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**Leveraging Genetic Innovation
for Resilient African Food Systems
in the wake of Global Shocks**

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Testing a New Fungicide as Alternative to the Banned Chemicals from Different Countries

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Abstract

Since 2018 the European Union and many other countries decided to ban selling and using many pesticides which contain the two molecules Thiram and Thiamethoxam. This study is objective to test a new formulation of fungicide as an alternative to Celest top and Vitavax which are the most used chemicals to treat the seed-borne diseases.

The common bunt is one of the most widespread seedborne diseases and causes losses in grain yield and quality. It is caused by two very closely related fungi, *Tilletia tritici* (syn. *Tilletia caries*) and *T. laevis* (syn. *T. foetida*).

This research focused on comparing the fungicide activity of this new formulation against the common bunt as well as their impact on crop development and yield.

The research was conducted using both in vivo and in vitro methods, utilizing bread wheat varieties (Faiza and Najia) and durum wheat varieties (Faraj and Jabal) from Morocco. The results demonstrated that tested formulation exhibited a significant efficacy against Common bunt, achieving a 100% success rate compared to Celest Top showed an efficacy of 99.67%. Furthermore, the tested fungicide outperformed Celest Top across all evaluated parameters related to growth and yield.

Regarding the durum wheat varieties, Faraj displayed higher susceptibility to Common bunt, with a greater percentage of decayed seeds (3.79%), while Jabal exhibited a slightly lower percentage (2.70%) within the positive control group. No visible infections were observed in the inoculated bread wheat control, confirming the higher susceptibility of durum wheat to Common bunt. Additionally, the results indicated a greater predominance of *Tilletia Foetida* spores in both durum and bread wheat varieties within the positive control group.
