

Effect of sound frequencies of 500 Hz, 20 kHz and 75 kHz on the growth of green gram plants

Dharmathilaka J. A. D. M.^{*}, De Silva L. M. M. and Aponsu G. M. L. P.

Department of Physical Sciences & Technology, Sabaragamuwa University of Sri Lanka, Belihuloya 70140, Sri Lanka

Just like people, seeds of plants as well react to the feelings those they are been exposed to. Accordingly, modern technology has tended to apply auditory stress to different seeds of plant towards their enhancement of bioactivities. This project is intended to examine the growth of green gram when unconcealed to three different frequencies. Experiments have been conducted with three different sound frequencies 500 Hz, 20k Hz and 75 kHz covering the entire sound frequency range. Four samples each having four green grams were prepared. One sample was used as a control sample. The other samples were exposed to predetermined sound frequencies 500 Hz, 20k Hz and 75 kHz, separately for 48 hours. Audio Piezo Tweeters were used as a sound wave generator. Accordingly, the dilation of the root, stem and the leaves were recorded. It was detected that sound expose had a positive effect on the green grams germination as compared to the control group and also variant growth of the roots, stems and leaf were observed. The highest length of stem and leaves were measured for green grams sample which was exposed to 20 kHz frequency and the highest root length was recorded when the sample was exposed to 75 kHz frequency. As such, this research further reveals the effect of sound waves on the quickness of germination of green gram seeds and the effect of different frequencies on different parts of the growth plant such as root, stem, and leaf.

Keywords: Audio Piezo Tweeter, Auditory Stress, Bioactivities

**Corresponding author: dinesha.m09@gmail.com*