



Banana Micropropagation Medium (With Vitamins, without NH_4NO_3 , Sucrose and Agar)

RDM-MSBP-01

Principle

Banana Micropropagation Medium has been developed for the in vitro propagation of Banana micropropagation. The formulation is composed of macronutrients, micronutrients, carbon sources, amino acid and vitamins. The macronutrients contain essential elements like nitrogen (N), phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg) and sulphur (S) for satisfactory growth and morphogenesis. The micronutrients include iron (Fe), manganese (Mn), zinc (Zn), boron (B), copper (Cu) and molybdenum (Mo) required for the growth of plant tissue and cells. Amino acids are used for optimal growth, they are important for establishing cultures of cells and protoplasts. Amino acids provide plant cells with a source of nitrogen that is easily assimilated by tissues and cells faster than inorganic nitrogen sources. Vitamins are required for normal growth and development of plant cells; they are required by plants as catalysts in various metabolic processes. The commonly used vitamins are: thiamin (B1), nicotinic acid and pyridoxine (B6). Thiamin is necessarily required by all cells for growth. Nicotinic acid and pyridoxine. The myo-inositol is added in small quantities to stimulate cell growth of most plant species.

Use: Recommendation for the in vitro propagation of Banana plants.

Contents*

Ingredients

Ingredients	mg/l	Ingredients	mg/l
MACROELEMENTS		VITAMINS	
Calcium chloride	166.450	Myo-inositol	100.000
Magnesium sulphate	120.400	Nicotinic acid	0.500
Potassium nitrate	2020.000	Pyridoxine HCl	0.500
Potassium phosphate monobasic	44.000	Thiamine HCl	0.100
MICROELEMENTS		AMINO ACID	
Boric acid	1.240	Glycine	2.000
Cobalt chloride	0.240		
Copper sulphate	0.250	TOTAL	2.5g/l
EDTA disodium salt	37.300		
Ferrous sulphate	27.800		
Manganese sulphate	8.400		
Molybdic acid	0.130		
Potassium iodide	0.830		
Zinc sulphate	0.720		

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 2.5 gram in 750 ml distilled water mix well to dissolve all the ingredients. Add Heat stable ingredients & make up the volume to 1000 ml. Adjust the pH 5.75 ± 0.5 using 1N HCl/NaOH. Boil to dissolve the gelling agar completely. Sterilize by autoclaving at 15 lbs pressure (121 °C) for 15 min. Cool to 40°C for addition of heat labile ingredient. Aseptically dispense the medium in desired.

Precautions to be taken

These plant tissue culture media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	White to off-white homogenous, free flowing powder.
Solubility	2.5 g/l soluble in distilled water
pH at 25 °C	5.75 ±0.5
Color and clarity of ready medium	Colorless clear solution
Growth promoting properties	Assessed by providing plant cultures with relative humidity of about 60%±2%, temperature 22°C±2°C and photoperiod of about 16:8.
Cultural Response	Plant species showed actively growing callus and shoots with no structural, necrotic and toxic deformity

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label.

Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Kalyan Kumar De (2008), *An introduction to Plant Tissue Culture*, 7th Ed., Darjeeling Govt. College, Darjeeling, India. New Central Book Agency(P) Ltd. Kolkata, India.
2. Narayanaswamy S (2005). *Plant cell and tissue Culture*, Tata Mc-Graw Hill publishing Co. Ltd. 6th reprint.
3. Roberta H.Smith .(2005), *Plant Tissue Culture-Techniques and Experiments*, 2nd Ed., Texas A&M University, College Station, Texas. Academic Press. An Imprint of Elsevier, San Diego California, U.S.A.

Disclaimer

The information contained in the technical data sheet is to the best of our knowledge is accurate and true based on the research and development work carried out by **ReadyMED®**, Chaitanya Agro Biotech, Malkapur, Maharashtra. The products are neither intended for any therapeutic use for animal or human nor for any other *in-vivo* applications. The **ReadyMED®** products are only meant to be used for the laboratory, diagnostic, research, or further manufacturing purpose only. These technical outcomes should not be considered as the warranty of any kind expressed or implied, and no liability is accepted for infringement of any patent.

CHAITANYA AGRO BIOTECH PVT. LTD.

An ISO 11133:2014, ISO 13485:2016, ISO 9001:2015 CE, CIN NO.: U24210MH1995PTC095220S,
S. No. 120/2, Laxmi Nagar, Umbarnala Road, Malkapur-443101, Dist.: Buldana (M.S.) India. Customer Care +91-8208650655
rdmsales@chaitanyagroupindia.com, mkt.cabt@chaitanyagroupindia.com, www.chaitanyagroupindia.com