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Product Specification

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Technical Information

Banana Rooting Medium

With Vitamins, Plant growth regulators, Sucrose, Activated charcoal and Agar

Product Code: PT1158

Application: Banana Rooting Medium has been developed for the *in vitro* rooting of *Musa* species, family *Musaceae*. It is based on the Murashige and Skoog media composition with certain alterations aiding towards the suitability of species. The formulation is a nutrient blend of inorganic salts, vitamins, carbohydrate, amino acids, plant growth regulators and gelling agent.

Banana Rooting Medium provides all the essential macroelements and microelements. Potassium nitrate and ammonium nitrate serve as sources of nitrate and helps in or ganogenesis. This mixture of cation and anion is responsible for maintaining pH of the media. Potassium dihydrogen phosphate serves as source of phosphate. Microelements like Boron, Manganese, Molybdenum, Iron, Copper, and Zinc enhance metabolism in the plants Thiamine, inositol, pyridoxine, nicotionic acid act asenzymatic cofactors in universal pathways including glycolysis and TCA cycle along with primary and secondary metabolism in the plants. Activated charcoal adsorbs polyphenolic exudates released from tissues in the medium. 6-BAP aids in shoot proliferation while NAA induces effective rooting. Glycine and glutamine serves as 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	825.000
Calcium chloride	166.100
Magnesium sulphate	90.350
Potasssium 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	13.920
Manganese sulphate monohydrate	8.450
Molybdic acid (sodium salt)	0.125
Potassium Iodide	0.415
Zinc sulphate heptahydrate	4.300
VITAMINS	
myo-Inositol	50.000
Nicotinic acid (free acid)	0.250
Pyridoxine hydrochloride	0.250
Thiamine hydrochloride	0.050
AMINO ACID	
Glycine	1.000
L-Glutamine	25.000
CARBOHYDRATE	
Sucrose	20000.000
GELLING AGENT	
Agar	7000.000
OTHERS	
6-Benzylaminopurine	1.500
Activated charcoal	750.000
Napthalene acetic acid	0.070
TOTAL	**30.0ms/litre**

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Material required but not provided

- Autoclaved distilled water
- 1N NaOH/HCl

Quality Control

Appearance

Grey to black, homogenous, free flowing powder

Solubility

30 gms/litre soluble after boiling in distilled water

Colour and Clarity

Grey to black solution, opaque gel is formed on cooling

Gelling

Firm gel formed at pH: 5.75 ± 0.5

pH at 25ºC

4.70-5.70

Gelling

Firm gel formed at pH: 5.75 ± 0.5

Plant Tissue Culture Test

The growth promoting properties of medium is assessedby 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.
- 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.

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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.
- **Central Drug House Pvt. Ltd.** reserves the right to make changes to specifications and information related to the products at any time.
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