Benfey lab root architecture media rice (Yoshida's solution) | 2010

Individual 800x macro stocks	Grams/L
NH 4 NO 3	91.4
NaH 2 PO 4 · 2H 2 O	40.3
K 2 SO 4	71.4
CaCl 2	88.6
MgSO 4 · 7H 2 O	324

Complete 800x micro stock	Grams/L
MnCl 2 · 4H 2 O	1.5
(NH 4) 6 · MO 7 O 24 · 4H 4 O	0.074
H 3 BO 3	0.934
ZnSO 4 · 7H 2 O	0.035
CuSO 4 · 5H 2 O	0.031
FeCl 3 · 6H 2 O	7.7
Citric acid (monohydrate)	11.9

micro stock instructions

dissolve separately:

i) 1.5g MnCl2-4H2O in 40 mL H2O bring to 50 mL
ii) 0.074g (NH4)6MO7O24-4H20 in 40 mL dH2O bring to 50 mL
iii) 0.934g H3BO3 in 40 mL bring to 50 mL
iv) 7.7g FeCl3-6H2O in 40 mL H20 bring to 50mL (do this in the hood)
v) 11.9g Citric acid monohydrate in 40mL H2O bring to 50 mL
vi) prepare [50mM] stock of ZnSO 4 · 7H 2 O --> 14.37 g/ Liter
vii)prepare [50mM] stock of CuSO 4 · 5H 2 O --> 12.48 g / Liter
viii) add 50mL conc. H2SO4 to 550mL dH2O in glass beaker
ix) slowly add solutions to diluted H2SO4:
1.) 50 mL of MnCl2.4H2O
2.) 50 mL of (NH4)6MO7O24.4H20
3.) 50 mL of H3BO3
4.) 2.435 mL of [50mM] ZnSO4.7H2O
5.) 2.483 mL of [50mM] CuSO4.5H2O
6.) 50 mL of FeCl3.6H2O (do this in the hood)
7.) 50 mL of Citric acid monohydrate
8.) Bring up to 1L

Yoshida's gel for rice

1. add 1.25 mL each macro stock solution and the micro stock to 1 Liter final volume
2. add 0.546 g MES hydrate per Liter
3. pH to 5.8 with NaOH
4. Add Gelzan (Caisson) 2.5g/ Liter for a final 0.25% gel
5. Autoclave with stir bar and mix prior to gel hardening