Are Plant Growth Regulators Always Effective When Treating Wheat?

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For my experiment, I wanted to see if the Plant Growth Regulators (PGRs) that farmers treat their crops with are effective and worth the investment. To test this, I treated wheat with two different types of PGRs and compared it to a control. My hypothesis was that both Regulator A and Regulator B will show a significant difference compared to the control in terms of weight in the root and shoot, height, germination, and health. Between the two regulators, I think Regulator A will be the most effective because it is known to increase the weight, enhance germination, and have a uniform stand. While Regulator B only contains Gibberellic Acid as it's active ingredient, which is known for an increase in growth and to having a higher tolerance to drought stress. For my procedure, I treated the wheat with the PGRs and let the wheat grow for a month in a germination chamber. For each Regulator and control, there were five replications with six pots in each, making a total of thirty pots for each. After the month, I terminated my experiment by taking the plant out of the soil. Both fresh and dry weights were taken of the roots and shoots to calculate the statistical differences. My results for the health, height, and the rate of germination showed no statistical difference that could be proven. The only weight that showed a statistical difference was the dry root weight of Regulator A and the dry shoot weight for Regulator A wasn't too far off. Although, the difference was not close enough to prove that Regulator A is effective in areas of weight in the roots and shoots. My conclusion shows that from this experiment there wasn't enough statistical difference proving Plant Growth Regulators are effective when treating wheat; thus using these PGRs are a loss of profit.

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