

SCHOOL NAME

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Using alternative soil

Project question

What is the best soil for growing peppermints ?



- 1- Mover standards
- 2- Makes simulation
- 3- Apply information in ordinary life
- 4- How science work
- 5- Help students to think critically .
6. Choose the best alternative soil
- 7- Recycling

Introduction

Agriculture is moving toward higher-technology, and more capital-intensive solutions to farming problems. We try to apply new strategy of growing plant Plants, like all living things, need certain vitamins and minerals to grow and bloom. They have special needs depending on which part of the growing cycle they are going through. You want to provide more of one supplement during the initial growing stages and another during the blooming phase. This is the same as the human body needing more of one vitamin when in childhood and another in old age.

Samples of experiment

1-Hay of rice

2-Hydroponics

3-Ordinary soil

RICE HAY



Steps

1 – we collect rice hay and put it in container add water and nutrients to make fermentation for one week .



Fermentation container

2- Grow seedling of peppermint (put vitamin B).



2-Irrigate it every day

3-Count number of leaves before growing and per weak



2- Hydroponics soil in growing plants

Using water has vitamins and nutrients to grow plants. Some of the most necessary vitamins and minerals needed by plants in your home hydroponics garden are the B vitamins. These give your plant the energy they need to grow, ability to handle any stresses caused by less than ideal circumstances. The B vitamins also help your home hydroponics plants repair any harm that may be done.

WHAT YOU NEED

- nutrients .
- plants
- aquarium motor .

Procedure

Cut the pipe as the image .



Fill it with hydroponics solution



Check leak water



Make pores in plastic part (to allow root go out) and put the seedling in holes .



Put aquarium motor



Collect data

Growth rate

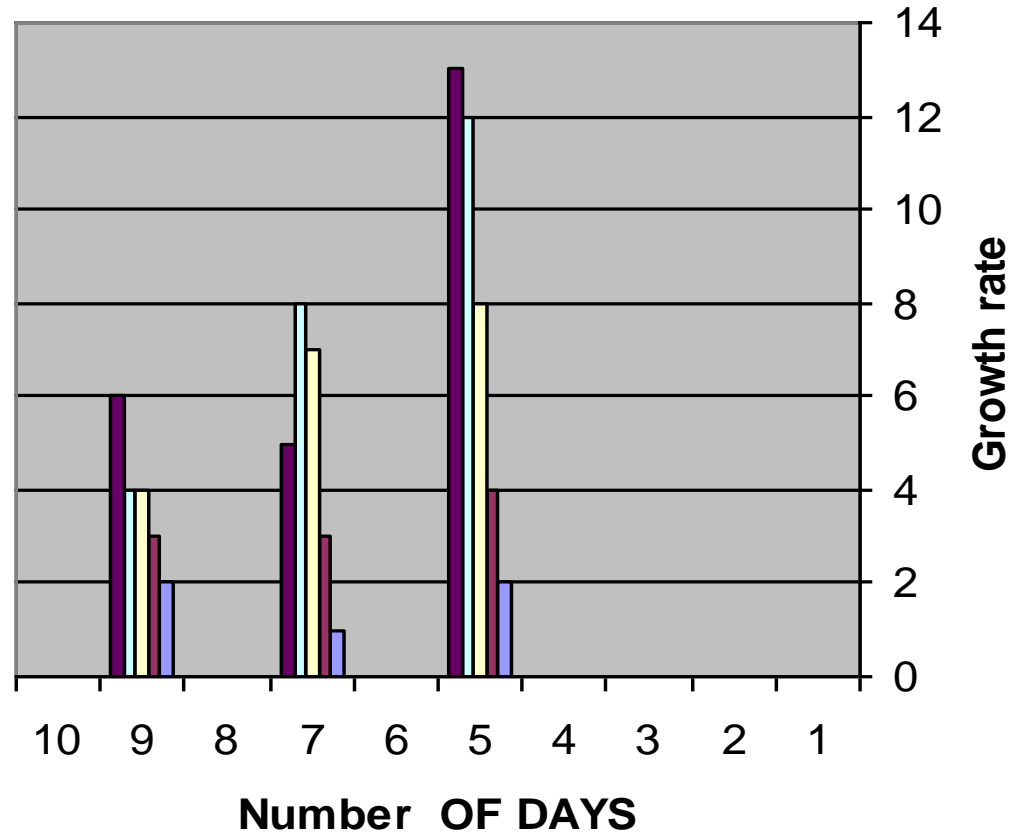
Time after growing	No of leaves					No of new leaves				
	3 days	6days	8days	12 days	15 days	3 days	6days	8days	12 days	15 days
Hydroponics						2	4	8	12	13
Hay						1	3	7	8	5
Ordinary						2	3	4	4	6

2- USING ADVANTAGES AND DIS ADVATAGES FORM

	Advantages	Disadvantages
Hydroponics	<ul style="list-style-type: none">• Saving water• Control nutrients• Good growth• Recycling	<ul style="list-style-type: none">•Leak of water•Know what nutrient suitable for plants
Hay	<ul style="list-style-type: none">• Control nutrients• Good growth• Recycling	<ul style="list-style-type: none">•Bad smell
Ordinary	<ul style="list-style-type: none">• Easy to use .	<ul style="list-style-type: none">•Cannot control nutrients

Graph

- No of new leaves 3 days
- No of new leaves 6days
- No of new leaves 8days
- No of new leaves 12 days
- No of new leaves 15 days



Interpret data

After we check the graph we see that Using hay and hydroponics as alternative soil will help plant to grow well (healthy)

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Conclusion

We can apply alternative soil in growing some plants . we can test the effect of adding (any element in plants and the effect of shortage of it)

References

1 – Qatar science Standards

2 – Science core book

3 – <http://www.simplyhydro.com/system.htm#WATER%20CULTURE>

4 – <http://www.hydroponics.com/>