Strawberry Rooting Medium RDM-MSSR-01

(With Vitamins, Sucrose, 6-BAP and Agar)

Principle

Strawberry rooting medium has been developed for the in vitro propagation of Strawberry rooting. 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. The carbohydrates are used as carbon sources and energy source. Sucrose was reported to act as morphogenetic trigger in the formation of auxiliary buds and branching of adventitious root. 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, however not essential for cell growth of many species, they are often added to culture media. The myo-inositol is added in small quantities to stimulate cell growth of most plant species. Agar is solidifying agent.

Use: Recommendation for the in vitro multiplication of Strawberry plants.

Contents*

Ingredients

Ingredients	mg/l	Ingredients	mg/l
MACROELEMENTS		**VITAMINS**	
Nitrate source#	1650.000	Myo-inositol	100.000
Calcium chloride	440.000	Nicotinic acid	0.500
Magnesium sulphate	180.000	Pyridoxine HCl	0.500
Potassium nitrate	1900.000	Thiamine HCl	0.400
Potassium phosphate monobasic	170.000	**CARBOHYDRATE**	
MICROELEMENTS		Sucrose	30000.000
Boric acid	6.200	**OTHERS**	
Cobalt chloride	0.025	6-Benzylamino purine	1.000
Copper sulphate	0.025	Agar	8000.000
EDTA disodium salt	37.300		
Ferrous sulphate	27.80	**Total**	**42.54**
Manganese sulphate	16.900		
Molybdic acid	0.250		
Potassium iodide	0.830		
Zinc sulphate	8.600		

* Formula adjusted for optimum performance and parameter

Equivalent to ammonium nitrate

Directions: Dissolve 42.54 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 ±0.2 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	Off-white homogenous, free flowing powder.
Solubility	42.54 g/l soluble in distilled water
pH at 25 ˚C	4.50±0.5
Gelling	Firm comparable with 0.8% agar gel
Color and clarity of ready medium	Hazy gel
Growth promoting properties	Assessed by providing plant cultures with relative humidity of about 60%±2%, temperature 22ºC±2ºC 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. Kolkota, 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.

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