Begonia Multiplication Medium PT109
w/ Vitamins, Sucrose, Adenine sulphate, IAA and 2iP; w/o 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
Manganese sulphate.H_2O	16.90
Boric acid	6.20
Potassium iodide	0.83
Molybdic acid (sodium salt).$2H_2O$	0.21
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	0.40
Sucrose	30000.00
Indole-3-acetic acid	1.00
Adenine sulphate	30.00
6-(γ, γ-dimethylallylamino)-purine	10.00
TOTAL gm/l	**34.58**

Directions :

Suspend 34.45 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. 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 :

Begonia multiplication medium has been specially formulated for the *in vitro* culture of Begonia species. Ammonium nitrate and potassium nitrate serves as the nitrate sources. IAA and 2iP serves as plant growth regulators. Sucrose serves as the source of carbohydrate. Medium does not contain agar; hence this supplement has to be added to the medium before use.

Quality Control :

Appearance	: White to off-white, homogeneous, free flowing powder.
Solubility	: 34.45gm/litre soluble in distilled water.
Colour and Clarity	: Colourless to light yellow, clear solution.
pH at 25°C	: 3.9 ±0.5 of 3.445% 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
Begonia species	Shoot culture	No structural deformity observed No necrotic tissues, Actively growing shoots, No toxicity to shoots

[The medium is prepared as per direction. The growth promoting activity of this plant tissue culture medium is evaluated using plant species viz. *Begonia* 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