

### Technical Information

#### Stag Horn Fern Rooting Medium With Vitamins, Sucrose and Agar

#### Product Code: PT1120

**Application:** Stag Horn Fern Rooting Medium has been developed on the basis of Murashige and Skoog medium for inducing *in vitro* rooting of Fern. Stag horn fern belongs to *Platyserium* genus, family *Polypodiaceae*. The formulation is a nutrient blend of inorganic salts, vitamins, carbohydrate and gelling agent.

Stag Horn Fern Rooting Medium provides all the essential macroelements and microelements. Potassium nitrate and ammonium nitrate serve as sources of nitrogen that promotes morphogenesis. This mixture of cation and anion also maintains pH of the medium. Potassium dihydrogen phosphate serves as a source of phosphate. Microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc play vital role in plant metabolism. Boron plays a key role in carbohydrate metabolism. Vitamins like thiamine, nicotinic acid, pyridoxine and inositol act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants.

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
<b>MACROELEMENTS</b>	
Ammonium nitrate	1650.000
Calcium chloride dihydrate	332.200
Magnesium sulphate anhydrous	180.689
Potassium dihydrogen phosphate	170.000
Potassium nitrate	1900.000
<b>MICROELEMENTS</b>	
Boric acid	6.200
Cobalt chloride hexahydrate	0.025
Copper sulphate pentahydrate	0.025
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	16.897
Potassium Iodide	0.830
Sodium dihydrogen phosphate anhydrous	147.806
Sodium molybdate anhydrous	0.213
Zinc sulphate heptahydrate	8.600
<b>VITAMINS</b>	
myo-Inositol	100.000
Nicotinic acid	1.000
Pyridoxine hydrochloride	1.000
Thiamine hydrochloride	0.400
<b>CARBOHYDRATE</b>	
Sucrose	30000.000
<b>GELLING AGENT</b>	
Agar	8000.000
<b>TOTAL</b>	<b>42.6 ms/litre</b>

### 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

42.6 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 25°C

3.90-4.90

#### Plant Tissue Culture Test

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

### 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

### 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.

### 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.

### 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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