TELA Maize Enhancing Farm-Level Yield and Revenues: Case Study of Babban Gona Farmers, Nigeria

February 2025

Context

In January 2024, the government of Nigeria released four TELA maize hybrids (SAMMAZ 72T, SAMMAZ 73T, SAMMAZ 74T and SAMMAZ 75T) for commercialization. These hybrids offer exceptional benefits, including drought-tolerance and resistance to fall armyworms (FAW) and stemborers. This triple protection assures farmers of a significant yield advantage during low-rainfall seasons while also saving farmers the cost of chemical pesticide sprays. Prior to the 2024 planting season, 133 farmers cooperating with the Babban Gona support program were provided TELA seeds to plant in their fields adjacent to plots planted with conventional maize seeds to assess performance differences under real world conditions. Their yields and results were measured through a survey at harvest time. This brief presents key findings from the study.

1. Maize Yield: TELA Maize in Comparison with Non-TELA Maize Varieties

TELA maize plots recorded higher yields compared with non-TELA maize plots, with a yield advantage of 54%. Specifically, TELA plots recorded a mean yield of 5.1 mt/ha while non-TELA maize plots recorded a mean yield of 3.3 mt/ha. (Figure 1). The composition of the non-TELA maize variety grown was primarily SAMMAZ 15, an Open-Pollinated Variety (OPV), grown by 86% of the study farmers.

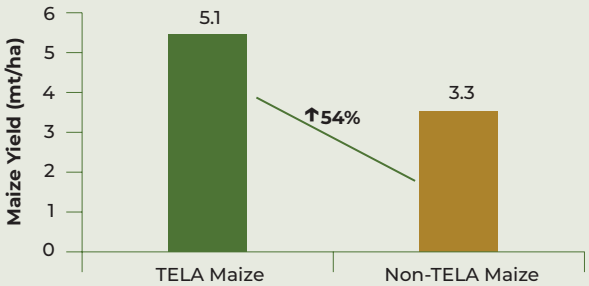


Figure 1: Box Plot showing Maize Yield between TELA Maize plots and Non-TELA Maize plots

2. Maize Revenue: TELA Maize Revenue in Comparison with Non-TELA Maize

TELA maize plots recorded a higher total revenue of 54% (3,160,890 Naira per hectare versus 2,049,300 Naira per hectare on non-TELA maize plots). This difference corresponded with higher yields on TELA (5.1 tons/ha) relative to non-TELA maize plots (3.3 tons/ha). The revenue advantage is attributed to higher yields and reduced pest infestation.

	TELA Maize Plots	Non-TELA Maize Plots
Yield (tons/ha)	5.1	3.3
Average price per ton (Current Market Price)	621,000.00	621,000.00
Total Revenue (Naira)	3,160,890.00	2,049,300.00
Total Revenue (USD)	2,098	1,360

[1]Exchange rate of USD to Naira = 1,506 Naira

3. Extent of Crop Damage: TELA versus Non-TELA Maize

Fewer farmers, 26 (22%) indicated they observed pest infestation (FAW and/or Stem Borer) on their TELA maize plots compared to 103 farmers (86%) who observed infestation in their non-TELA maize plots. Further, farmers reported **significantly lower crop damage on TELA Maize at 15.3%, compared with 51.4% on Non-TELA Maize** (Figure 2).

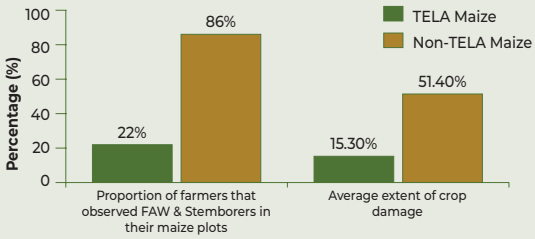


Figure 2: Comparison of Pest Incidence and Crop Damage Between TELA and Non-TELA Maize Farmers

4. Frequency of Chemical Sprays: TELA Maize Versus Non-TELA Maize

On average, non-TELA maize plots were sprayed 2.1 times, while TELA maize plots averaged 1.3 sprays during the season against FAW & stemborers pests (Figure 3). Note: Spraying decisions were made at farmers' discretion based on observed pest infestation. TELA maize, therefore, demonstrates potential economic advantages, including reduced pesticide use, lower input costs, decreased labour requirements, and environmental sustainability and farmer health.

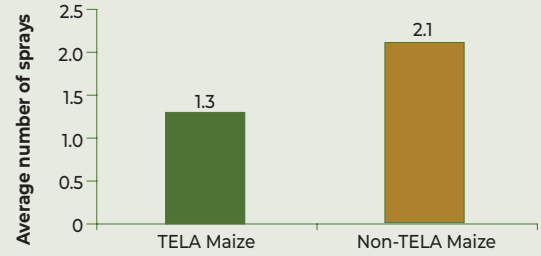
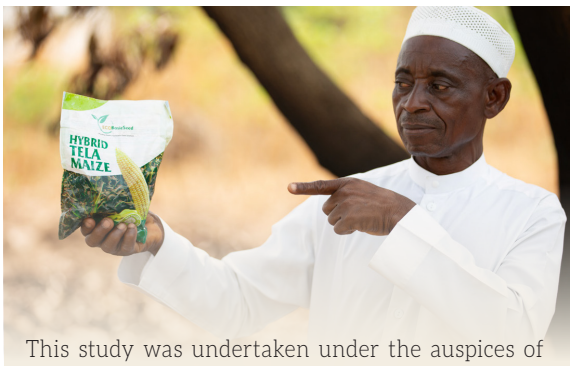


Figure 3: Average number of sprays of TELA maize Vs Non-TELA Maize plots

5. Farmer Experience

- Many farmers noted that the TELA seed offered "faster and more uniform germination that other seed" and expressed appreciation for its rapid growth.
- A notable advantage was its resistance to pests and diseases, which reduced the need for pest control measures, saving time, cost and effort.
- A few highlighted reduced labour requirements due to its low crop damage because of FAW and stem borers, fewer sprays and lower pesticide needs.
- Overall, from thematic analysis, about 90% of respondents expressed positive sentiments showing that the farmers had a good experience from planting TELA maize (SAMMAZ 75T).

To maximize these benefits, further efforts are needed to support the long-term commercialization.



This study was undertaken under the auspices of the **Biotech Maize Seed System project**, coordinated by **AATF**. The study employed on-farm comparative design with an observational component and the results presents one season data from the farmers. Management of the plots and data collection was done by **Babban Gona team**.

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