A Genetic Conundrum: Evaluation of a Wheat Breeding Selection Program

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Background

Wheat needs to be bred with herbicide resistance. The presence of weeds encroaches upon and competes with wheat, thus lowering productivity.

Development of Herbicide-Resistant Wheat through the Use of Conventional Breeding

Methods

Objective

Although the headrows should show very miniscule amounts of damage by herbicide, a significant number of plants appeared to be damaged after application. This means that many of the plants did not have the anticipated resistance. The purpose of this study is to perform a statistical comparison of the projected resistance versus the observed resistance of wheat in headrows.

Results

Healthy

Visual inspection of herbicide resistant headrows. Thirty populations given a score of healthy or stunted/damaged.

Stunted/Damaged

Perform a χ² analysis

Conclusion

The results demonstrate that there is a significant (p ≤ 0.01) discrepancy between the anticipated resistance of the headrows and what has been observed. These results suggest that there may be a need to improve selection methods for herbicide resistant wheat.

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