2024 Bergville CA trial Xylem plot lay out

Introduction

This report provides detailed insights into the participation of farmers who volunteered to conduct trials on Xylem maize and PAN 53 as part of their Conservation Agriculture (CA) initiatives. The primary objective of the trials is to compare the performance of organic fertilizer and MAP (Monoammonium Phosphate) fertilizer.

The trials are designed as block or strip layouts, with farmers selecting their preferred arrangement and seed variety for each plot or strip. Each trial spans an area of 1,000 square meters, divided equally: 500 square meters allocated to Xylem maize and the remaining 500 square meters to PAN 53.

All plots are planted using white maize varieties. Farmers were given the freedom to choose their preferred variety within the Xylem selection, ensuring representation of all varieties across the six participating villages.

The picture above showing Nelisiwe and Nondumiso at Stulwane receiving xylem and pan 53 inputs

Xylem

Green-Shaded Layout for Organic Fertilizer Trials

In the layout below, the green-shaded areas represent plots allocated for organic fertilizer trials. These areas were planted with one of the following maize varieties: CAP 341NG, NEVADA, or NELISONS CHOICE. Each farmer received 1 kg of their chosen maize variety to plant in half of the trial layout using organic fertilizer, POP-UP, and Seabrex.

For the 18 participants listed, each was provided with:

- **1 bag** of organic fertilizer
- **1 bottle** of Seabrex
- **1 bottle** of POP-UP
- **2 bottles** of Amino NPK

Planting Procedure

1. **Preparation of the Organic Plot:**
    - The entire plot was sprayed with a mixture of 8 ml POP-UP and Seabrex in 16 litters of water.
    - Organic fertilizer was applied at a rate of 15 grams (1 spoon) per planting hole.
2. **Planting Process:**
    - A small layer of soil was used to cover the applied fertilizer.
    - Two maize seeds were then placed in each planting hole.

The green-shaded areas in the layout were planted following this process above.

The picture above showing Xylem organic fertilizer and sprayed in hole in 500msq and second showing MAP applied on the other half of a 1000msq

PAN 53

The PAN 53 variety was included in the Conservation Agriculture (CA) trials, continuing the approach we have implemented in previous seasons. In the layout below, the white or unshaded areas represent plots allocated for the PAN 53 variety. This portion, combined with the Xylem trials, forms a total area of 1,000 square meters per trial.

Farmer Inputs

For the PAN 53, each farmer received:

- **1 kg** of PAN 53 maize seed
- **15 kg** of MAP (Monoammonium Phosphate) fertilizer

Planting Process

1. **Application of MAP Fertilizer:**
    - MAP was applied to each planting hole using the lid of a juice bottle as a measuring tool for micro-dosing.
2. **Seed Placement:**
    - Two maize seeds were planted in each hole, ensuring they were positioned at a safe distance from the fertilizer to prevent seed damage due to fertilizer burn.

    This planting process was followed across all plots allocated for the PAN 53 variety.

Trial Seeds Planted

Farmers planted white maize varieties exclusively, as explained earlier. In addition, some plots were intercropped with other crops, as indicated in the layout (e.g., M + B for Maize and Beans, or M + Cp for Maize and Cowpeas).

To complete the 1,000 square meter area for the Xylem and PAN 53 CA trials, each farmer received a seed package containing:

- **Maize (M)**
- **Summer Cover Crops (SCC)**
- **Cowpeas (Cp)**
- **Pumpkins (Pk)**
- **Beans (B)**

These crops were utilized in various combinations to ensure full utilization of the trial plots while promoting crop diversity and soil health through intercropping.

Table below showing the list of farmers who planted xylem CA trails 1000msq and their location

Name and surname	GPS point	Trial shape	Variety
1. Sthabiso Manyathi	28.860432,29.367605	Strips	CAP 341ng
2. Nomavila Ndaba	28.865870,29.395037	Strips	Nelson choice
3. Phumelele Hlongwane	28.863539,29.390580	Blocks	Nevada
4. Zodwa Zikode	28.867149,29.389047	Strips	CAP 341ng
5. Nombono Zikode	28.867132,29.389050	Blocks	CAP 341ng
6. Mantombi Mabizela	28.863450,29.396400	Blocks	Nelson choice
7. Sbongile Mpulo	28.877463,29.412771	Blocks	Nevada
8. Balindile Makhathini	28.897794,29.401149	Strips	CAP 341ng
9. Nelisiwe Msele	28.911510,29.375524	Blocks	Nelson choice
10. Nothile Zondi	28.922945,29.366795	Blocks	CAP 341mg
11. Nondumiso Zondo	28.916950,29.372163	Blocks	CAP 341ng
12. Khulekani Dladla	28.926723,29.371978	Blocks	CAP 341ng
13. Thulani Buthelezi	28.923452,29.375582	Blocks	Nevada
14. Bukiwe Mlambo	28.87883,29.382584	Strips	Nevada
15. Lungile Dladla	28.87541,29.381027	Strips	Nelson choice
16. Bongani Hadebe	28.881805,29.377720	Strips	CAP 341ng
17. Buyisiwe Hlongwane	28.894222,29.368174	Blocks	CAP 341ng
18. Phumzile Nyoka	28.895233,29.368117	Strips	Nevada

1. **Thulani Buthelezi at Stulwane**

1. SCC	2. M	3. M + PK	4. M + B	5. M + CP
6. SCC	7. M	8. M + PK	9. M + B	10. M + CP

2. **Balindile Makhathini at Vimbukhalo**

1. SCC	SCC
2. M	M
3. M + pk	M+PK
4. M+ B	M+B
5. M	M
6. M+ CP	M+CP
7. SCC	SCC
8. M+ CP	M+CP

3. **Nondumiso Zondo at Stulwane**

1.SCC	2.M	3.M +PK	4.M+B	5.M+CP	6.SCC	7.M	8.M+PK	9.M+B	10.M+CP

4. **Nothile Zondi at Stulwane**

1.M+PK	2.SCC	3.M+B	4.SCC	5.M+CP	6.M+PK	7.SCC	8.M+B	9.SCC	10.M+CP

5. Khulekani Dladla at Stulwane

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP	6.SCC	7.M	8.M+PK	9.M+B	10.M+CP

6. Nelisiwe Msele at Stulwane

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP
6.SCC	7. M	8. M+PC	9.M+B	10.M+CP

7. Buyisiwe Hlongwane at Madakaneni

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP
6.SCC	7.M	8.M+PK	9.M+B	10.M+CP

8. Phumzile Nyoka at Madakaneni

1.SCC	SCC
2.M	M
3.M+PK	M+PK
4.M+B	M+B
5.M+CP	M+CP
6.SCC	SCC
7.M	M
8.M+PK	M+PK
9.M+B	M+B

9. Phumelele Hlongwane at Ezibomnvini

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP
10.SCC	9.M	8.M+PK	7.M+B	6.M+CP

10. Zodwa Zikode at Ezibomnvini

1.SCC	SCC
2.M	M
3.M+PK	M+PK
4.M+B	M+B
5.M+CP	M+CP
6.SCC	SCC
7.M	M
8.M+PK	M+PK
9.M+CP	M+CP

11. Nombono Zikode at Ezibomnvini

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP
10.SCC	9.M	8.M+PK	7.M+B	6.M+CP

12. Mantonbi Mabizela at Ezibomnvini

1.SCC	2.M	3.M+PK	4.M+B	5.M+CP
6.SCC	7.M	8.M+PK	9.M+B	10.M+CP

13. Sthabiso Manyathi at Eqeleni

1.M+B	M+B
2.M	M
3.M+PK	M+PK
4.SCC	SCC
5.M+CP	M+CP
6.M	M
7.M+PK	M+PK
8.M+B	M+B

14. Nomavila Ndaba at Eqeleni

1.M+B	M+B
2.M	M
3.M+PK	M+PK
4.SCC	SCC
5.M+CP	M+CP
6.M	M
7.SCC	SCC
8.M+CP	M+CP

15. Bukiwe Mlambo at Emajwetha

1.M	M
2.M+B	M+B
3.SCC	SCC
4.M	M
5.M+CP	M+CP
6.SCC	SCC
7.M	M
8.M+B	M+B
9.M+PK	M+PK

16. Lungile Dladla at Emajwetha

1.SCC	SCC
2.M	M
3.M+PK	M+PK
4.M+B	M+B
5.M+CP	M+CP
6.SCC	SCC
7.M	M

8.M+PK	M+PK
8.M+B	M+B

17. Bongani Hadebe at Emajwetha

1.SCC	SCC
2.M	M
3.M+PK	M+PK
4.M+B	M+B
5.M+CP	M+CP
6.SCC	SCC
7.M	M
8.M+PK	M+PK
8.M+B	M+B

18. Sbongile Mpulo at Vimbukhalo

10.SCC	9.M	8.M+PK	7.M+B	6.M+PC	5.M+CP
1.SCC	2.M	3.M+PK	4.M+B		

The picture above showing using pegs measuring the plots and farmers planting