

An effect of 110Hz to 523Hz sound vibrations on plant growth: An empirical study

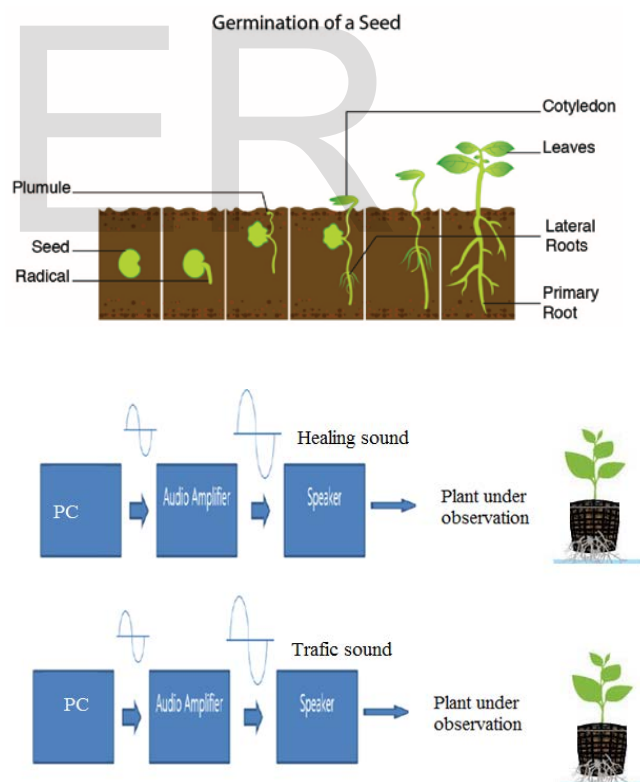
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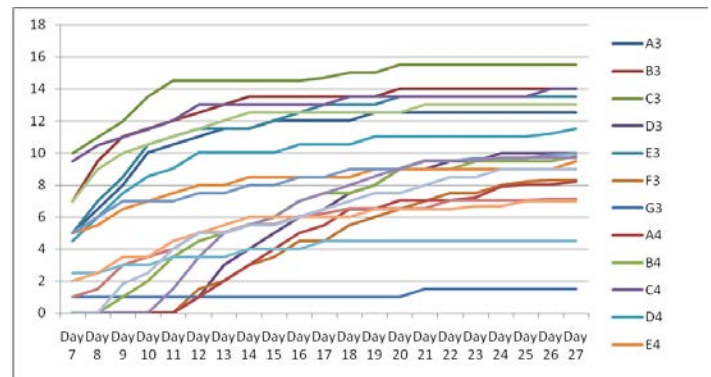
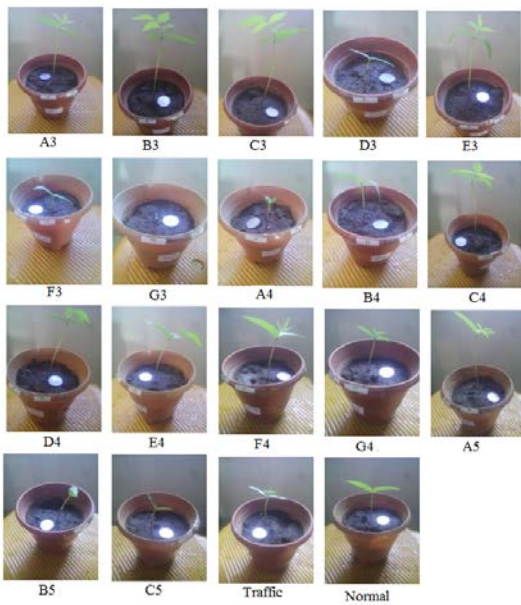
Abstract—There are around 7.4 billion people in the world. An agriculture industry is continuously serving for those people. Every year many engineers, Researchers and farmers are working hard to increase the productivity and quality of the agriculture products. Many researchers till now are working to find how many and what parameters are responsible for plant growth. As an outcome of their work different fertilizers, chemicals have been invented. Now a days these solutions themselves having their own hazards impact on plants as well as human life. Hence people are looking forward for the natural way to increase the productivity and quality of plants. I am strongly motivated by Dr. J.C.Bose's Experiments which proves Plants are also a living being and has emotions. My proposed research work is centered with a thought that plants are alive, have emotions, they respond to light, sound. And hence they have different responses to different sounds. We are attempting to find out those sound frequencies which will enhance plant growth for these we are giving A3(110Hz) to C5(523Hz) Musical notes (Healing Sounds) to First group of plants. Second group of plants are exposed to Traffic Sound. And Third Group of plants are placed in normal conditions. Different parameters such as height of plant, Appearance, Area of leaf, No. of leaves etc are measured. Area of leaf is calculated by using image processing technique.

Index Terms— Plant growth, healing sounds, musical notes, traffic sound, productivity, plants response, light, sound.

1 INTRODUCTION

Living pattern of modern world leads to many physiological and psychological problems and many researchers are working to find the solutions to them. Medical science proves that different meditation techniques, music therapy, sound healing processes are beneficial to remove stress, anxiety and fear. Indian culture is having many remarkable techniques to practice meditation during day to day life which is a low cost medicine. Healing sounds are used to guide a meditation and it has been proved by many researchers that healing sounds are beneficial during meditation. However Dr. J C Bose proved that plants are also having feelings. And hence such healing sounds must have some effect on their growth and development. We are going to analyze the effect of healing sound and traffic sound on plant growth. We are highly motivated by the thought that it is possible to enhance the plant growth and its productivity using healing sounds. Healing sounds have the medical properties. Plant dimension such as height of plant, leaf area, stem diameter, physical appearance etc. are the important parameters for deciding the quality of plant growth. We will make two sets of plants in which the first set will be exposed to the healing sound and another is to a traffic sound on regular intervals of time and the above mentioned parameters will be calculated and observed on the regular interval of time.





Days Vs Height of plant

CONCLUSION

From Above Graph it is observed that C3 Musical Note is having highest growth where as G3 Musical note has very poor growth in terms of height. Note D3, F3 and F4 took much more time to sprout than other notes. Traffic plant initially has a bad effect on leaves and its growth rate is less than that of Normal plant.

ACKNOWLEDGMENT

I give my sincere thanks Dr. Rajendra gode College of Engineering Amravati for providing the platform to work. I also thankful to my guide for their valuable guidance.

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Sr.no	Musical Note	Number of Branch	No of leaf	Height In cm	Diameter In mm
1	A3	2	8	12.5	3
2	B3	3	8	14	3
3	C3	3	8	15.5	3
4	D3	1	2	9	2
5	E3	2	8	13.5	3
6	F3	1	5	7	2
7	G3	2	3	1.5	2
8	A4	1	5	7	2
9	B4	1	5	9	2
10	C4	2	8	13.5	3
11	D4	2	8	11	3
12	E4	2	7	9	3
13	F4	2	8	9.5	3
14	G4	2	5	6.5	1
15	A5	2	5	13	3
16	B5	1	5	9.5	2
17	C5	1	5	4.5	2
18	Traffic	2	5	6.5	2
19	Normal	2	5	8	2