Product Specification

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Technical Information

Ichihashi New Phalaenopsis (NP) Medium

With NH_4NO_3, Vitamins, Sucrose

Without Agar

Product Code: PT1065

Application: Ichihashi New Phalaenopsis (NP) Medium consists of components as described by Ichihashi in 1992 for effective *in vitro* stem propagation of the Phalaenopsis species.

The formulation is a nutrient blend of inorganic salts, vitamins, amino acid and carbohydrate. Potassium nitrate and ammonium nitrate serve as sources of nitrogen. Calcium helps in cell wall synthesis while microelements like Boron, Manganese, Molybdenum, Copper, Iron and Zinc enhance 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 along with primary and secondary metabolism in the plants. Glycine serves as a source of amino acid.

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	82.000
Ammonium sulphate	304.000
Calcium nitrate	443.040
Magnesium nitrate hexahydrate	256.400
Potassium nitrate	424.000
Potassium phosphate monobasic	462.700
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	11.200
Molybdic acid (sodium salt)	0.125
Potassium Iodide	0.420
Zinc sulphate heptahydrate	4.300
VITAMINS	
myo-Inositol	100.000
Nicotinic acid (free acid)	0.500
Pyridoxine HCl	0.500
Thiamine hydrochloride	0.100
AMINO ACID	
Glycine	2.000
CARBOHYDRATE	
Sucrose	20000.000
Total(gms/litre)	22.2

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Material required but not provided

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Gelling agents like Agar (PCT1901) or CleriGel (PCT1903)

Quality Control

Appearance
White to off-white, homogenous, free flowing powder
Solubility
22.2 gms/litre soluble in distilled water
Colour and Clarity
Colourless to light yellow, clear solution
pH at 25ºC
3.30 - 4.30
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.

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.

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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