

Rose Rooting Medium

With Vitamins, Sucrose, 6-BAP, NAA and Agar

Product Code: PT142

Product Description :

Rose Rooting Medium, has been formulated for the *in vitro* rooting of *Rosa*, family *Rosaceae*. It is based on the Murashige and Skoog media composition with certain alterations improving its suitability for Rose species. The formulation is a nutrient blend of inorganic salts, vitamins, amino acid, carbohydrate and gelling agent.

The medium provides all the essential macroelements and microelements. Potassium nitrate and ammonium nitrate serve as sources of nitrogen. Potassium dihydrogen phosphate provides phosphate. Microelements like Manganese, Molybdenum, Copper, Iron, Cobalt 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 plants. Glycine serves as a source of amino acid. 6-BAP aids in the stem elongation and proliferation of shoots while NAA induces callusing and promotes effective rooting.

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	
Ammonium nitrate	412.000
Calcium chloride	83.050
Magnesium sulphate	92.500
Potassium nitrate	475.000
Potassium phosphate monobasic	42.500
MICROELEMENTS	
Boric acid	1.550
Cobalt chloride hexahydrate	0.006
Copper sulphate pentahydrate	0.006
EDTA disodium salt dihydrate	9.325
Ferrous sulphate heptahydrate	6.950
Manganese sulphate monohydrate	4.224

Molybdic acid (sodium salt)	0.063
Potassium Iodide	0.207
Zinc sulphate heptahydrate	2.150
VITAMINS	
myo-Inositol	100.000
Nicotinic acid (free acid)	0.500
Pyridoxine HCl	0.500
Thiamine hydrochloride	0.400
AMINO ACID	
Glycine	2.000
CARBOHYDRATE	
Sucrose	30000.000
GELLING AGENT	
Agar	7000.000
OTHERS	
6-Benzylaminopurine	0.005
Naphthalene acetic acid	0.030
Total(gms/litre)	38.2

Material required but not provided :

- Autoclaved distilled water
- 1N NaOH/HCl

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

38.2 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

4.90 - 5.90

Plant Tissue Culture Test

The growth promoting properties of medium is assessed by providing plant cultures with relative humidity of about $60\% \pm 2\%$, temperature $22^\circ\text{C} \pm 2^\circ\text{C}$ 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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Disclaimer :

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