Cactus Multiplication Medium PT124
w/ Vitamins, Sucrose, Adenine sulphate, 2iP, IAA, IBA and Agar

Composition :

Ingredients	milligrams/litre
Potassium nitrate	1900.00
Ammonium nitrate	1650.00
Calcium chloride.$2H_2O$	440.00
Magnesium sulphate	180.69
Potassium phosphate monobasic	170.00
Sodium phosphate monobasic	73.90
Manganese sulphate.H_2O	16.90
Boric acid	6.20
Potassium iodide	0.83
Molybdic acid (sodium salt).$2H_2O$	0.25
Zinc sulphate.$7H_2O$	8.60
Copper sulphate.$5H_2O$	0.025
Cobalt chloride.$6H_2O$	0.025
Ferrous sulphate.$7H_2O$	27.80
EDTA disodium salt.$2H_2O$	37.30
myo - Inositol	100.00
Thiamine hydrochloride	30.00
Pyridoxine hydrochloride	1.00
Nicotinic acid (Free acid)	10.00
L-Tyrosine	100.00
Adenine sulphate	80.00
2iP	10.00
Indole-3-acetic acid	0.50
Indole-3-butyric acid	1.00
Sucrose	45000.00
Agar	8000.00
TOTAL gm/litre	**57.84**

Directions :

Suspend 57.72 grams of dehydrated medium# in 600ml of distilled water and rinse media vial with small quantity of distilled water to remove traces of powder. Apply constant gentle stirring to the solution till the powder dissolves completely. Add desired heat stable supplements prior to autoclaving. Adjust the medium to the desired pH using 1N HCl/NaOH. Make up the final volume to 1000ml with distilled water. Boil the medium to dissolve agar completely. Sterilize the medium by autoclaving at 15 lbs or 121ºC for 15 minutes. Cool the autoclaved medium to 45ºC before adding the filter sterilized heat labile supplements. Dispense the desired amount of medium aseptically in sterile culture vessels.

Weight after vacuum drying to remove all water

Principle and Interpretation :

Cactus multiplication medium has been specially formulated for the *in vitro* culture of Cactus species. Ammonium nitrate and potassium nitrate serves as the sources of nitrate. L-Tyrosine serves as the source of amino acid. 2iP, IAA and IBA serves as plant growth regulators. Sucrose serves as the source of carbohydrate. Agar is incorporated into the medium to provide firm base to the explants.

Quality Control :

Appearance	: White to off-white, homogeneous, free flowing powder.
Solubility	: 57.72 gm/litre soluble in distilled water.
Colour and Clarity	: Colourless to light yellow, clear solution.
pH at 25°C	: 5.3±0.5 of 5.772% w/v dehydrated medium.

Cultural Response :

Cultural condition :

- Incubation period : 5 weeks
- Relative humidity : 60% ± 2%
- Temperature : 22°C ± 2°C
- Photoperiod (D:N) in hours : 16:8

Cell Line	Type of Culture	Results
Musa species	Shoot culture	No structural deformity observed No necrotic tissues, Actively growing shoots, No toxicity to shoots
Daucus species	Callus culture	No necrotic tissues, Actively growing callus, No toxicity to callus

[The medium is prepared as per direction. The growth promoting activity of this plant tissue culture medium is evaluated using two plant species viz. *Musa* species and *Daucus* species through three passages.]

Storage and shelf life :

Dehydrated plant tissue culture media powder is extremely hygroscopic and should be protected from atmospheric moisture. If possible, the entire content of each bottle should be used immediately after opening or else the unused portion should be stored in a desiccator and refrigerated at 2-8°C. Use before the expiry date.

Reference :

Murashige T. & Skoog F., Physiol. Plant., (1962), 15, 473 - 497