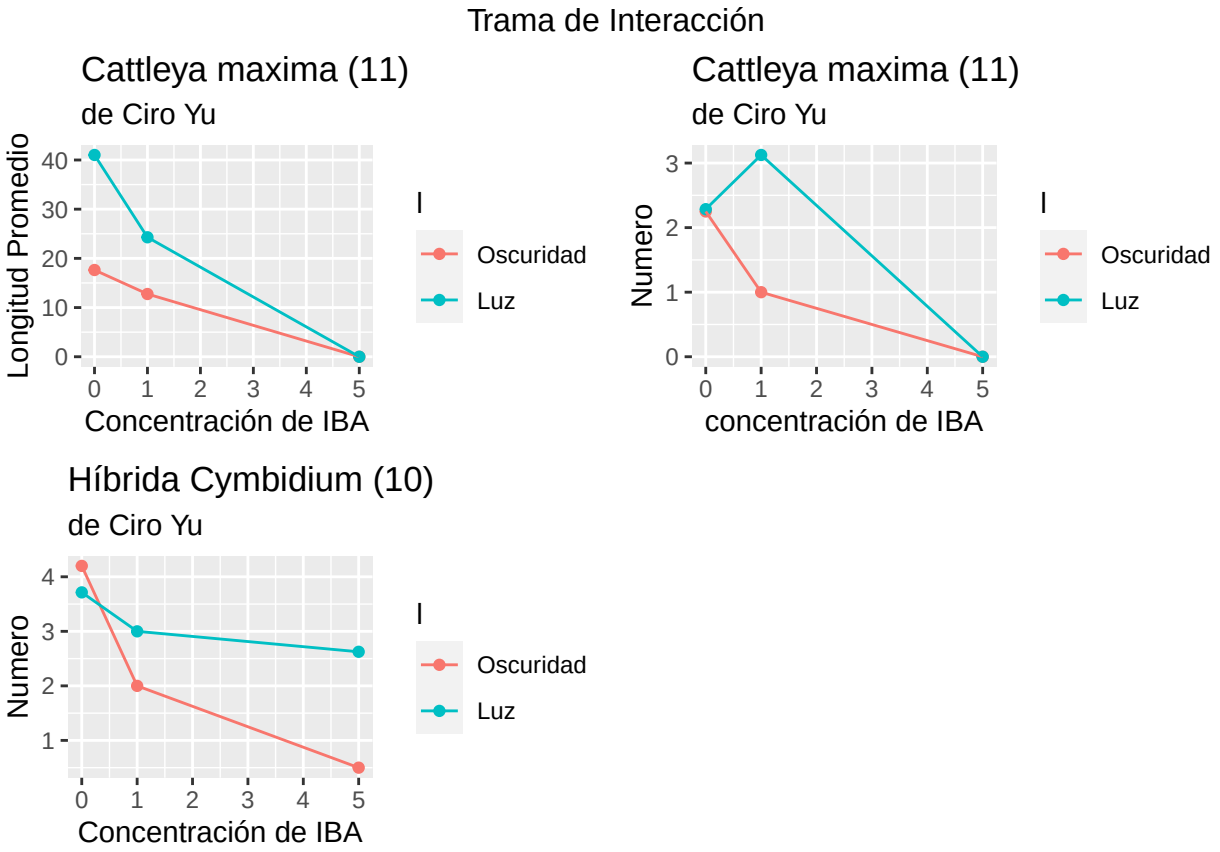
áéóúñ Our Experiment found that higher levels of IBA decreased root number per plant for the *Cymbidium* hybrid and for *Cattleya maxima*, and decreased average root length for *Cattleya maxima*. Meanwhile, growing the plants in light increased average root length for *Catteleya maxima*. When used in conjunction, light and higher IBA concentrations increased root number for the *Cymbidium* hybrid, but decreased average root length for *Cattleya maxima*. Interaction plots for the significant analyses are provided below.



The consistent findings of a negative effect of IBA on our 2 parameters of rooting goes against our initial hypothesis, but is understandable. This is because while IBA is used to imitate rooting, previous studies have shown that it inhibits root elongation and maturation at high concentrations. Our concentrations, ranging from 1 to 5 mg/L, were thus likely too high to have a beneficial effect on our orchids.

The relative inconsistent results for light from our analysis indicate that there is more variation on effect of light on rooting than predicted for our hypothesis. However, in line with our hypothesis, adding light had either a neutral or beneficial effect on rooting for the orchids. Additionally, rooting is only a component of orchid health and suitability for deflasking. Pictures taken during the experiment consistently showed an increase in chlorophyll and leaf thickness for the orchids grown under light, though this was not quantified. For epiphytic orchids, these traits are beneficial for surviablity of orchids undergoing deflasking. Thus, future research migh focus on these traits.

The experimental analysis for this trial suffered from 2 major flaws. Firstly, when data was collected, the flask that each orchids originated from was not recorded. This is a problem because the orchids grown in a single flask are going to be exposed to a far more consistent set of environmental conditions, and are thus not fully independent. Another problem arose in the *Cattleya maxima* root length data. Because none of the 5 mg/L IBA treatments rooted, the data was enriched with a large number of zeros. Thus, none of the assumptions for Homoscedasticity or Normality held, so the subsequent analysis is somewhat suspect.

Thus in general, as high IBA concentrations consistently decreased both root length and root number, and light either increased or improve root length and number at the p4 formulation, I would suggest growing

orchids in p4 medium with exposure to light to best encourage rooting an readiness for deflasking.