

1st Farmer Harvest of TELA Maize in Nigeria:

Enhancing Farm Level Yield and Revenues

February 2025

Context

In January 2024, the government of Nigeria released four (4) TELA maize hybrids (SAMMAZ 72T, SAMMAZ 73T, SAMMAZ 74T and SAMMAZ 75T) for commercialization. These hybrids offer exceptional benefits, including resistance to fall armyworm (FAW), stemborers and are drought tolerant.

This triple protection assures farmers of a significant yield advantage during low-rainfall seasons while also saving farmers the cost of chemical pesticide sprays. During the 2024 wet season, a study was conducted to assess the benefits of one variety, SAMMAZ 75T, among Nigerian farmers across four major maize-growing agroecologies.



A study was conducted across the agroecologies including, Derived Savannah (Oyo State), the Northern Guinea Savannah (Kaduna State), the Southern Guinea Savannah (Abuja Federal Capital Territory (FCT), Nasarawa, and Niger States), and the Sudan Savannah (Kano State) agroecologies. Data from 134 plots (94 TELA maize and 40 non-TELA maize plots) was collected from a sample of farmers including commercial farmers that had accessed

SAMMAZ 75T. Crop-cutting yield estimation methods, partial budgeting, and thematic analysis techniques were employed. This brief presents data on the performance of the drought-tolerant and insect-resistant TELA maize hybrid, cultivated by a pioneering group of farmers across these agroecological zones.



1.0 Maize Yield: TELA Maize in Comparison with Non-TELA Maize Varieties

TELA maize had an overall mean yield of 5.9 MT/ha (Figure 1). In contrast, non-TELA maize varieties had a mean yield of 3.11 mt/ha. **This gave an 88% yield advantage of TELA hybrids relative to non-TELA maize varieties.** The composition of the non-TELA maize varieties for comparison was 63% hybrid maize.

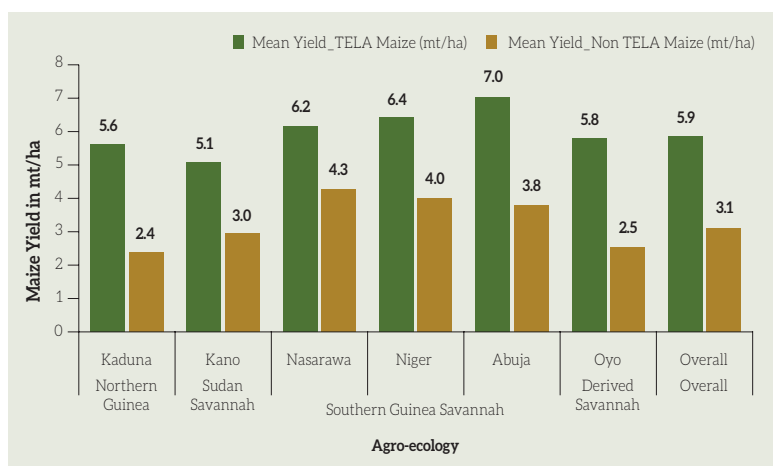
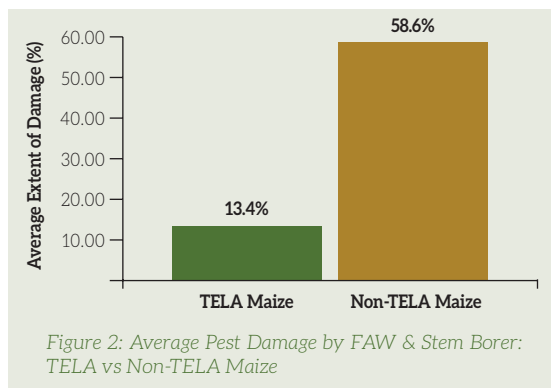


Figure 1: Yield Comparison between TELA Maize and non-TELA Maize varieties in the 2024 wet season



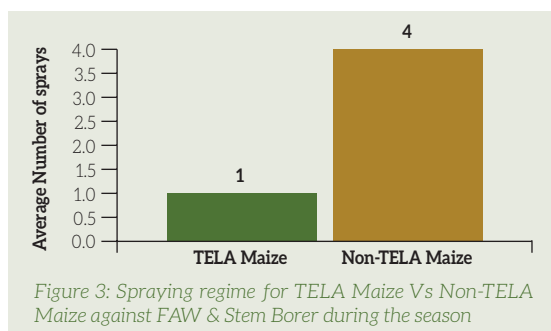
2.0 Extent of Crop Damage and Frequency of Chemical Sprays: TELA vs Non-TELA Maize Varieties

TELA maize plots experienced significantly lower damage from Fall Armyworm (FAW) and Stem Borers compared to non-TELA maize, as reported by farmers. On average, TELA maize plots recorded only **13.4% damage**, while **non-TELA maize plots experienced 58.6% damage** (Figure 2). This indicates that TELA maize remained largely protected against FAW and Stem Borers, whereas non-TELA maize suffered severe pest impact. The 45-percentage point difference highlights the effectiveness of TELA maize in protecting against these pests.



3.0 Frequency of Chemical Sprays: TELA vs Non-TELA Maize Varieties

Comparing spraying regimes, 82% of farmers growing TELA maize who reported spraying did so only once, whereas those cultivating non-TELA varieties applied pesticides an average of four times (Figure 3). This demonstrates the potential economic benefits of TELA maize, including reduced pesticide use and associated costs, lower labour requirements, and environmental sustainability and farmer health.



4.0 Maize Revenue: TELA Maize Net Revenue in Comparison with Non-TELA Maize Varieties

TELA maize farmers achieved a 137% higher net revenue compared to non-TELA maize farmers. This was driven by higher yields and reduced spraying costs. The net revenue was determined using a partial budgeting approach, by subtracting total variable costs (TVC)—including seed, fertilizer, pesticides, herbicides, and labour costs—from total revenue (TR).

5.0 Farmer Experience

A thematic analysis of farmers' experience with TELA Maize varieties highlighted several positive sentiments including:

- "Good Drought Tolerance"
- "The performance is very good, despite planting late coupled with drought spell, it performed very well".
- "It is a unique variety that is distinct from others. It resisted disease and tolerated drought for about 45 days."
- "Good Performance"
- "Excellent despite the shortage of rainfall by 15 days."
- "Despite little rain, the hybrid maize showed promising vegetative state despite the prolonged drought spells and the scorching heat"

Conclusions

To ensure the long-term commercialization and widespread adoption of TELA maize in Nigeria, we therefore need:



Increased investment from seed companies to produce and distribute TELA hybrids, ensuring a sustainable and reliable seed supply.



Stronger stakeholder support for TELA Maize as a vital technology to enhance food security



Enhanced farmer awareness and accessibility to TELA maize seeds, driving adoption, higher yields, and increased farm revenues.

This study was undertaken under the auspices of the **Biotech Maize Seed System project**, a project coordinated by **AATF**. This study assessed maize farmers who were selected based on prior participation in an insect-resistant management study for TELA maize.

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