How the Germination of Eschscholzia californica (California Poppy) and Phacelia campanularia (California Bluebell) When Subjected to Eucalyptol From Eucalyptus Trees Is Affected by Chicken Manure and Ammonium Plant Supplement

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Invasive eucalyptus trees kill native plants and promote the spread of wildfires throughout the state of California. To limit the growth of eucalyptus trees in ecosystems, it is suggested that eucalyptol be removed. The research question was "How do we nullify the allelopathic effects of eucalyptol on plants native to California?" In the experiment, eighty plants of two species native to California were planted indoors in a controlled environment. Since ammonium is a key component in a proven nullifier of eucalyptol, these plants were tested under various combinations of treatments of ammonium plant supplement, chicken manure, and eucalyptol. Ammonium supplement and eucalyptol groups were treated daily through pipette, and chicken manure groups were originally planted with the manure. Throughout the two week testing period, each plant's stem length, from the topsoil to the tip, were measured by hand and recorded onto a spreadsheet three times. Data from this test was extrapolated in a Monte Carlo Simulation to reduce error, and was organized into tables and charts, where patterns were identified. These patterns indicated that bluebells showed more growth when treated with manure, and poppies showed more growth when treated with ammonium supplement. Adding manure and ammonium supplement together promoted the best overall growth of poppies and bluebells when continuously exposed to eucalyptol. By introducing more biodiversity and competition back into an ecosystem, there will be fewer eucalyptus trees, and in turn, the spread of wildfires in California will be slowed.

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