

Comparing Two Model Plants for Use in an Introductory Biology Course: Wisconsin Fast Plants® and Poinsettia Hot Peppers

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Recently, we restructured our first-year introductory biology course into six modules. The focus of one of these modules is to understand plants at the organismal level. To achieve this goal in a context that is relevant to our students' futures, we specifically ask, "How will plants respond to elevated CO₂?" Then, over the course of four weeks, we analyze stomatal density (week 1), photosynthetic/respiratory rates (week 2), foliar protein concentrations (week 3), and growth/resource allocation (week 4) of plants grown in high (800 ppm) and low (400 ppm) concentrations of CO₂. During the first two offerings of the course we used *Brassica rapa*, Wisconsin Fast Plants®, as our model plant, but this past year used *Capsicum annuum* 'Poinsettia.' Here we compare the ease, cost, time, experimental results, and student/instructor feedback of these two plants in our introductory biology laboratory curriculum. There are positive and negative attributes regarding use of each species as our model plant. Peppers require longer growth periods, more care, and more space per plant. However, we prefer peppers to Fast Plants® because of their larger size, increased leaf area for experimentation, reduced cost of seeds and growing supplies, statistically significant experimental results, and more enthusiastic response of our students and instructors.

Keywords: poinsettia hot peppers, *Capsicum annuum*, Wisconsin Fast Plants®, plant lab exercises, stomatal density, photosynthetic rate, foliar protein concentration

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