Product Specification

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Technical Information

Anderson Rhododendron Medium

With Calcium Chloride, Vitamins, Sucrose, Adenine Sulphate And CleriGel

Product Code: PT1019G

Application: Anderson Rhododendron medium contains nutrients as described by Anderson 1984. It is a low inorganic nutrient composition and is used for conventional micropropagation of *Rhododendron* and other plants of family *Ericaceae*.

Anderson Rhododendron Medium is a nutrient blend of inorganic salts, vitamins, amino acid, carbohydrate, plant growth regulator and gelling agent. Potassium nitrate and ammonium nitrate serve as sources of nitrate and stimulates morphogenesis. Magnesium along with sulphur acts as precursor in many vital metabolic processes and sodium dihydrogen phosphate provides phosphate. Microelements like Boron, Manganese, Molybdenum, Copper, Cobalt, Iron and Zinc enhance metabolism in plants. Boron plays a key role in carbohydrate metabolism. Vitamins like thiamine and inositol act as enzymatic cofactors in the universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Adenine sulphate stimulates axillary bud growth and promotes shooting.

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/Litre
MACROELEMENTS	
Ammonium nitrate	400.000
Calcium chloride	332.200
Magnesium sulphate	180.690
Potassium nitrate	480.000
Sodium phosphate monobasic	330.390
MICROELEMENTS	
Boric acid	6.200
Cobalt chloride hexahydrate	0.025
Copper sulphate pentahydrate	0.025
EDTA disodium salt dihydrate	74.500
Ferrous sulphate heptahydrate	55.700
Manganese sulphate monohydrate	16.900
Molybdic acid (sodium salt)	0.213
Potassium Iodide	0.300
Zinc sulphate heptahydrate	8.600
VITAMINS	
myo-Inositol	100.000
Thiamine hydrochloride	0.400
CARBOHYDRATE	
Sucrose	30000.000
GELLING AGENT	
CleriGel	3000.000
OTHERS	
Adenine sulphate	80.000
Total(gms/litre)	35.1

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Material required but not provided

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

Quality Control

Appearance

White to off-white, homogenous, free flowing powder

Solubility

35.1 gms/litre soluble after boiling in distilled water

Colour and Clarity

Colourless to light yellow solution, clear gel is formed on cooling

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25ºC

3.50 - 4.50

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.

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.
- Add gelling agent and heat the medium to boiling till complete dissolution of gelling agent.
- Sterilize the medium by autoclaving at 15 lbs and 121°Cfor 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

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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Disclaimer

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate.
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