Plantigen™ HIMEDIA

PRODUCT INFORMATION

Banana Multiplication Medium

With Vitamins, Sucrose and Agar
Without NH_4NO_3 and Casein hydrolysate

Product Code: PT078

Product Description :

Banana Multiplication Medium has been developed for the *in vitro* multiplication of *Musa* species, family *Musaceae*. It is based on the Murashige and Skoog medium composition with certain alterations aiding towards suitability for *Musa* species. The formulation is a nutrient blend of inorganic salts, vitamins, amino acid, carbohydrate and gelling agent.

Banana Multiplication Medium provides all the essential macroelements and microelements. Potassium nitrate serves as a source of nitrate and helps in the organogenesis. This mixture of cation and anion is responsible for maintaining pH of media. Potassium dihydrogen phosphate serves as a source of phosphate. Microelements like Boron, Manganese, Molybdenum, Iron, Copper, and Zinc enhance metabolism in the plants. Nicotinic acid thiamine, pyridoxine and inositol act as enzymatic cofactors in universal pathways including glycolysis and TCA cycle along with the primary and secondary metabolism in 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/L
MACROELEMENTS	
Calcium chloride	166.450
Magnesium sulphate	120.330
Potassium nitrate	2020.000
Potassium phosphate monobasic	44.000
MICROELEMENTS	
Boric acid	1.240
Cobalt chloride hexahydrate	0.240
Copper sulphate pentahydrate	0.250
EDTA disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate monohydrate	8.400
Molybdic acid (sodium salt)	0.130
Potassium Iodide	0.830
Zinc sulphate heptahydrate	0.720
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	30000.000
GELLING AGENT	
Agar	8000.000
Total(gms/litre)	40.5

Material required but not provided :

- Autoclaved distilled water
- Plant growth regulators
- 1N NaOH/HCl
- Casein hydrolysate (PCT0403)

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
40.5 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
5.40 - 6.40

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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