Technical Information

Vacin and Went Modified Medium

With Ferric tartrate replaced by $FeSO_4$, Sucrose Without Vitamins, Agar

Product Code: PT1081

Application: Vacin and Went medium consists of the macroelements and microelements as described by Vacin and Went in 1949. The medium was developed for the *in vitro* culture of orchid species.

The formulation is a nutrient blend of inorganic salts and carbohydrate. Potassium nitrate and ammonium sulphate serve as source of nitrogen and induces organogenesis. Calcium phosphate and potassium dihydrogen phosphate serve as sources of phosphate and enhances protocorm like bodies formation. Microelements like manganese and iron plays a key role in the metabolism and enhance proliferation in plant tissues. The modification includes ferrous sulphate in combination with a chelating agent as ferric tartarate precipitates easily in the medium.

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 sulphate	500.000
Calcium phosphate	200.000
Magnesium sulphate	122.087
Potassium nitrate	525.000
Potassium phosphate monobasic	250.000
MICROELEMENTS	
EDTA Disodium salt dihydrate	37.300
Ferrous sulphate heptahydrate	27.800
Manganese sulphate	5.683
CARBOHYDRATE	
Sucrose	20000.000
Total(gms/litre)	21.7

Material required but not provided

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

Quality Control

Appearance
White to off-white, homogenous, free flowing powder
Solubility
21.7 gms/litre partially soluble in distilled water
Colour and Clarity
Colourless to light yellow hazy solution (Due to inherent property of the medium composition, haze develops, which does not affect the performance parameters)

pH at 25ºC

5.10 - 6.10

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.
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