PRODUCT INFORMATION

Dendrobium (Orchid) Seed Germination Medium

With Vitamins, Sucrose and Agar

Product Code: PT152

Product Description :

Dendrobium Seed Germination Medium has been specially formulated for the *in vitro* germination of the dendrobium orchid species.

The formulation is a nutrient blend of inorganic salts, vitamins, amino acid, carbohydrate and gelling agent. Potassium nitrate and ammonium nitrate serve as source of nitrogen which is ideal for the efficient germination and seedling development. Magnesium sulphate stimulates protocorm like bodies formation. Microelements like Manganese, Molybdenum, Copper, Iron and Zinc enhance metabolism in the plants. Boron plays a key role in carbohydrate metabolism. Thiamine, pyridoxine, nicotinic acid act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Glycine serves as source of organic nitrogen.

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	90.344
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	18.650
Ferrous sulphate heptahydrate	13.900
Manganese sulphate monohydrate	8.450
Molybdic acid (sodium salt)	0.106
Potassium Iodide	0.415
Zinc sulphate heptahydrate	4.300
VITAMINS	
myo-Inositol	50.000
Nicotinic acid (free acid)	0.250
Pyridoxine HCl	0.250
Thiamine hydrochloride	0.050
AMINO ACID	
Glycine	1.000
CARBOHYDRATE	
Sucrose	20000.000
GELLING AGENT	
Agar	7000.000
Total(gms/litre)	29.2

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
White to off-white, homogenous, free flowing powder

Solubility
29.2 gms/litre soluble after boiling in distilled water

Colour and Clarity
Colourless to light yellow solution, hazy gel is formed on cooling

Gelling
Firm gel formed at pH: 5.75 ± 0.5

pH at 25ºC
4.90 - 5.90

Plant Tissue Culture Test
The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about 60%±2%, temperature 22ºC±2ºC 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.

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