Analyzing the Effect of Tomato Variety and Maturity Date on Yield

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According to the World Resources Institute, by 2050 the human population could reach 9.6 billion, creating potential food security and availability issues throughout the world. Tomatoes are a highly nutritious, high yielding, and common produce with potential to be a locally grown solution to help solve this potential crisis. Since the growing season length and the tomato variety planted can affect yields, this experiment investigated the influence these factors have on yield. Five different tomato varieties were planted - two hybrids and three heirlooms. During the growing season, the tomatoes' yield, by count and weight, was calculated based on time from their maturity date. The data showed that the two hybrids significantly out-produced the heirlooms. However, a longer growing season was needed for the hybrids to reach this yield vs. the heirlooms. In addition, high temperatures had a larger negative effect on the hybrids' yield vs. the heirlooms'. Spoilage rate, a major problem in underdeveloped countries, was also less in the Celebrity hybrid vs. the heirlooms. Finally, most heirlooms tended to reach maximum yield closer to the maturity date as compared to the hybrids. The results suggest that hybrids with their higher yields and less spoilage are a better choice for tomato farmers. Monolithic plantings of the same variety may increase the risk of crop failure due to disease, drought, or frost. Therefore, heirlooms should continue to be monitored for positive traits that might be incorporated into newer hybrid types to increase heat tolerance and shorten their growing season.

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