

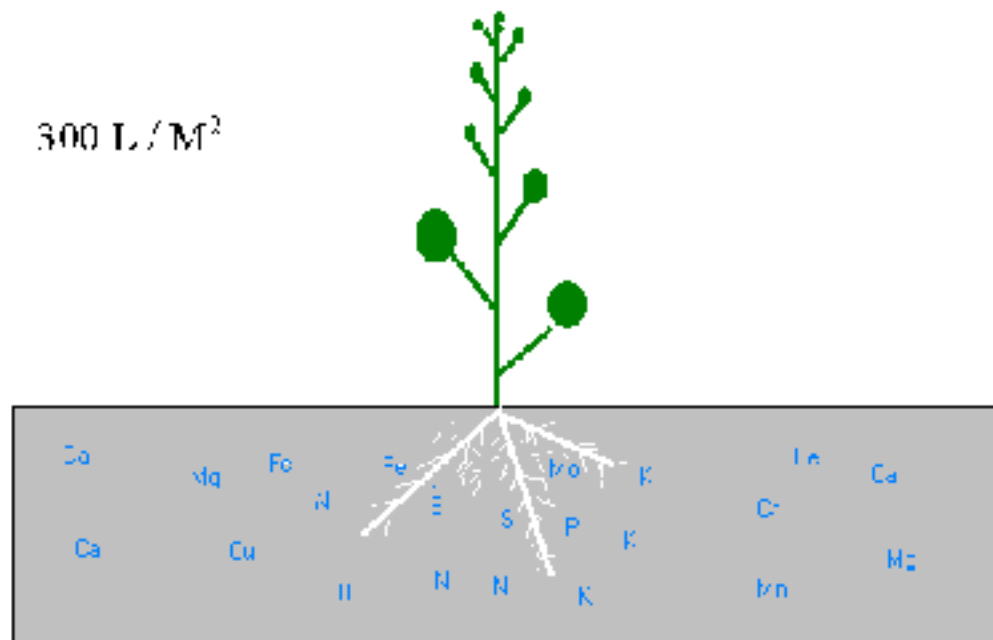
Fytocell

Substrate growing medium

Principle of growing in substrate

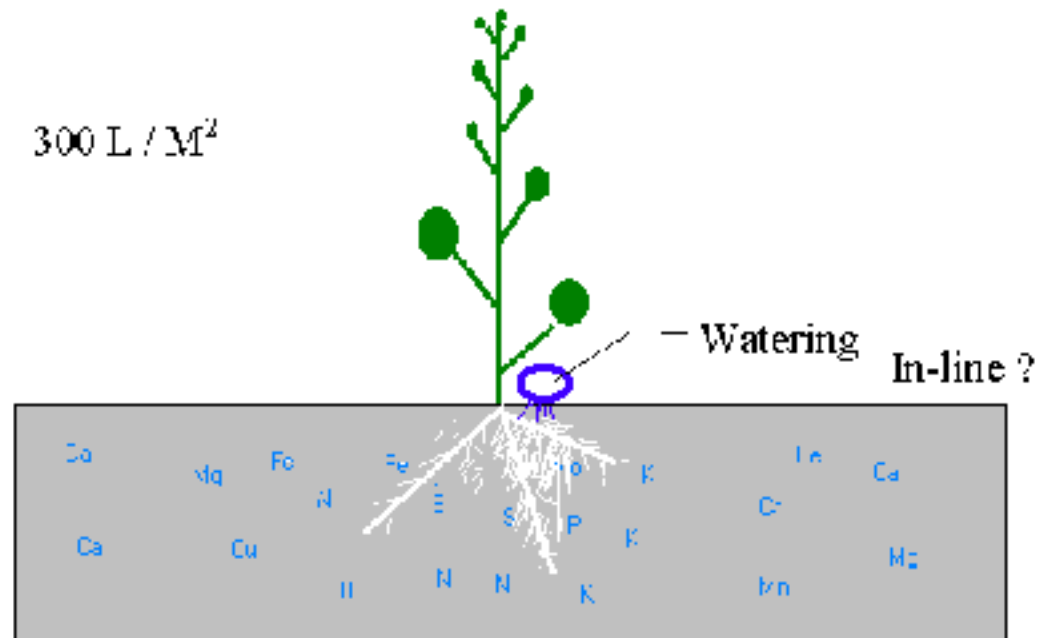
Plant in soil

300 L / M²



Plant in soil

300 L / M²

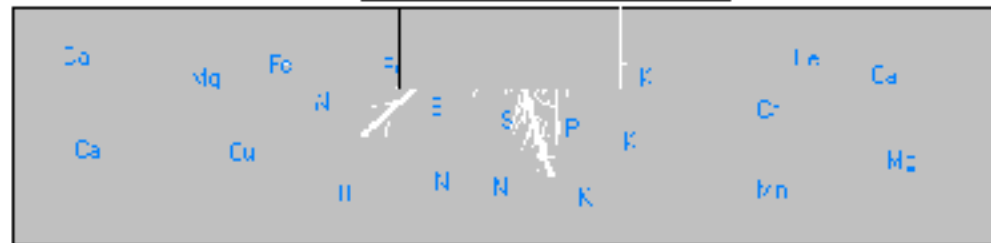


Plant in substrate

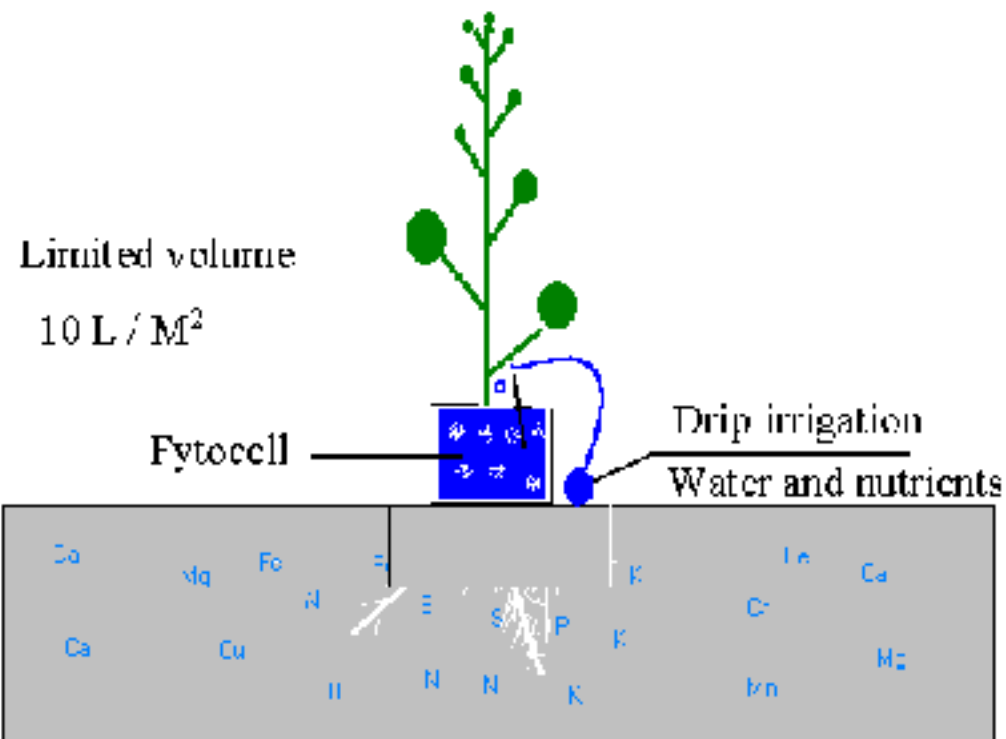
Limited volume

In-line not possible

Plastic foil



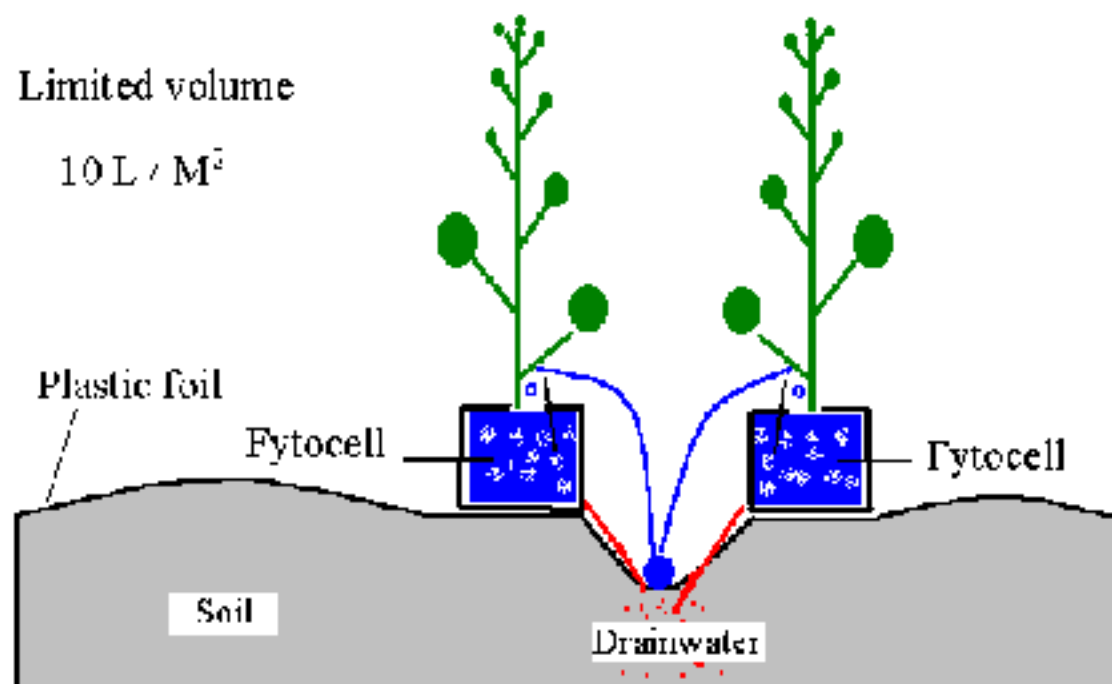
Plant in substrate



Plant in substrate

Limited volume

$10 \text{ L} / \text{M}^2$

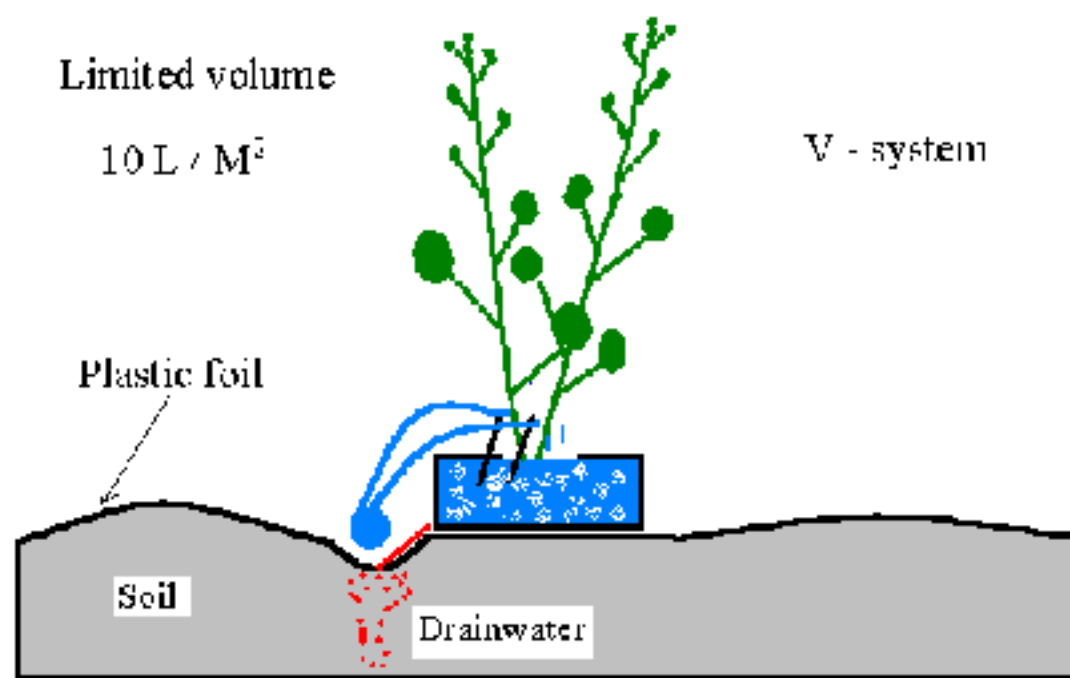


Plant in substrate

Limited volume

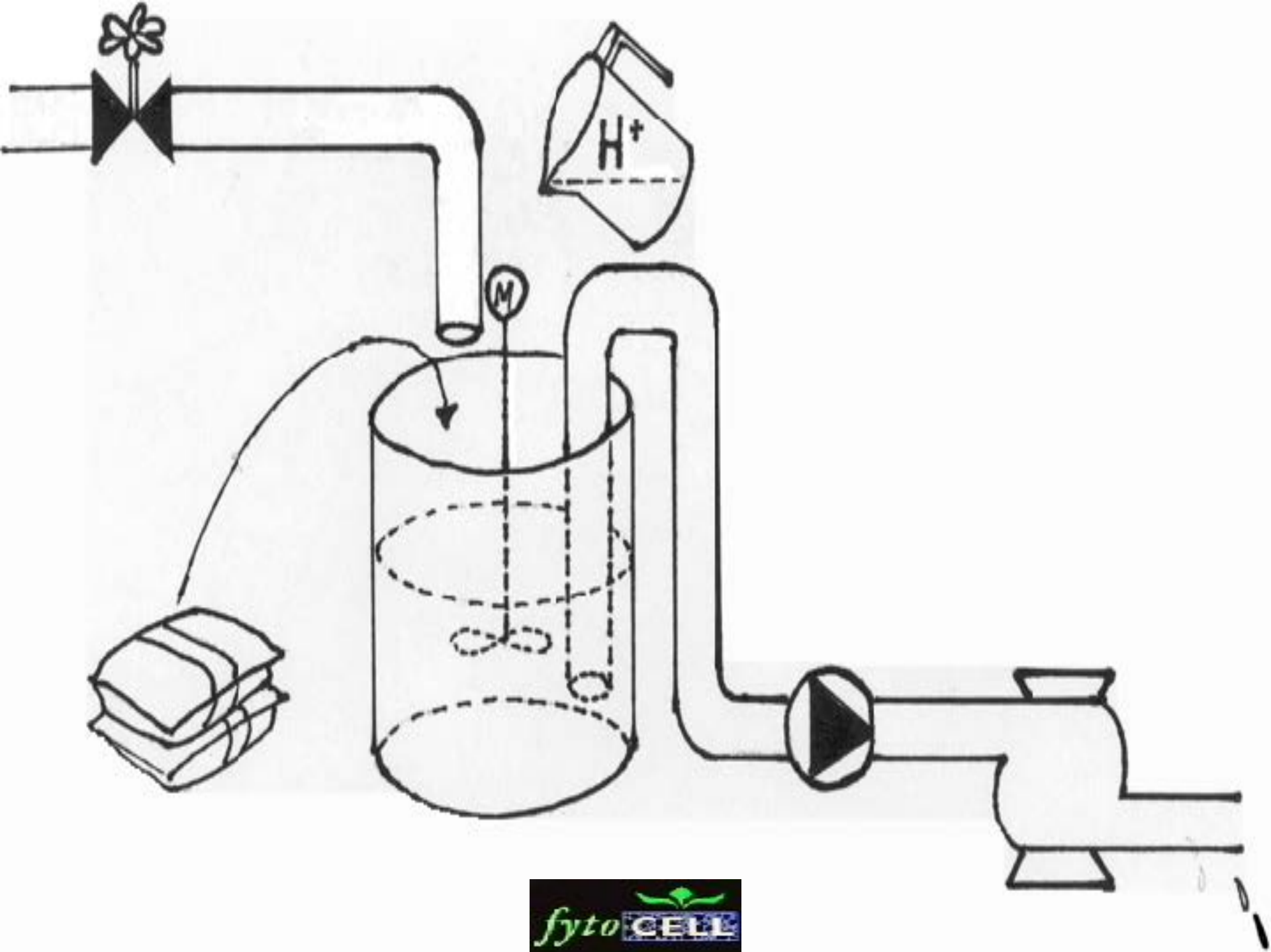
$10 \text{ L} / \text{M}^2$

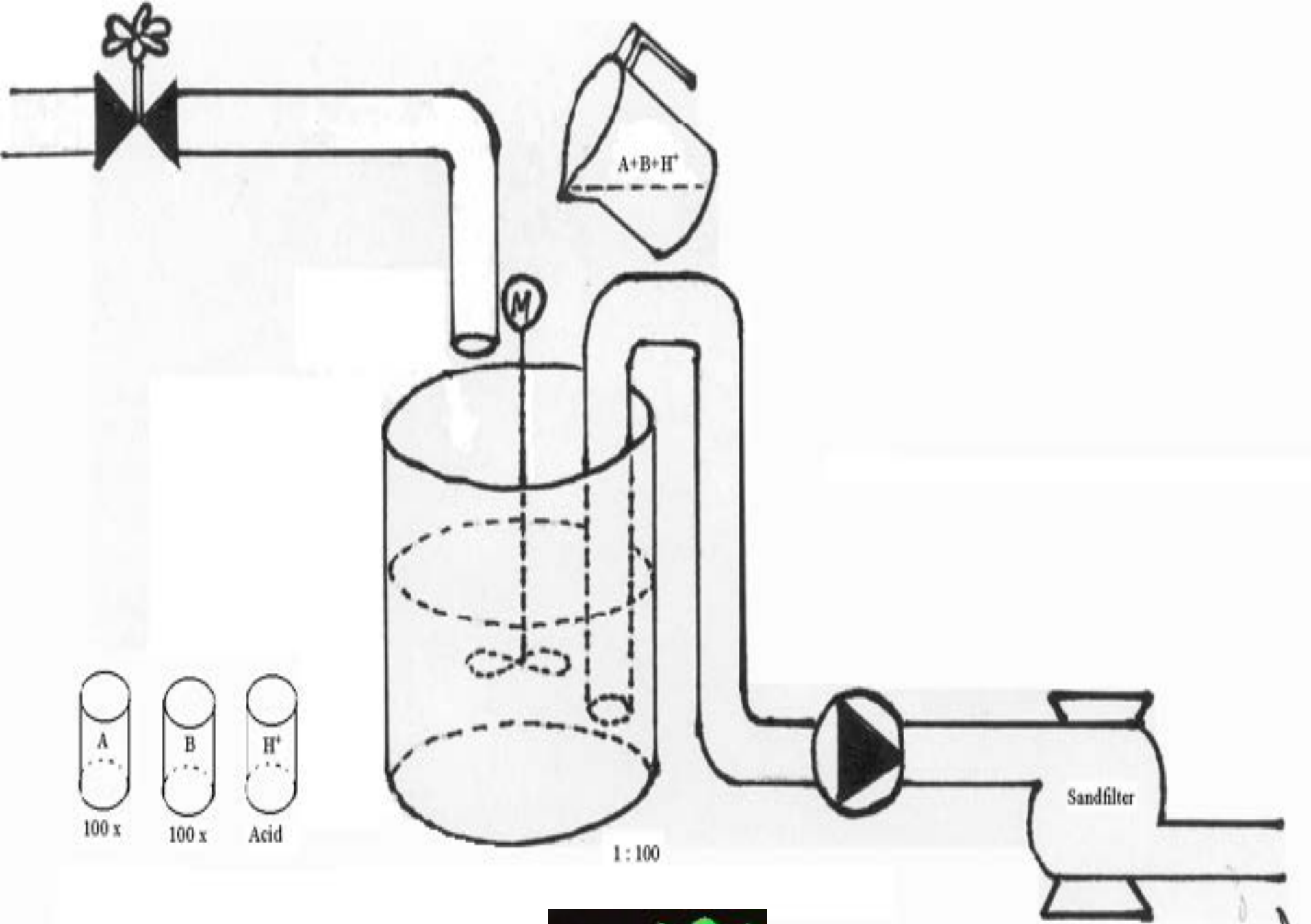
V - system

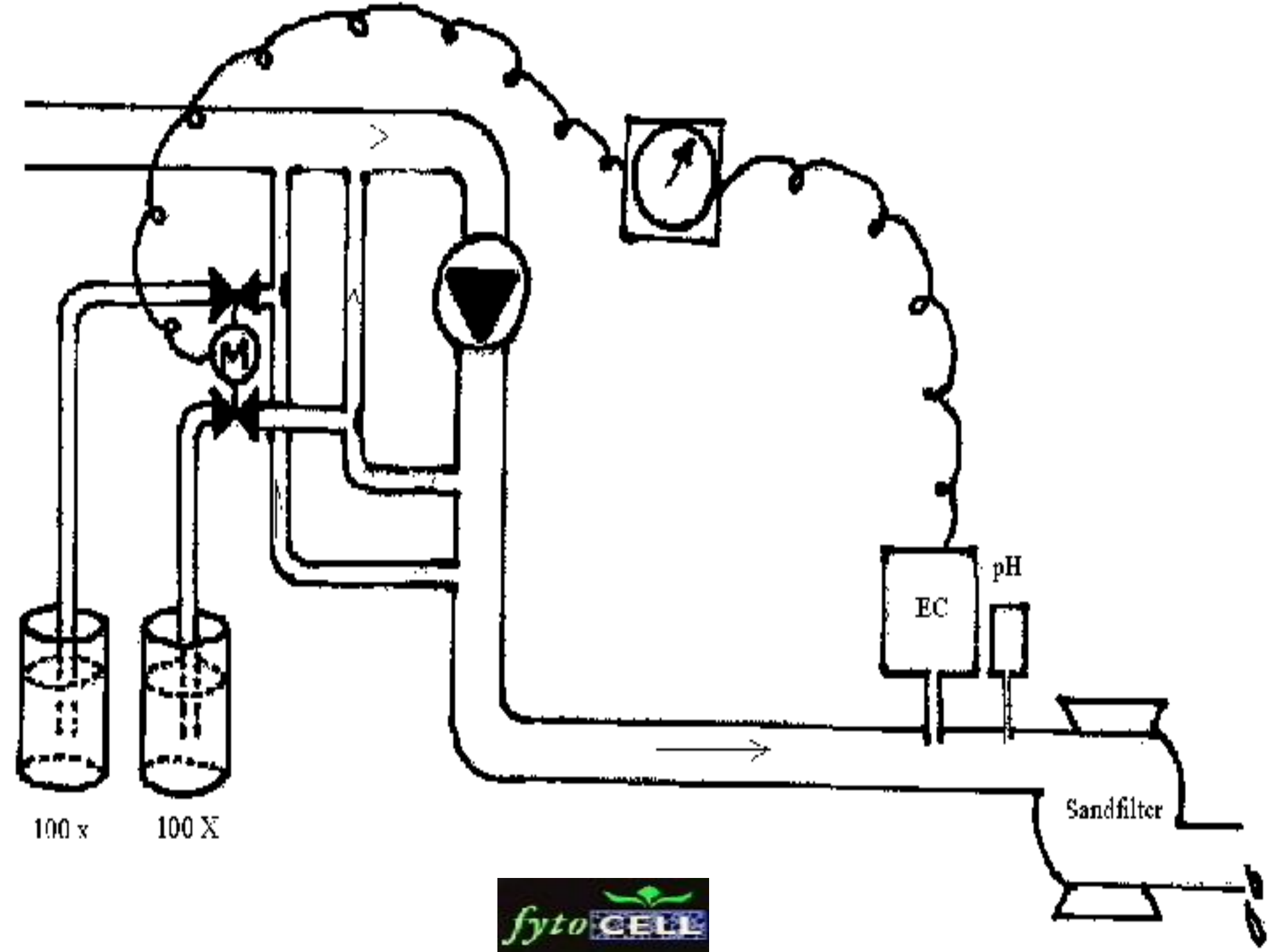




Nutrition systems



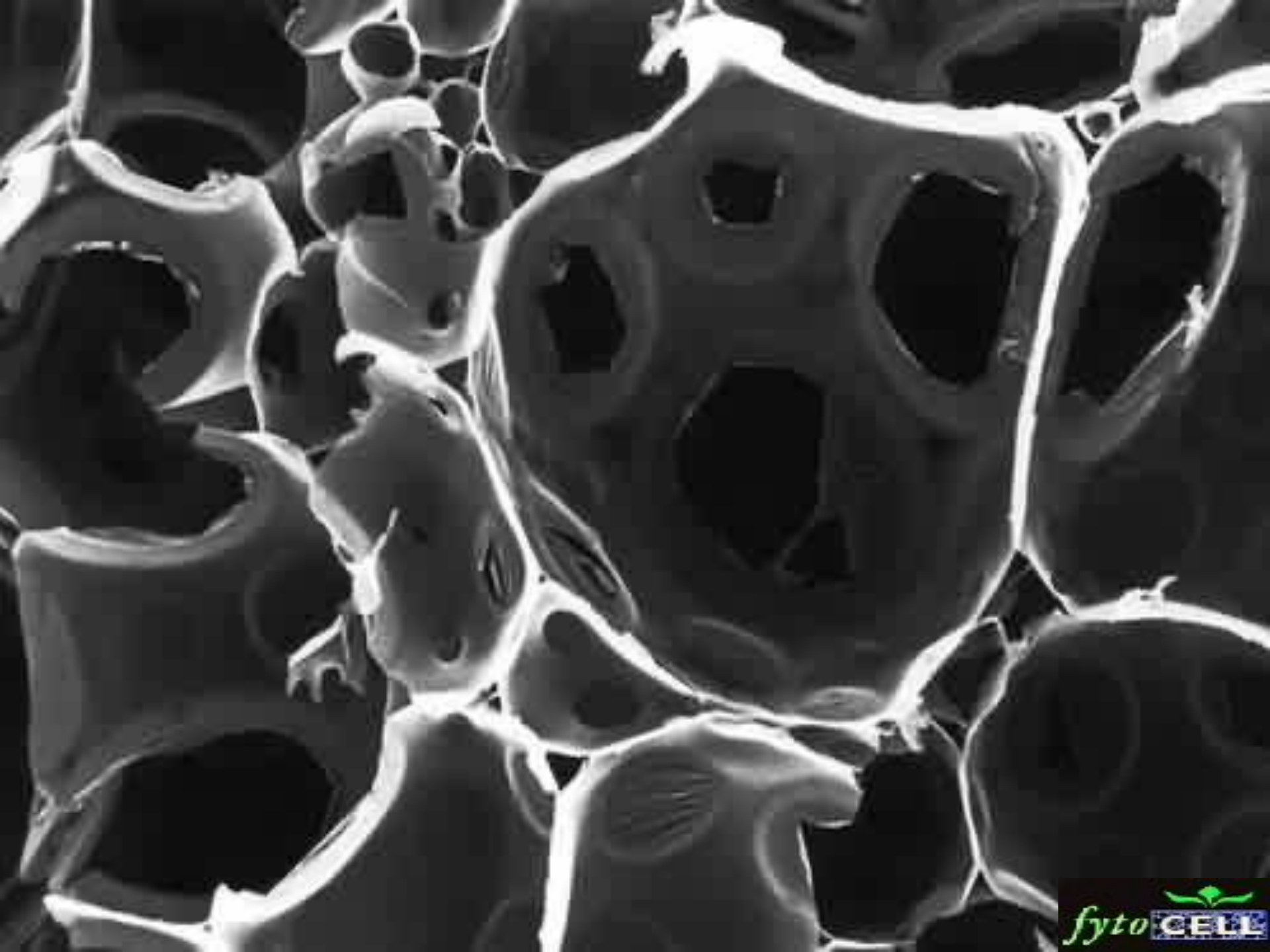


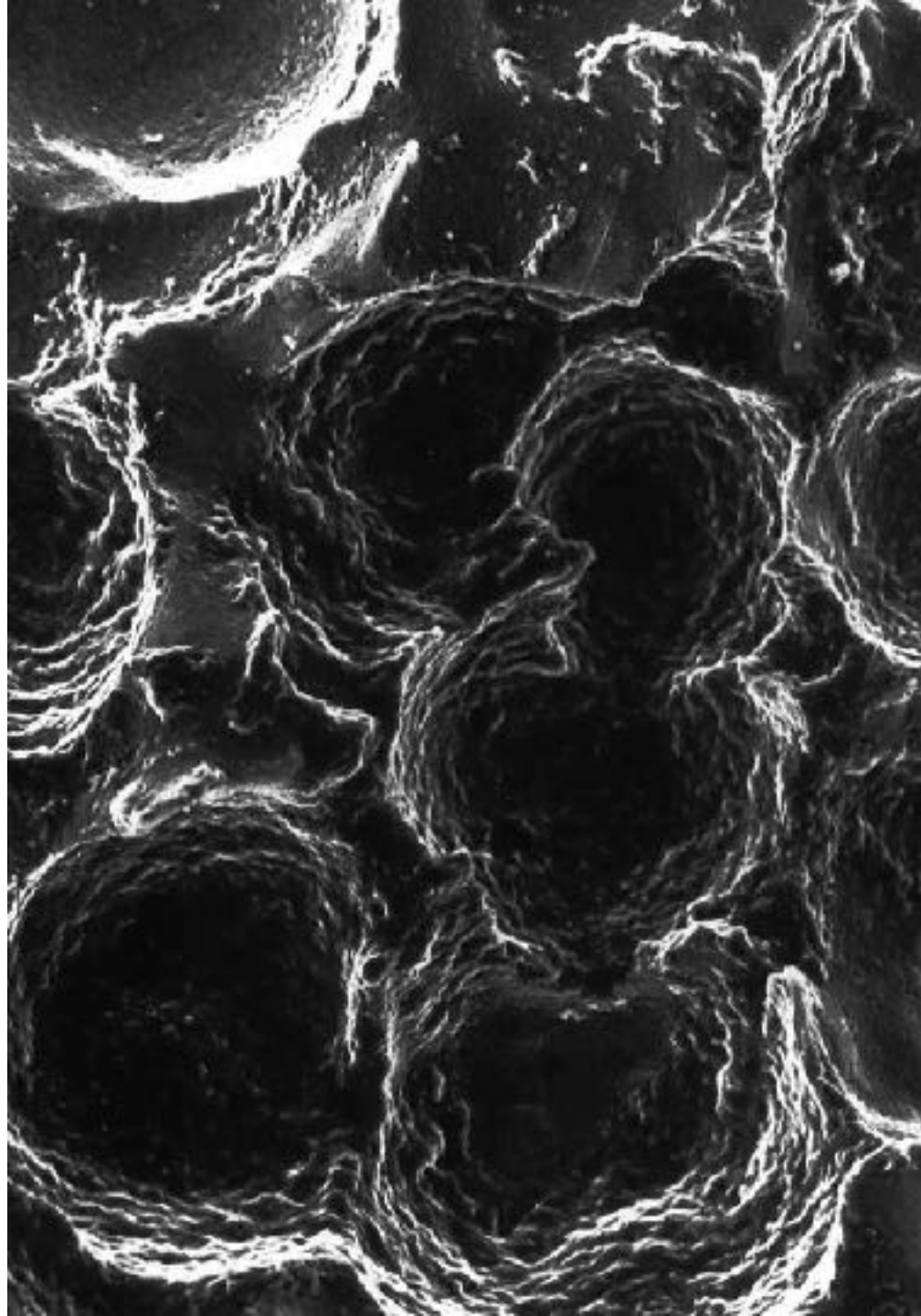


What is FytoCell ?

FytoCELL : Identification

- **Chemical Name**
- **Synonyms**
- **Formula**
- **Chemical Family**
- **Aminoplast**
- **UF resin**
- $\text{H}_2\text{O}-\text{CO}-\text{NH}-\text{CH}_2\text{CH}_2\text{N}-\text{CO}-\text{NH}-\text{CH}_2-\text{H}_2\text{O}$
- **Aminoplast-Duroplast**





In practice



















fyto CELL

fyto CELL

















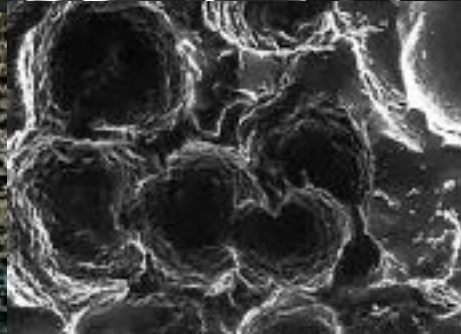
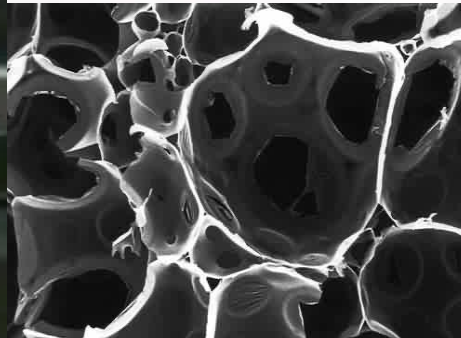
AGRO - applications

- Turf industry
- FYTOFOAM or Fytogreen Schaum
- Nursery Stock
- Potting Soil Industry
- Soil less Culture





Fytogreen



Fytogreen





fyto plus **3E** S.L.
eco espuma
españa



Prueba 3E 205-100-100 soil

fyto FOAM



Prueba 3E 205-100-100 soil



fyto plus **3E** S.L.
eco espuma
españa





FytoCell

– successful applications

- **Horticulture / Glasshouse**
 - **Tomatoes** **Cucumber**
 - **Sweet Pepper** **Aubergine**
 - **Courgette** **Strawberries**

 - **Roses** **Gerbera**
 - **Cymbidium** **Anthurium**

FytoCell : Miscellaneous

- Less transport, volume is produced locally

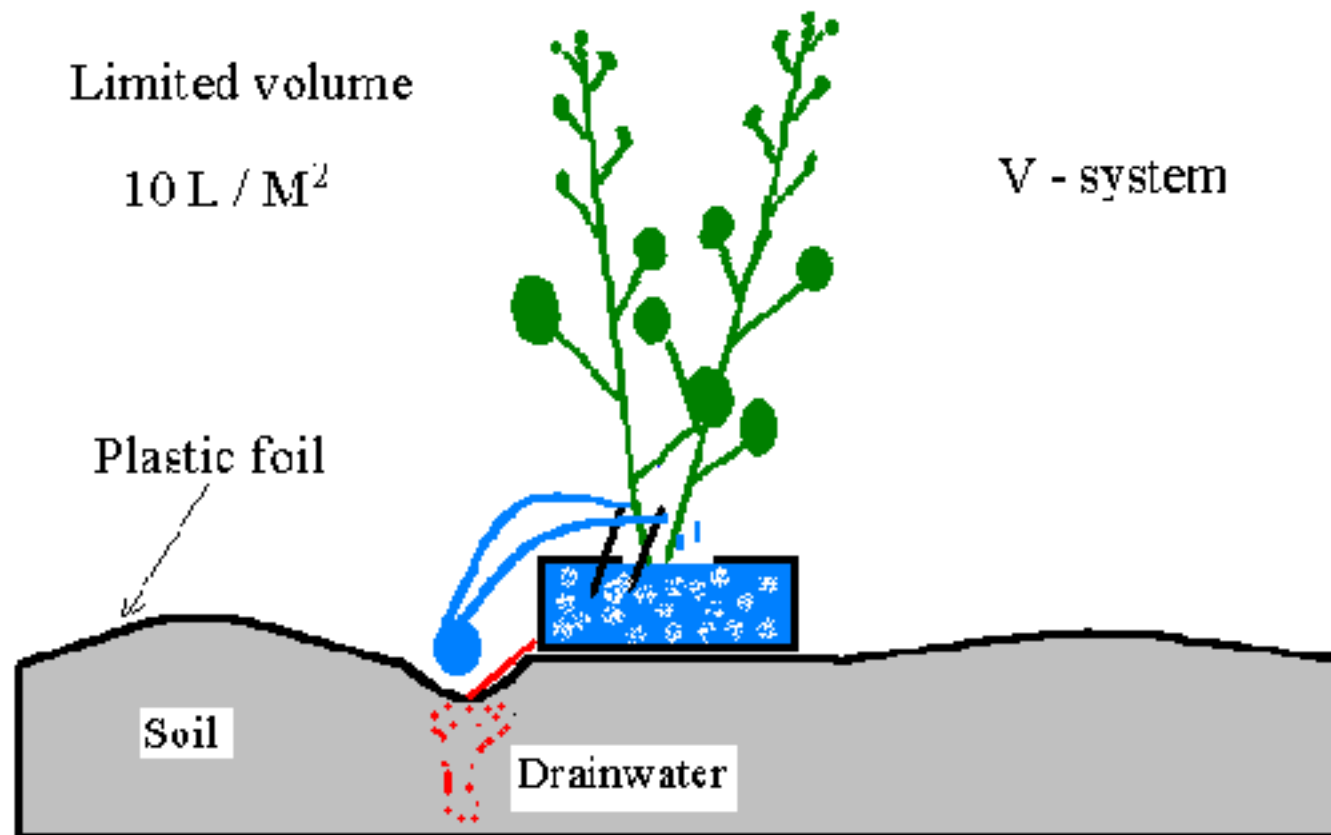
One 20 ft container (35 m³) filled with 19.500 litre of resin will result in 557 m³

Plant in substrate

Limited volume

$10 \text{ L} / \text{M}^2$

V - system





fyto CELL

Standard nutrient solution

Crop: Tomato

dd:

EC = 2,8 mS/cm 25 °C

pH= 5,5

NH_4^+	K^+	Ca^{2+}	Mg^{2+}	NO_3^-	SO_4^{2-}	H_2PO_4^-
mmol/l						
1,2	9,5	5,4	2,4	16	4,4	1,5

Fe	Mn	Zn	B	Cu	Mo
$\mu\text{mol/l}$					
15	10	5,0	30,0	0,75	0,50

In the substrate

EC = 3,7 mS/cm 25 °C

	NH_4^+	K^+	Ca^{2+}	Mg^{2+}	NO_3^-	SO_4^{2-}	P	Na^+	Cl^-	pH	EC
mmol/l											
Low	0,0	6,5	8,0	2,7	17,0	4,0	0,7	0,0	4,0	5,0	2,5
High	0,5	10,0	12,0	6,5	28,0	9,0	2,0	12,0	12,0	6,5	5,0

	Fe	Mn	Zn	B	Cu	Mo
$\mu\text{mol/l}$						
Low	18,0	3,0	5,0	35,0	0,5	0,0
High	35,0	10,0	10,0	65,0	1,5	0,0

Remarks:Water:

Nutrients	A container Kg	B container Kg
H_2PO_4 (liquid) 59 % (1,42)		
KH_2PO_4		
$NH_4H_2PO_4$		
HNO_3 (liquid) 38 % (1,24)		
$Ca(NO_3)_2 / 0,2 NH_4NO_3$	117,0	
KNO_3		
NH_4NO_3		
K_2SO_4		35,0
$MgSO_4 \cdot 7 H_2O$		47,0
$Mg(NO_3)_2 \cdot 6 H_2O$		-
$CaCl_2 \cdot 2 H_2O$		
KCl		
Amnitra (liquid) (1,24)		
$Ca(NO_3)_2$ (liquid) (1,50)		
Magnitra (liquid) (1,35)		
$KHCO_3$		
$Ca(OH)_2$		
Peters 6 + 18 + 38 + 3 MgO		65,0

EC = 2,7 mS/cm 25 °C pH = 5,8

- Content of container A and B each 1 000 L.
- Dilution 100 times. (total 100 000 L nutrient solution)

Trace elements

Nutrients	A Container Grams	B container Grams
Iron chelate		
3% Fe		
5 % Fe		
5 % Fe		
7 %		
11 %		
13 %		
Manganese sulphate		
32 % Mn		
Zinc sulphate		
23 % Zn		
24,5 % Zn		
36 % Zn		
Borax		
11 % B		
Copper sulphate		
25 % Cu		
Sodium molybdate		
40 % Mo		

Remarks overall:

- * Content of container A and B each 1 000 L
- * Dilution 100 times. (total 100 000 L nutrient solution)
- * pH in A container between 1,5 and 6 by use of Fe-DTPA and between 3,0 and 6,0 by use of Fe-EDDHA
- * pH in B container below 5,3

	HCO ₃ ⁻	NH ₄ ⁺	K ⁺	Ca ²⁺	Mg ²⁺	NO ₃ ⁻	SO ₄ ²⁻	H ₂ PO ₄ ⁻	Na ⁺	Cl ⁻	1 mol 100 x	A	B	EC	
Wateranalyse															
H ₃ PO ₄ vlb. 59 % (1,42)											11,76			0,37	
KH ₂ PO ₄											13,61			0,68	
NH ₄ H ₂ PO ₄											11,50			0,86	
HNO ₃ vlb 38 % (1,24)											13,47			1,12	
Ca(NO ₃) ₂ / 0,2 NH ₄ NO ₃		0,2				2,2					21,61			1,24	
KNO ₃											10,11			1,35	
NH ₄ NO ₃											8,00			0,50	
K ₂ SO ₄											17,43			1,54	
MgSO ₄ . 7 H ₂ O											24,64			0,94	
Mg (NO ₃) ₂ . 6 H ₂ O											25,63			0,8	
CaCl ₂ . 2 H ₂ O											14,71				
KCl											7,46				
KHCO ₃											10,00			1,10	
Ca(OH) ₂											7,40				
Ca(NO ₃) ₂ vlb. (1,50)											21,33			0,60	
Amnitra vlb. (1,24)											12,50			0,86	
Magnitra vlb. (1,35)											29,60			0,54	
											EC				
Berekend															
Gewenst EC (c)															
Mat analyse															
EC (c) / EC (v)															
Minimum															
Maximum															

SPOORELEMENTEN μmol / l	Fe ³⁺	Mn ²⁺	Zn ²⁺	B ³⁺	Cu ²⁺	Mo
Matanalyse						
Streefwaarde						
Advies						

dec 1999

Wateranalyse	HCO ₃ ⁻	NH ₄ ⁺	K ⁺	Ca ²⁺	Mg ²⁺	NO ₃ ⁻	SO ₄ ²⁻	H ₂ PO ₄ ⁻	Na ⁺	Cl ⁻	l mol 100 x	A	B	EC
H ₃ PO ₄ vlb. 59 % (1,42)	7,0			2,5	1,0	-	-	-	3,5	3,7	11,76			0,37
KH ₂ PO ₄											13,61			0,68
NH ₄ H ₂ PO ₄											11,50			0,86
HNO ₃ vlb 38 % (1,24)	7,5					5,0					13,47			1,12
Ca(NO ₃) ₂ / 0,2 NH ₄ NO ₃		0,6		2,9		6,38					21,61			1,24
KNO ₃			4			4					10,11			1,35
NH ₄ NO ₃		0,6				0,6					8,00			0,50
K ₂ SO ₄			5,5				2,75				17,43			1,54
MgSO ₄ . 7 H ₂ O					1,4		1,4				24,64			0,94
Mg (NO ₃) ₂ . 6 H ₂ O											25,63			0,8
CaCl ₂ . 2 H ₂ O											14,71			
KCl											7,46			
KHCO ₃											10,00			1,10
Ca(OH) ₂											7,40			
Ca(NO ₃) ₂ vlb. (1,50)											21,33			0,60
Amnitra vlb. (1,24)											12,50			0,86
Magnitra vlb. (1,35)											29,60			0,54
											EC			
Berekend	0,5	1,20	9,5	3,4	2,4	15,98	2,15	1,5			1,7	waka. → 3,0		
Gewenst EC (c)	0,5	1,20	9,50	3,4	2,4	16,0	4,4	1,5	3,5	2,7	2,6			
Mat analyse														
EC (c) / EC (v)														
Minimum														
Maximum														

SPOORELEMENTEN μmol / l	Fe ³⁺	Mn ²⁺	Zn ²⁺	B ³⁺	Cu ²⁺	Mo
Matanalyse						
Streefwaarde						
Advies	15	10	5	30	0,70	0,50

dec 1999

Wateranalyse	HCO ₃ ⁻	NH ₄ ⁺	K ⁺	Ca ²⁺	Mg ²⁺	NO ₃ ⁻	SO ₄ ²⁻	H ₂ PO ₄ ⁻	Na ⁺	Cl ⁻	1 mol 100 x	A	B	EC
H ₃ PO ₄ vlb. 59 % (1,42)	7,0			2,5	1,0	-	-	-	3,5	3,7	11,76		17,64	0,37
KH ₂ PO ₄											13,61			0,68
NH ₄ H ₂ PO ₄											11,50			0,86
HNO ₃ vlb 38 % (1,24)	7,5					5,0					13,47		18,15	1,12
Ca(NO ₃) ₂ / 0,2 NH ₄ NO ₃		0,6		2,9		6,38					21,61	62,7		1,24
KNO ₃			4			4					10,11	40,11		1,35
NH ₄ NO ₃		0,6				0,6					8,00	4,8		0,50
K ₂ SO ₄			5,5				2,75				17,43		50,0	1,54
MgSO ₄ . 7 H ₂ O					1,4		1,4				24,64		34,5	0,94
Mg (NO ₃) ₂ . 6 H ₂ O											25,63			0,8
CaCl ₂ . 2 H ₂ O											14,71			
KCl											7,46			
KHCO ₃											10,00			1,10
Ca(OH) ₂											7,40			
Ca(NO ₃) ₂ vlb. (1,50)											21,33			0,60
Amnitra vlb. (1,24)											12,50			0,86
Magnitra vlb. (1,35)											29,60			0,54
											EC			
Berekend	0,5	1,20	9,5	5,4	2,4	15,98	2,15	1,5			1,1	waka → 3,0		
Gewenst EC (c)	0,5	1,20	9,50	5,4	2,4	16,0	4,4	1,5	3,5	2,7	2,6			
Mat analyse														
EC (c) / EC (v)														
Minimum														
Maximum														

SPOORELEMENTEN μmol / l	Fe ³⁺	Mn ²⁺	Zn ²⁺	B ³⁺	Cu ²⁺	Mo
Matanalyse						
Streefwaarde						
Advies	15	10	5	30	0,70	0,50

dec 1999

	A	B
Wateranalyse		
H ₃ PO ₄ vlb. 59 % (1,42)		17,64
KH ₂ PO ₄		
NH ₄ H ₂ PO ₄		
HNO ₃ vlb 38 % (1,24)		181,5
Ca(NO ₃) ₂ / 0,2 NH ₄ NO ₃	62,7	
KNO ₃	40,11	
NH ₄ NO ₃	4,8	
K ₂ SO ₄		50,0
MgSO ₄ . 7 H ₂ O		34,5
Mg (NO ₃) ₂ . 6 H ₂ O		
CaCl ₂ . 2 H ₂ O		
KCl		
KHCO ₃		
Ca(OH) ₂		
Ca(NO ₃) ₂ vlb. (1,50)		
Amnitra vlb. (1,24)		



Foto: Marten Sandburg

