

THE APPLICATION OF MELATONIN TO STIMULATE GROWTH IN MUNG BEANS

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Fertilizers are a necessary factor in maintaining the high level of agricultural production all over the world. In heavy use, however, fertilizers can cause harm to the environment including groundwater pollution and high soil acidity. As the human population increases and farm land is used more, the continued use of fertilizers will result in more damage to the environment, so it is important for new ways of assisting plant growth to be researched. Melatonin is a naturally occurring hormone in many plants (and animals) that has demonstrated potential as a growth stimulator since its presence was discovered in the developing stages of some plant species. In this study, the possible growth stimulating properties of melatonin were investigated, with the objective of finding out whether mung bean plants grown in water with a melatonin supplement would significantly outgrow those growing in water alone. The mung beans were grown in the same location under the same conditions, and every day of the ten day growth period the water and melatonin were replenished to their respective group of beans. The results of the study showed no significant increase in growth by the mung beans given melatonin, warranting a rejection of the research hypothesis. The experiment in this study examines short term effects with a single melatonin dosage, however, and further research over longer periods of growth and with different melatonin dosages is suggested.