

Red and Blue Light Effects on *Homalothecium fulgescens*

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Abstract

Light has various effects on different organisms. It has functioned as a means to see an organism's surroundings, an aid in the development of an organism, cues to which direction an organism is heading, and even signal the right time for certain functions to occur. A specific light effect that plants are known to exhibit is the process of phototropism, which is the bending, either toward or away, of an organ in response to light. This process is mediated by red and blue light, using the photoreceptors phytochromes, which absorb red light, and cryptochromes and phototropins, which both absorb blue light. These specific wavelengths of light do not only affect phototropism, but they also affect the growth of plants. The effects of red and blue light on the moss *Homalothecium fulgescens* was investigated to see their effects (if any) on phototropism and on growth. Through a series of trials of extracting spores from the moss' capsules and growing them in a solid medium made of Knop's solution and agar for roughly 10 days each time, we were able to observe the effects of the different wavelengths. *H. fulgescens* seems to exhibit phototropism and had an increase in growth when exposed to red light, whereas the moss that was exposed to blue light had no growth and therefore could not be determined to exhibit any phototropic. Possible reasons as to why blue light had no growth were not extensively studied in this project. With that, we concluded that red light causes both phototropism and an increase in the growth of *H. fulgescens*, while blue light had no visual effect on the moss, which could be explained with further investigation.