The Effects of Increasing Temperature on Plant Development and Nutritional Content

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This experiment focuses on the effect that increasing temperature has on plant development and nutritional content. By using Wisconsin Fast Plant Astro Plants and Broccoli Microgreens grown in a growth chamber in two conditions, warmer and cooler climates, we tested temperature's effects on germination, growth, pollination and seed production, dry mass, and antioxidants. The heights of both types of plants were measured every few days, while the Astro Plants were pollinated and allowed to develop and the Broccoli Microgreens were cut and dried, titrated with iodine, and run through a spectrophotometric analysis. Shapiro-wilk tests were run to determine whether there was normal distribution of height, seeds, and dry mass in both conditions. Wilcoxon Rank Sum tests were then run on Astro Plant and Broccoli Microgreen height, along with a Bartlett's and pooled t-test on total and dry mass of Broccoli Microgreens. Differences in growth and mass were established, along with trends in antioxidant concentrations and absorbance vs. wavelength.