

Orchid Maintenance Medium

With Calcium Chloride, Vitamins, Sucrose, HiVeg™ peptone, MES, Activated charcoal and CleriGel™

Product Code: PT072G

Product Description :

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

It is a nutrient blend of inorganic salts, vitamins carbohydrate and gelling agent. In addition, it contains MES buffer which maintains optimum buffering in the media and prevents acidification, required for the cultivation of orchids. HiVeg™ peptone is added as a source of reduced organic nitrogen. Microelements like Boron, Molybdenum, Copper, Iron and Zinc enhances metabolism in plants. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with the primary and secondary metabolism in the plants. Activated charcoal adsorbs inhibitory leachouts from the medium.

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
Molybdc 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
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GELLING AGENT

CleriGel™	3000.000
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OTHERS

Activated charcoal	2000.000
HiVeg™Peptone	2000.000
MES	1000.000
Total(gms/litre)	30.3

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 coloured, homogenous, free flowing powder

Solubility

30.3 gms/litre soluble after boiling in distilled water

Colour and Clarity

Grey to black coloured solution, opaque gel is formed on cooling.

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25°C

4.50 - 5.50

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 :

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