Organic vs. Synthetic Herbicides

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In my science fair experiment, I will be testing different herbicides' effects on invasive weeds. For this experiment, I will be growing four euphorbia lathyris weeds. One plant will be my control and won't come into contact with any herbicide. One plant will be sprayed with an organic herbicide of my own making using household vinegar, dish soap, and salt. The other two will be sprayed with garden herbicides, one a post-emergent (synthetic), and the other citrus-based (organic). At the end of my experiment, I will de-pot my plants, do a soil pH test, and analyze any root damage. If the active ingredients of a herbicide are linked to its effectiveness, then a herbicide with a stronger chemical will be more effective and will act upon a plant sooner. First, re-pot 4 weed plants. Second, water plants once a week, or as necessary. Third, make a natural herbicide blend using salt, vinegar, and dish soap. Fourth, measure H2 concentrate. Fifth, take plants to a different location for application. Sixth, monitor plants daily based on their appearance. Seventh, take a soil sample from each of the pots and add them to water to test their pH. I collected data by compiling my visual observations in a chart. Visually, I noticed results on all of the plants four days after the initial herbicide application. The herbicide with the stronger chemical was H2, but it didn’t give results sooner than the others. In this experiment, I also tested the pH of my herbicides and potting soil. When I took the pH of the chemicals, I found that H1 had a pH of 2, H2 had a pH of 8, and H3 had a pH of 6. When I took the pH test of my soils, they were all at a pH level of 5. I concluded that my hypothesis was incorrect. All my herbicides were effective in killing the weeds they were applied to.

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