300 |
| Ferrous sulphate heptahydrate | 27.800 |
| Manganese sulphate monohydrate | 8.450 |
| Molybdcic acid (sodium salt) | 0.106 |
| Potassium Iodide | 0.420 |
| Zinc sulphate heptahydrate | 5.300 |

VITAMINS

| | |
|----------------------------|---------|
| myo-Inositol | 100.000 |
| Nicotinic acid (free acid) | 1.000 |
| Pyridoxine HCl | 1.000 |
| Thiamine hydrochloride | 10.000 |

CARBOHYDRATE

| | |
|---------|-----------|
| Sucrose | 20000.000 |
|---------|-----------|

GELLING AGENT

| | |
|-----------|----------|
| CleriGel™ | 3000.000 |
|-----------|----------|

OTHERS

| | |
|-------------------------|-------------|
| Activated charcoal | 2000.000 |
| Banana Powder | 30000.000 |
| HiVeg™Peptone | 2000.000 |
| MES | 1000.000 |
| Total(gms/litre) | 60.3 |

Material required but not provided :

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl

Precautions :

- Ensure appropriate pH of the medium before addition of gelling agent as acidic pH will lead to decreased gelation resulting in semi solid flowing gel while alkaline pH will lead to formation of hardened gel.

- Use of Distilled water / Tissue culture grade water is recommended for media preparation as tap water or lower grade water may lead to salt precipitation and improper gelation.
- Avoid preparation of concentrated solutions, as it will lead to precipitation of salts.

Directions :

- Reconstitute medium by adding required quantity of powder in two-third of total volume with constant, gentle stirring till the medium gets completely dissolved.
- Add heat stable supplements prior to autoclaving.
- Make up the final volume with distilled water.
- Adjust the pH of the medium to 5.75 ± 0.5 using 1N NaOH/HCl.
- Heat the medium to boiling till complete dissolution of gelling agent.
- Sterilize the medium by autoclaving at 15 lbs and 121°C for 15 min.
- Cool the autoclaved medium to about 45°C before adding heat labile supplements.
- Aseptically dispense the desired amount of medium under a laminar airflow unit in sterile culture vessels.

Quality Control:

Appearance

Grey to black, homogenous, free flowing powder

Solubility

60.3 gms/litre soluble after boiling in distilled water

Colour and Clarity

Grey to black solution, opaque gel is formed on cooling

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25°C

3.70 - 4.70

Plant Tissue Culture Test

The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about $60\% \pm 2\%$, temperature $22^\circ\text{C} \pm 2^\circ\text{C}$ and photoperiod of about 16:8. The plant species showed actively growing callus and shoots with no structural, necrotic and toxic deformity.

Storage and Shelf Life:

- The plant tissue culture medium powder is extremely hygroscopic and must be stored at 2-8°C in air tight containers.
- Preferably, entire content of each package should be used immediately after opening.
- Use before the expiry date.

Revision : 01 / 2017

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.