



## PROGRESSIVE TRIAL REPORT

**EFFICACY OF AGRI TIGER, OM3 AND BIO ELITE (Zn Mn) IN LOWERING  
SOIL SALINITY, INCREASING SOIL ORGANIC MATTER AND INCREASING  
YIELD ON ASTER (*Callistephus chinensis*)**

**KS FARM (SALGAA, NAKURU)**

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# AGRI TIGER

- It is a biological fertilizer that improves plant uptake of soil bound nutrients and increases soil microbiome thus enhancing the genetic expression of the plant.
- Agri Tiger works on silicates solving the soil salinity problem.
- It contains microorganisms living cells, which when applied to seed, plant surfaces or soil, colonizes the rhizosphere or the interior of the plant and promotes growth by increasing the availability of primary nutrients to the plant.

# Benefits of Agri Tiger

1. Helps plants growing in high salinity soils.
2. Improves nutrient efficiency and uptake of applied nutrients in all soil types.
3. Helps release micro and macro elements from its insoluble form in soil.
4. Reduces impact of high soil EC on plant growth.
5. Improves root development.

# OM3

- OM3 is a complete and concentrated biological activator comprising of activated humic acids, marine plant and fish extracts.
- OM3 increases soil organic matter and beneficial micro flora.
- It has humic acids for enhanced nutrient uptake, plant growth and soil health.
- It has a high auxin ratio thus stimulates root development.
- OM3 enhances utilisation of crop applied mineral nutrients/fertilisers.
- OM3 improves the CEC of soil to enhance nutrient availability and reduce leaching and loss of nutrients.
- OM3 provides high level amino acids that enhances plant energy levels and improves growth and yields. Also supports plant stress tolerance.

# BIO ELITE (Zn Mn)

- Bio Elite (Zn Mn) contains a fractionally selected set of naturally-derived phytoactive carbon compounds.
- The compounds in Bio Elite (Zn Mn) enter the plant cells and triggers pattern recognition receptors which affects several biochemical pathways and enhances gene expression, also regulating the way these genes are converted to proteins.

# BENEFITS OF BIO ELITE (Zn Mn)

Bio Elite (Zn Mn) helps in bio enhancement of:

1. The 5 plant hormones (Auxin, Gibberellin, Cytokinin, Ethylene and Absciscic acid) for yield increase.
2. Nutrients and minerals movement within the plants for optimized growth.
3. Plant respiration rates via mitochondrial activation.
4. Many plant defense related genes.
5. Resistance to biotic (such as fungi, bacteria and insects) and abiotic (such as cold, drought, salts and heavy metals) stress factors.
6. Plant respiration rates via mitochondrial activation.

# OBJECTIVES OF THE TRIAL

The main objective was to:

- Evaluate the effectiveness of Agri Tiger in reducing soil salinity.
- Evaluate the efficacy of OM3 in improving soil organic matter and yield in Aster.
- Evaluate the efficacy of Bio Elite (Zn Mn) as a bio-enhancer for increasing yield in Aster.

The specific objectives were to:

- Determine phytotoxicity of Agri Tiger, OM3 and Bio Elite (Zn Mn) on Aster.

# TREATMENT APPLICATION DETAILS

Products	Agri Tiger, OM3 and Bio Elite (Zn Mn)
Rate	20L/Ha, 5L/Ha and 100ml/Ha respectively.
Mode of application	Drench
Spray interval	Agri Tiger - One application per year OM3 - 4 applications per year Bio Elite - 14 days



# TREATMENT APPLICATION SCHEDULE

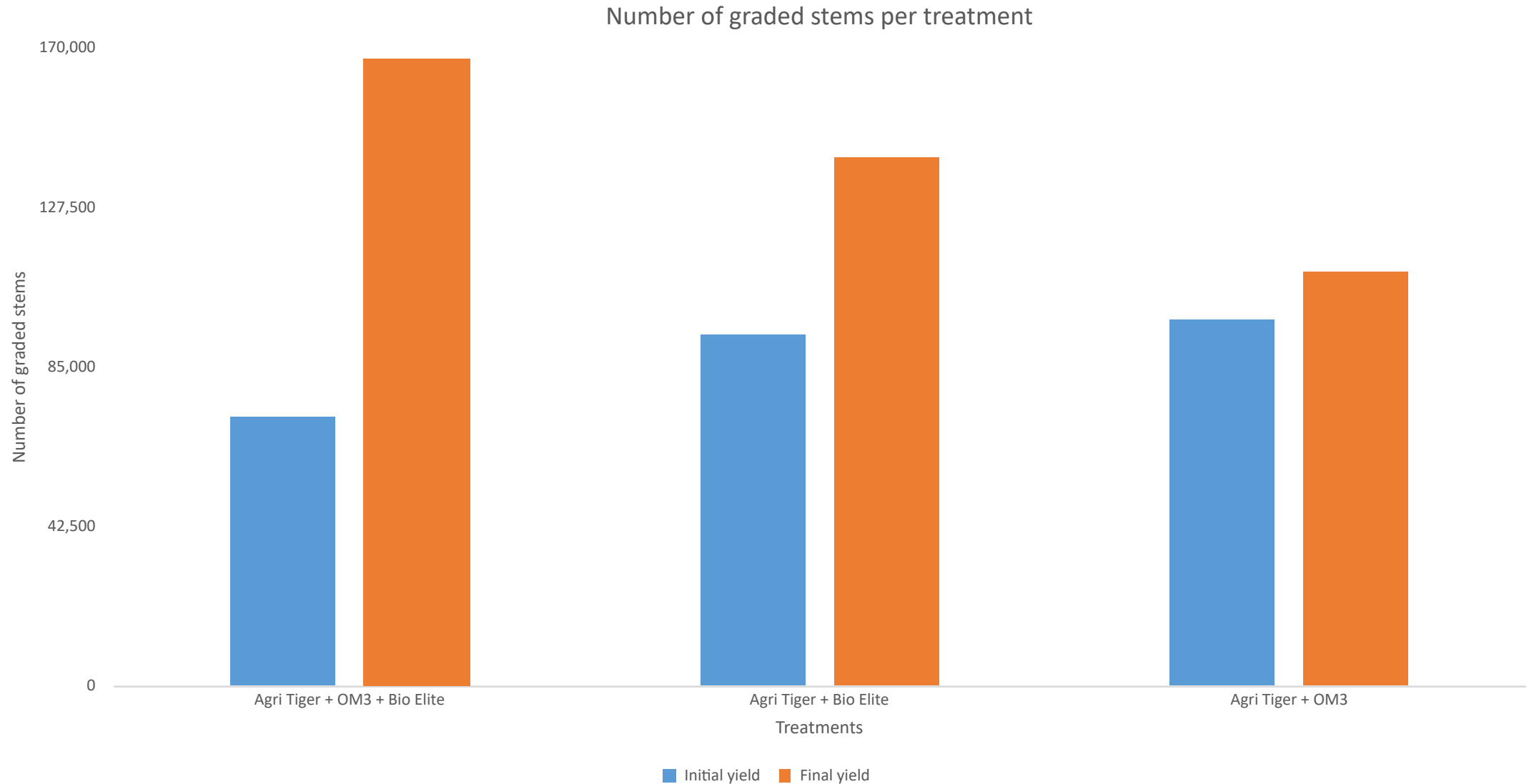
Treatment	Block (0.3ha)	Application	Date of application
T1-Agri Tiger+Bio Elite+OM3	F4	Agri Tiger	30/1/2023
		OM3	30/1/2023
		Bio Elite	1 <sup>st</sup> application: 30/1/2023 2 <sup>nd</sup> application: 13/2/2023 3 <sup>rd</sup> application: 27/2/2023 4 <sup>th</sup> application: 13/3/2023
T2-Agri Tiger+Bio Elite	F3	Agri Tiger	30/1/2023
		Bio Elite	1 <sup>st</sup> application: 30/1/2023 2 <sup>nd</sup> application: 13/2/2023 3 <sup>rd</sup> application: 27/2/2023 4 <sup>th</sup> application: 13/3/2023
T3-Agri Tiger+OM3	C1	Agri Tiger	9/2/2023
		OM3	9/2/2023
T4-Agri Tiger	D2	Agri Tiger	17/2/2023
T5-Untreated control	C2		

# RESULTS

Before application							
Treatment	Harvested	Graded	80s	70s	60s	50s	Rejected.
Agri Tiger + OM3 + Bio Elite	84,312	71,574	15975	28,149	26450	1000	12,738
Agri Tiger + Bio Elite	111,195	93,800	6195	40,975	43,450	3180	17,395
Agri Tiger + OM3	121,941	97,675	11,700	22,700	52,825	1450	24,266

After application							
Treatment	Harvested	Graded	80s	70s	60s	50s	Rejected.
Agri Tiger + OM3 + Bio Elite	173,729	167000	23375	68825	73125	1675	6729
Agri Tiger + Bio Elite	144,257	140,825	7975	54,825	73,650	4375	11,555
Agri Tiger + OM3	125,931	110,575	22,400	48,350	39,650	375	15356

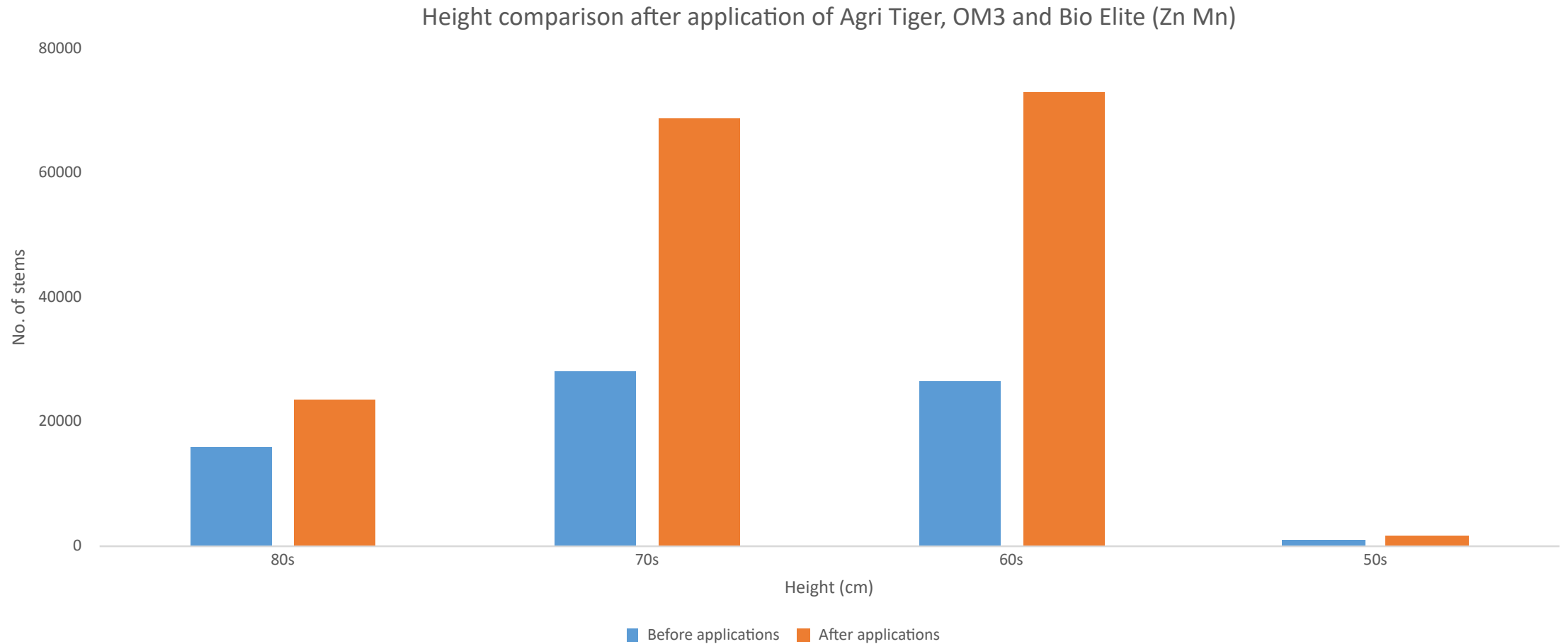
# GRADED STEMS PER TREATMENT



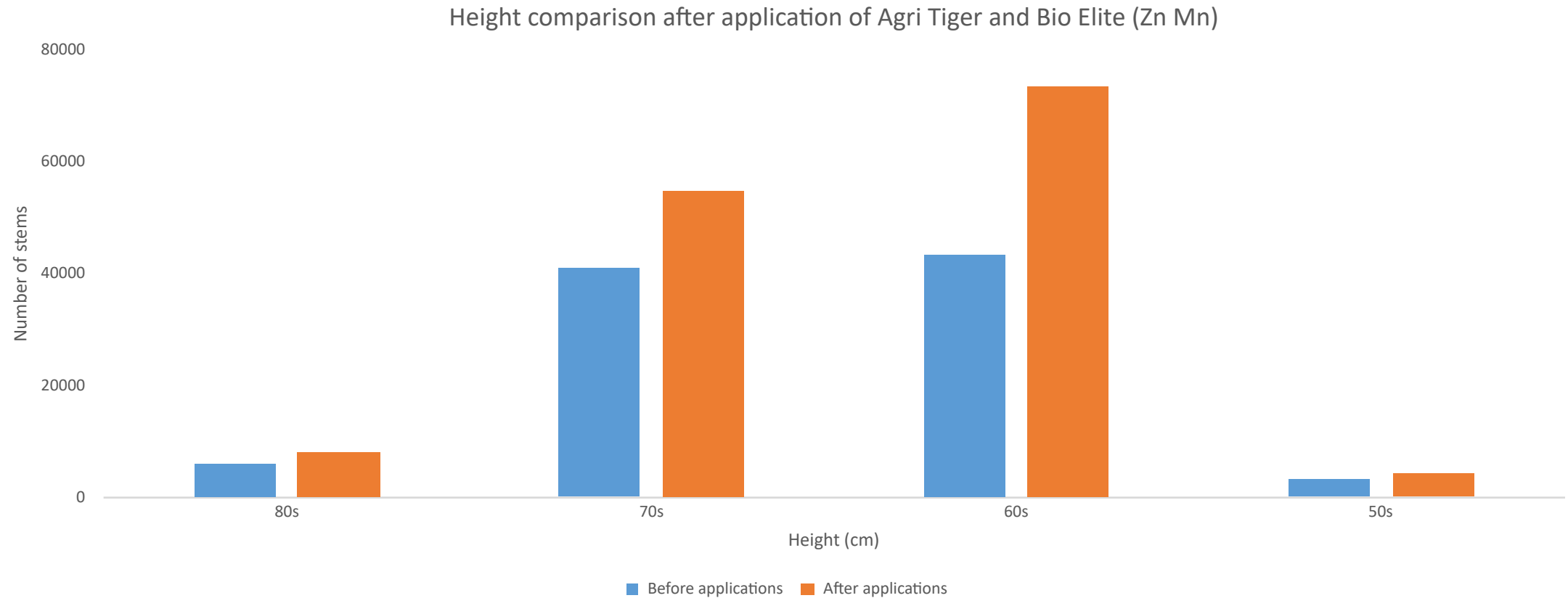
- There was an increase in yield on all the treated blocks compared to the initial yield before the applications.
- Percentage yield increase on the harvested blocks:

Treatment	Initial yield (Graded stems)	Final yield (Graded stems)	Percentage increase in yield (Graded stems)
Agri Tiger + OM3 + Bio Elite	71,574	167000	133.32%
Agri Tiger + Bio Elite	93,800	140,825	49.82%
Agri Tiger + OM3	97,675	110,575	13.21%

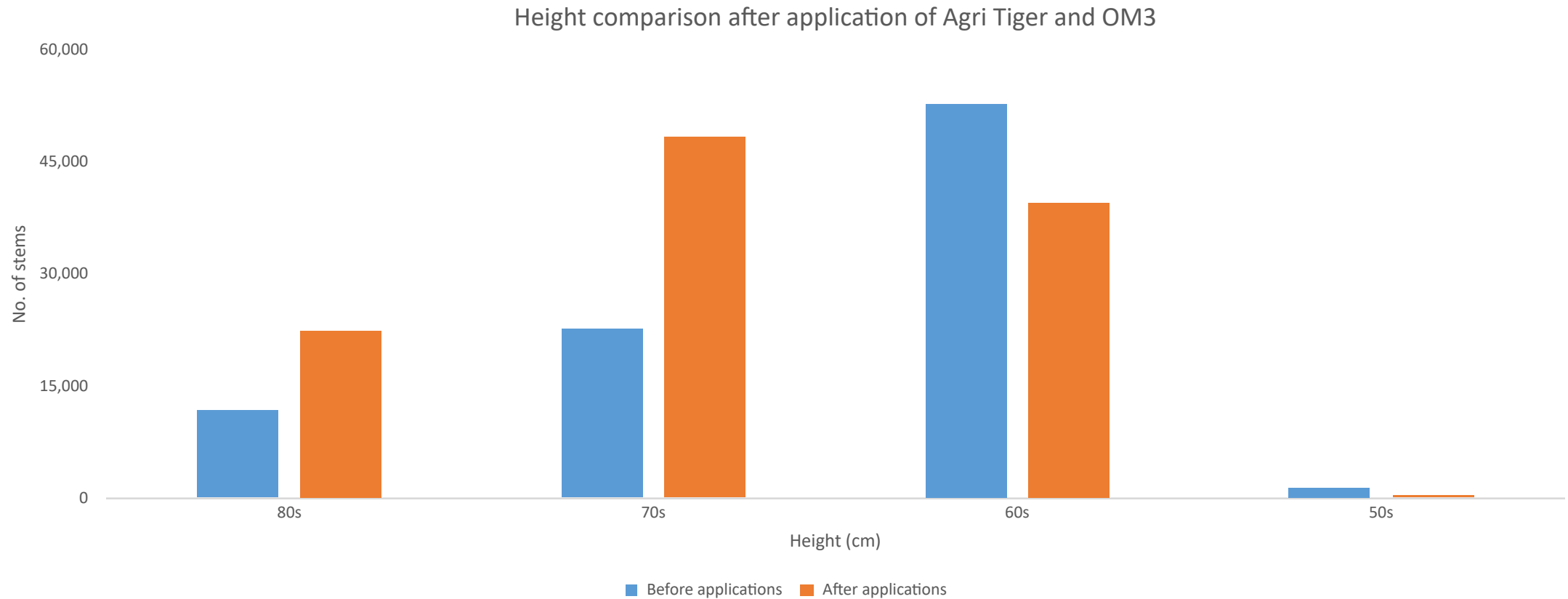
# Height comparison after application of Agri Tiger, OM3 and Bio Elite (Zn Mn)



# Height comparison after application of Agri Tiger and Bio Elite (Zn Mn)



# Height comparison after application of Agri Tiger and OM3



# Percentage increase in height

Height (cm)	80s	70s	60s	50s
Agri Tiger + OM3 + Bio Elite	46.3%	144.5%	176.5%	67.5%
Agri Tiger + Bio Elite	28.7%	33.8%	69.5%	37.6%
Agri Tiger + OM3	91.5%	113%	-24.94%	-74.1%



Agri Tiger + OM3 + Bio Elite



Agri Tiger + OM3



Agri Tiger + Bio Elite





# SOIL ANALYSIS

SOIL ANALYSIS RESULTS														
					Before-After.									
Element.	Na	K	Ca	Mg	P	S	Fe	Mn	B	Cu	Zn	C.E.C	O.m	C/N.
Treatment.														
Agri Tiger + OM3 + Bio Elite	487-738	1050-1160	2880-2770	381-355	101-110	26.4-66.8	157-119	176-170	0.90-0.80	1.72-1.20	14.7-10.7	23.3-23.8	4.08-4.06	15.6-14.8
Agri Tiger + Bio Elite	774-774	858-1240	2650-2600	316-337	29.8-133	48.4-50.0	155-122	164-167	1.49-0.90	1.36-1.70	10.9-10.4	23.3-23.2	3.86-3.50	16.3-14.9
Agri Tiger + OM3	603-899	989-1200	3490-3470	381-447	169-137	94.3-77.7	159-111	135-164	1.21-0.80	0.99-2.20	13.0-10.8	26.9-29.1	4.22-4.11	15.3-14.9
Agri Tiger	436-839	1050-1150	3590-3170	421-406	59.8-141	487-92.5	154-107	250-196	1.47-0.80	4.67-0.06	11.4-10.5	27.4-26.7	2.33-3.92	10.4-15.2
Control	607-1150	1410-1190	3520-3610	191-171	33.6-143	80.7-71.8	137-102	191-171	1.34-0.80	0.67-1.70	14.4-10.8	29.0-30.9	3.79-4.13	14.7-15.0

# LEAF ANALYSIS RESULTS

LEAF ANALYSIS RESULTS												
Element.	N	P	K	Ca	Mg	S	Na	fe	Mn	B	Cu	Zn
Treatment.												
Agri Tiger + OM3 + Bio Elite	3.77	0.47	3.81	0.65	0.19	0.29	474	167	63.6	22.8	20.4	62.4
Agri Tiger + Bio Elite	4.01	0.28	3.77	0.78	0.17	0.27	434	160	119.0	25.2	9.6	28.8
Agri Tiger + OM3	2.97	0.27	3.73	0.81	0.14	0.25	398	588	149.0	45.6	19.2	74.4
Agri Tiger	3.57	0.24	3.27	0.7	0.15	0.24	342	146	133.0	25.2	7.2	31.2
Control	3.98	0.28	3.46	0.75	0.18	0.26	368	132	140.0	25.2	7.2	30.0

# CONCLUSION

- There was an increase in yield, increase in stem length and reduction of reject stems on all the treated blocks compared to the initial data before the applications.
- Agri Tiger, OM3 and Bio Elite (Zn Mn) did not cause any phytotoxic effect on Aster crop.
- Once Agri Tiger and the control blocks are harvested, a comprehensive report will be done presented.
- Recommendations will be indicated in the final report.

# ACKNOWLEDGEMENT

- We appreciate the entire team of KS Farm for trusting and allowing Vicentia East Africa to conduct the trial in the farm.
- We are grateful for the support from Top Management, Mr. Ronald, Mr. Stanley, Mr. Shem and Ms. Winnie and the spray team. Your effort and support was a great contribution to the success of the trial.