FACCE SURPLUS
SUSTAINABLE AND RESILIENT AGRICULTURE FOR FOOD AND NON-FOOD SYSTEMS

BioFooDon MARS

The Polish Experiments 2021

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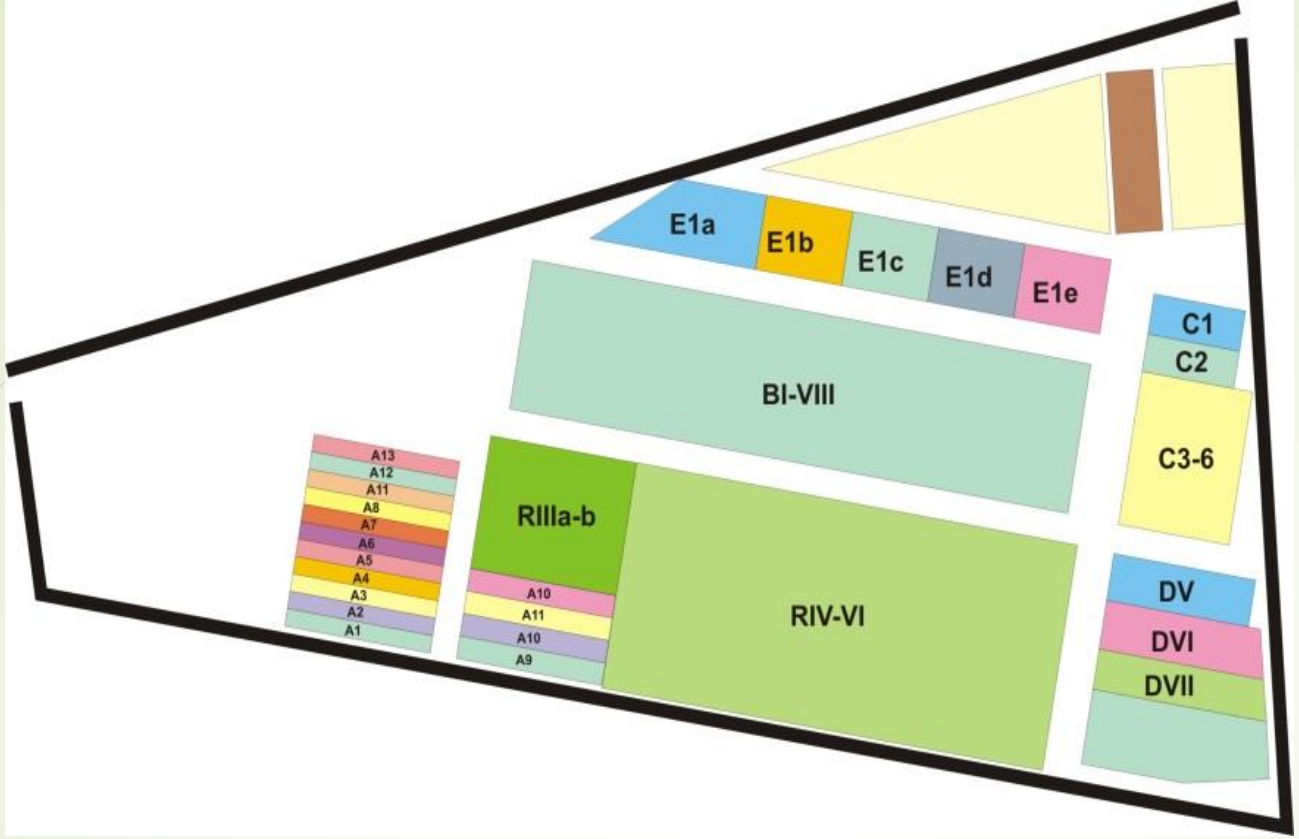


Fields number,	Crop rotation and form of N,			Fertilizer
A 1-3	Arbitrary rotation and without legumes,	$N\text{-}NH_4NO_3$,	without FYM,	0
A 4			with FYM since 1992,	CaNPK
AF 2-3		$N\text{-}(NH_4)_2SO_4$	without FYM,	NPK
AF 1			with FYM since 1992,	PK PN KN
A 6-8		$N\text{-}NH_4NO_3$,	without FYM,	Ca
A 5			with FYM since 1992,	CaNPK
A 9-12	Arbitrary rotation with legumes,	$N\text{-}NH_4NO_3$,	without FYM,	NPK
E 1- 5	Five fields crop rotation: potatoes (30t FYM), s. barley, r. clover, w. wheat, rye,	$N\text{-}NH_4NO_3$,		CaPK CaPN CaKN
D 5	Potato monoculture, $N\text{-}NH_4NO_3$,			FYM
D 6	Rye monoculture, $N\text{-}NH_4NO_3$,			20t·ha^{-1} every year
D 7	Triticale, $N\text{-}NH_4NO_3$			

Experiments with barley

Scheme of experiment

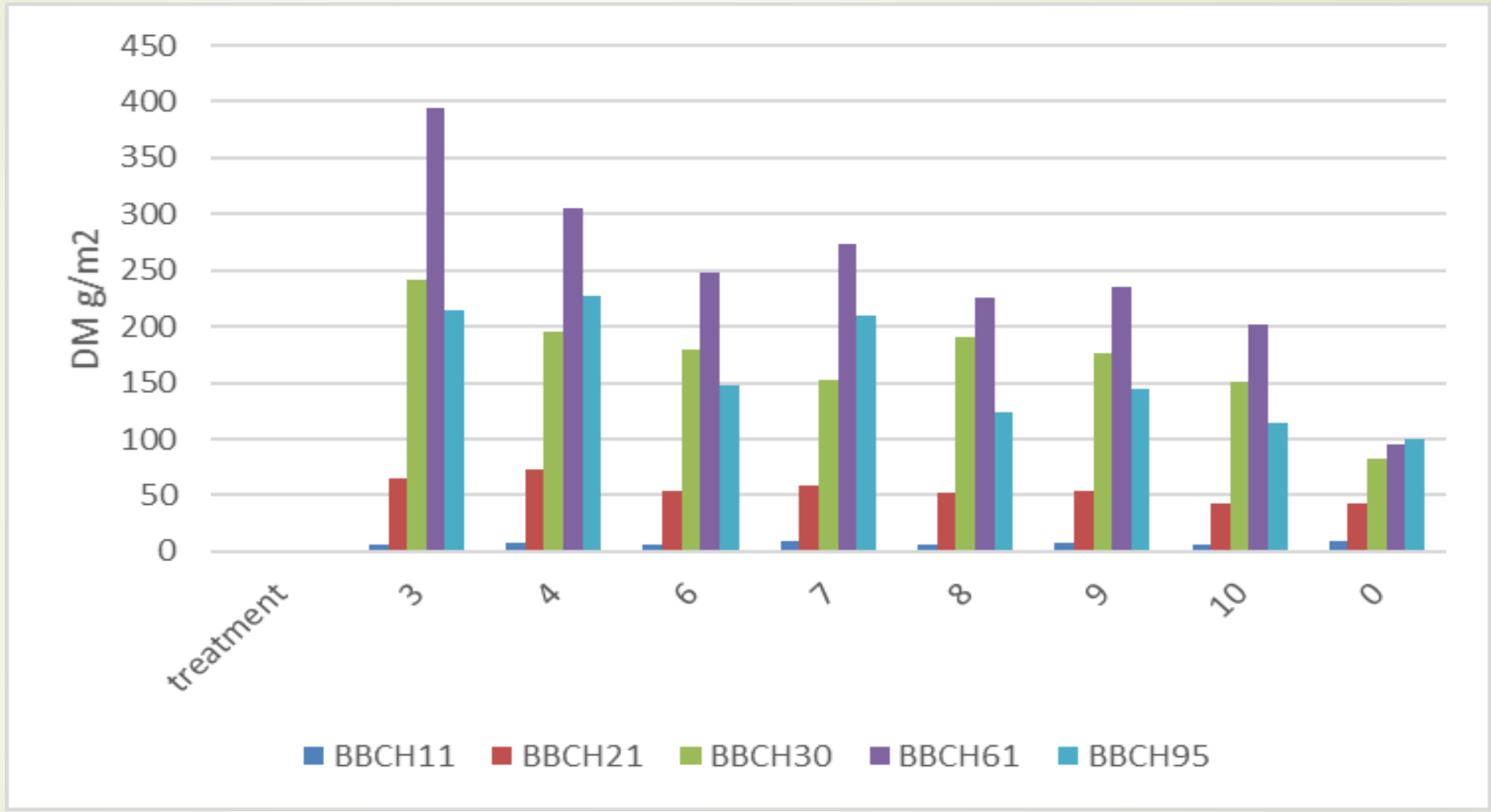
		10
		11
	10	11
	10	11
	1	7
	6	3
	2	5
8	9	4
4	8	9
5	1	2
7	3	6
4	9	8
1	2	5
3	6	7

1.5 m

11.5 m

1. Control - 0
2. N100P80K140
3. N100P80K140 +Se
4. N100P80K140 + Si
5. Compost pellets (N170)
6. Compost pellets (N 170) + Se
7. Compost pellets (N 170) + Si
8. Compost pellets (N120) +30 kg N mineral fertilizers
9. Compost pellets (N120) +30 kg N mineral fertilizers + Se
10. Compost pellets (N120) +30 kg N mineral fertilizers + Si
11. Forter + N100P80K140

Dynamic of biomass accumulation



0 - Control

3. N100P80K140 +Se

4. N100P80K140 + Si

6. Compost pellets (N 170) + Se

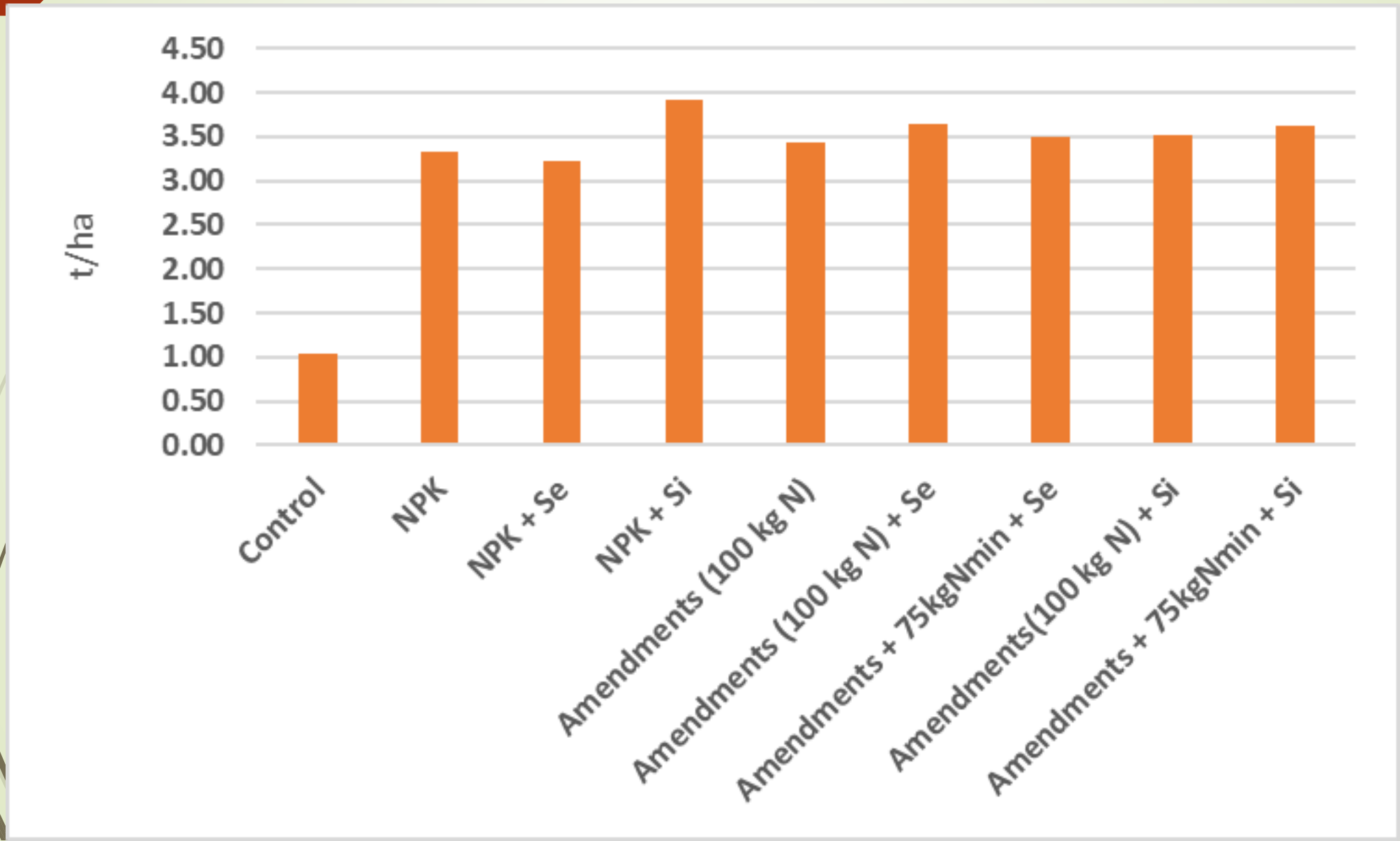
7. Compost pellets (N 170) + Si

8. Compost pellets (N120) +30 kg N mineral fertilizers

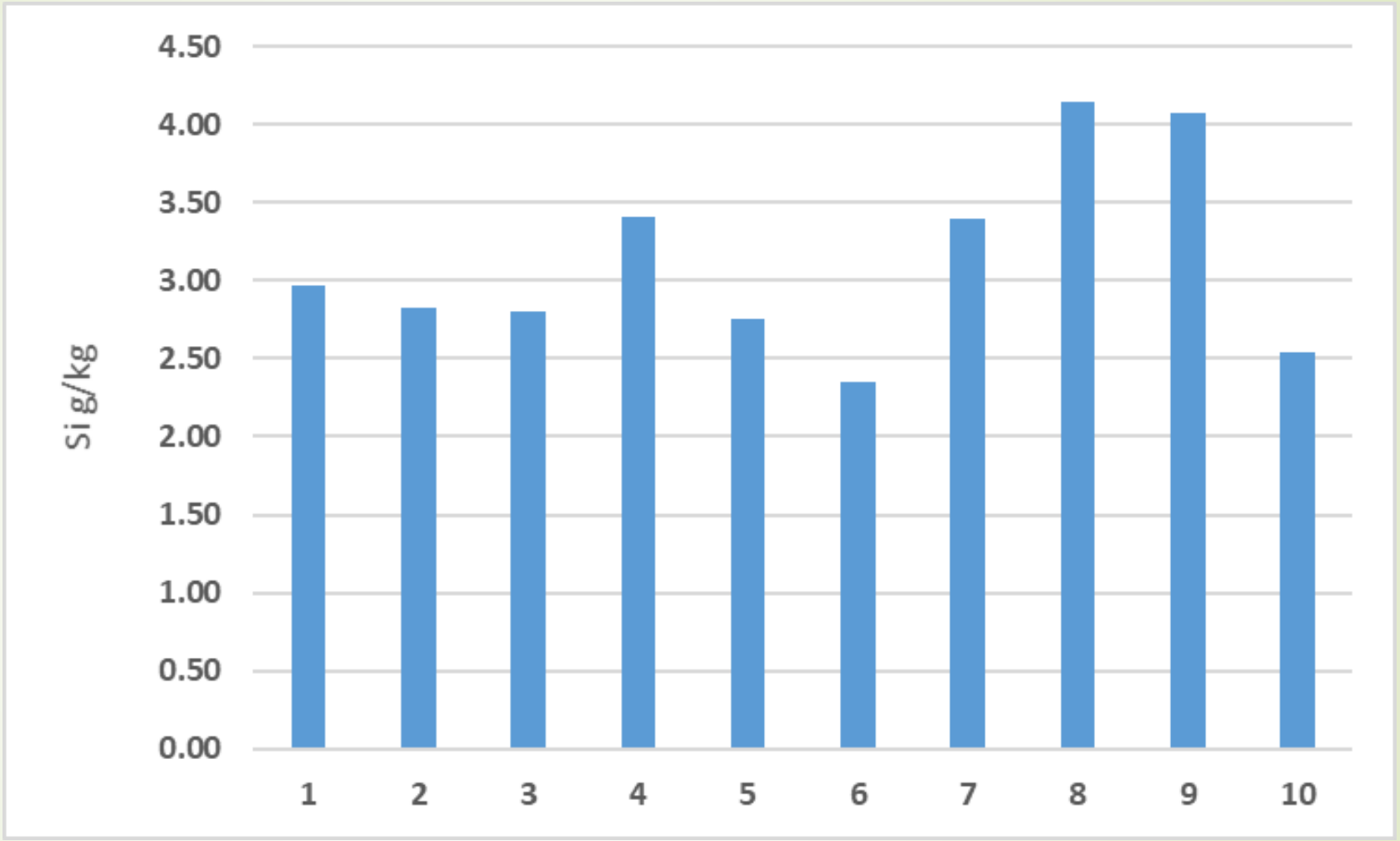
9. Compost pellets (N120) +30 kg N mineral fertilizers + Se

10. Compost pellets (N120) +30 kg N mineral fertilizers + Si

Yield

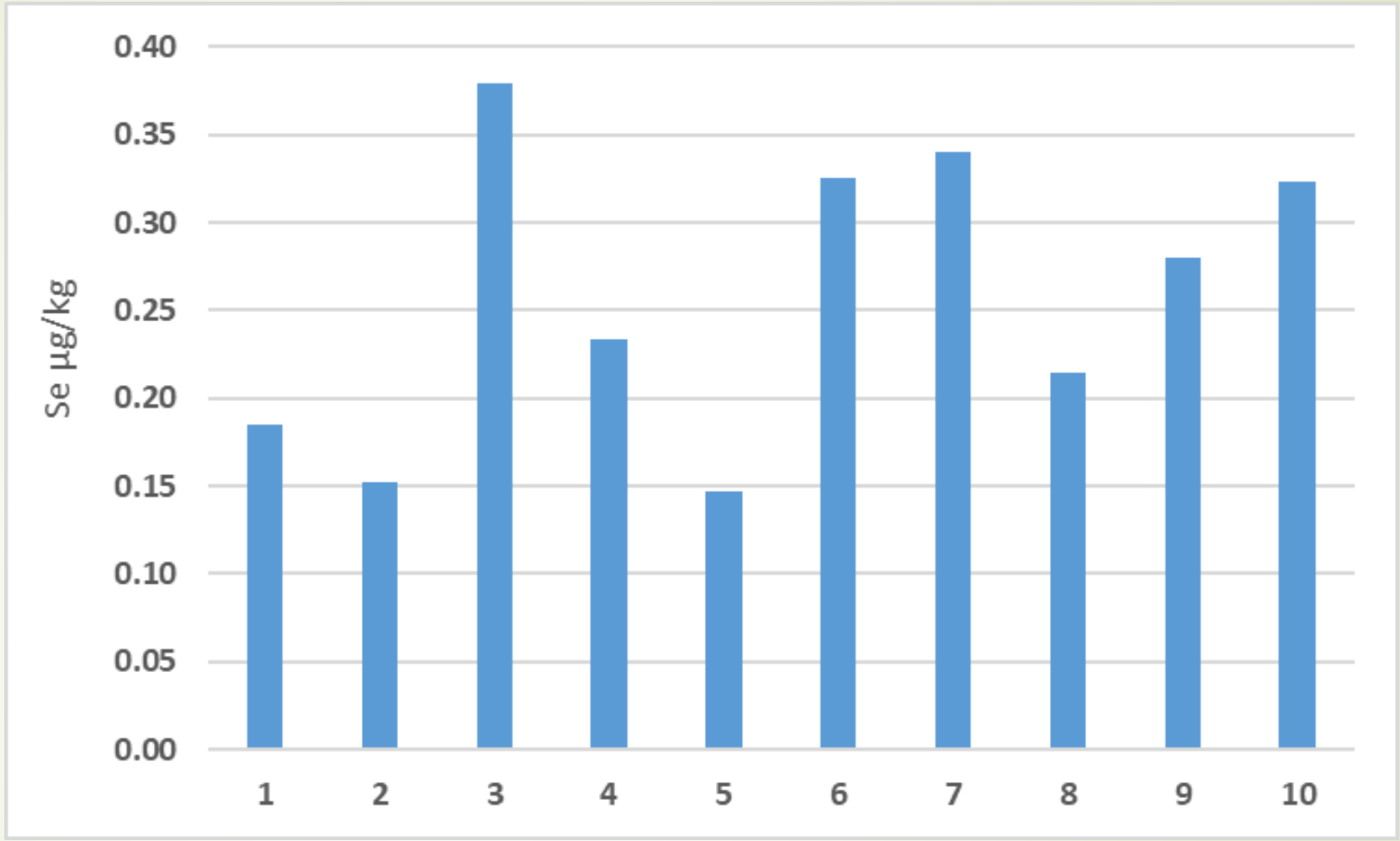

t/ha
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
Control
NPK
NPK + Se
NPK + Si
Amendments (100 kg N)
Amendments (100 kg N) + Se
Amendments + 75kgNmin + Se
Amendments(100 kg N) + Si
Amendments + 75kgNmin + Si

Si content



1. Control - 0
2. N100P80K140
3. N100P80K140 +Se
4. N100P80K140 + Si
5. Compost pellets (N170)
6. Compost pellets (N 170) + Se
7. Compost pellets (N120) +30 kg N mineral fertilizers + Se
8. Compost pellets (N 170) + Si
9. Compost pellets (N120) +30 kg N mineral fertilizers + Si
10. Forter + N100P80K140

Se content



1. Control - 0
2. N100P80K140
3. N100P80K140 +Se
4. N100P80K140 + Si
5. Compost pellets (N170)
6. Compost pellets (N 170) + Se
7. Compost pellets (N120) +30 kg N mineral fertilizers + Se
8. Compost pellets (N 170) + Si
9. Compost pellets (N120) +30 kg N mineral fertilizers + Si
10. Forter + N100P80K140


Experiments with grasses

Tiomothy grass (*Phleum pratense*)
Tall Fescue (*Festuca arundinacea*)

	4m	4m	4m	4m
1. 5m	A	B	C	D
1. 5m	D	A	B	C
1. 5m	D	B	A	C
1. 5m	B	D	C	A

Tall Fescue (Festuca arundinacea)

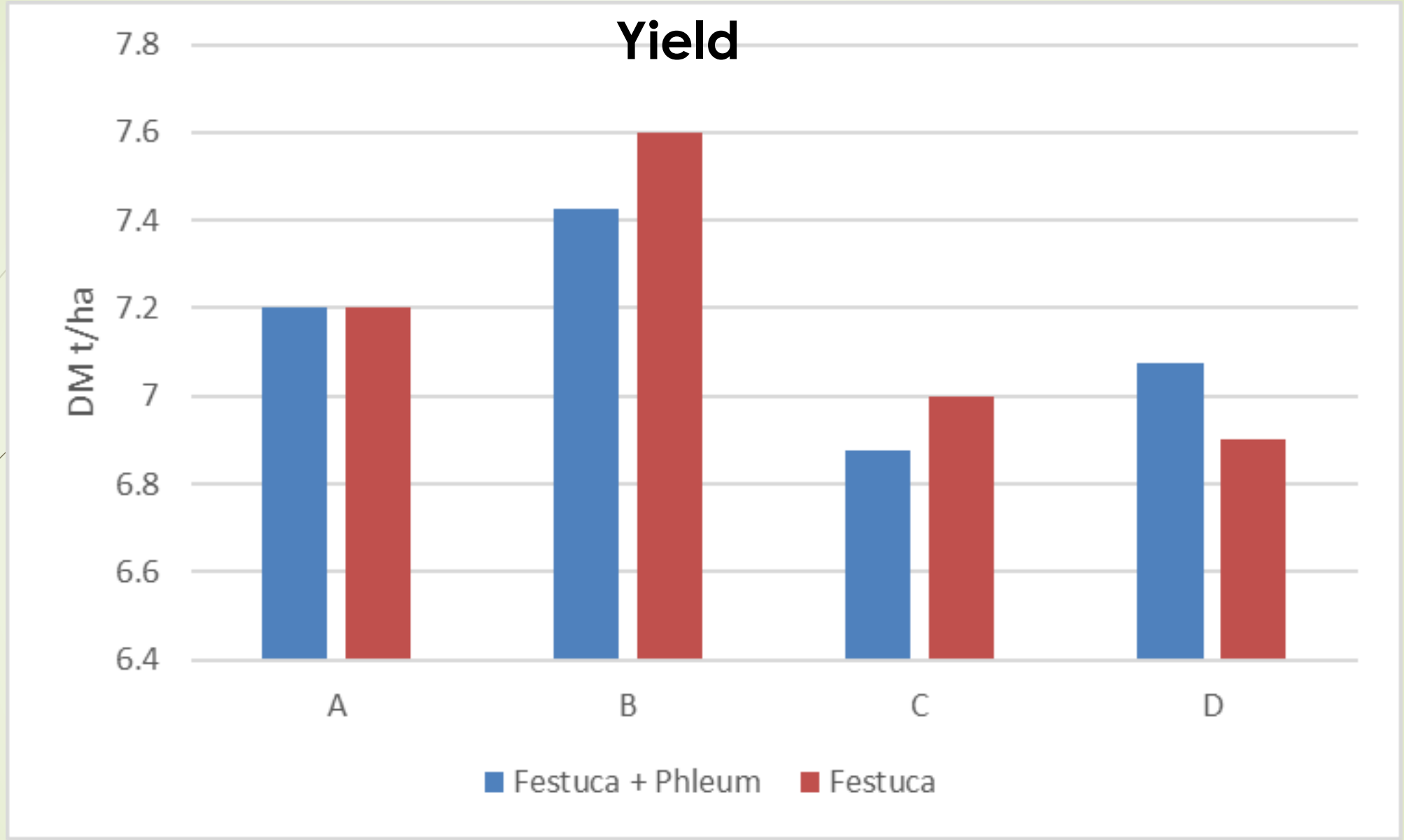
4m	4m	4m	4m
A	B	C	D
D	A	B	C
D	B	A	C
B	D	C	A

A. Control - NPK

B. NPK + Si –Optysil

C. NPK + Se (Na_2SeO_4)

D. NPK + Forter



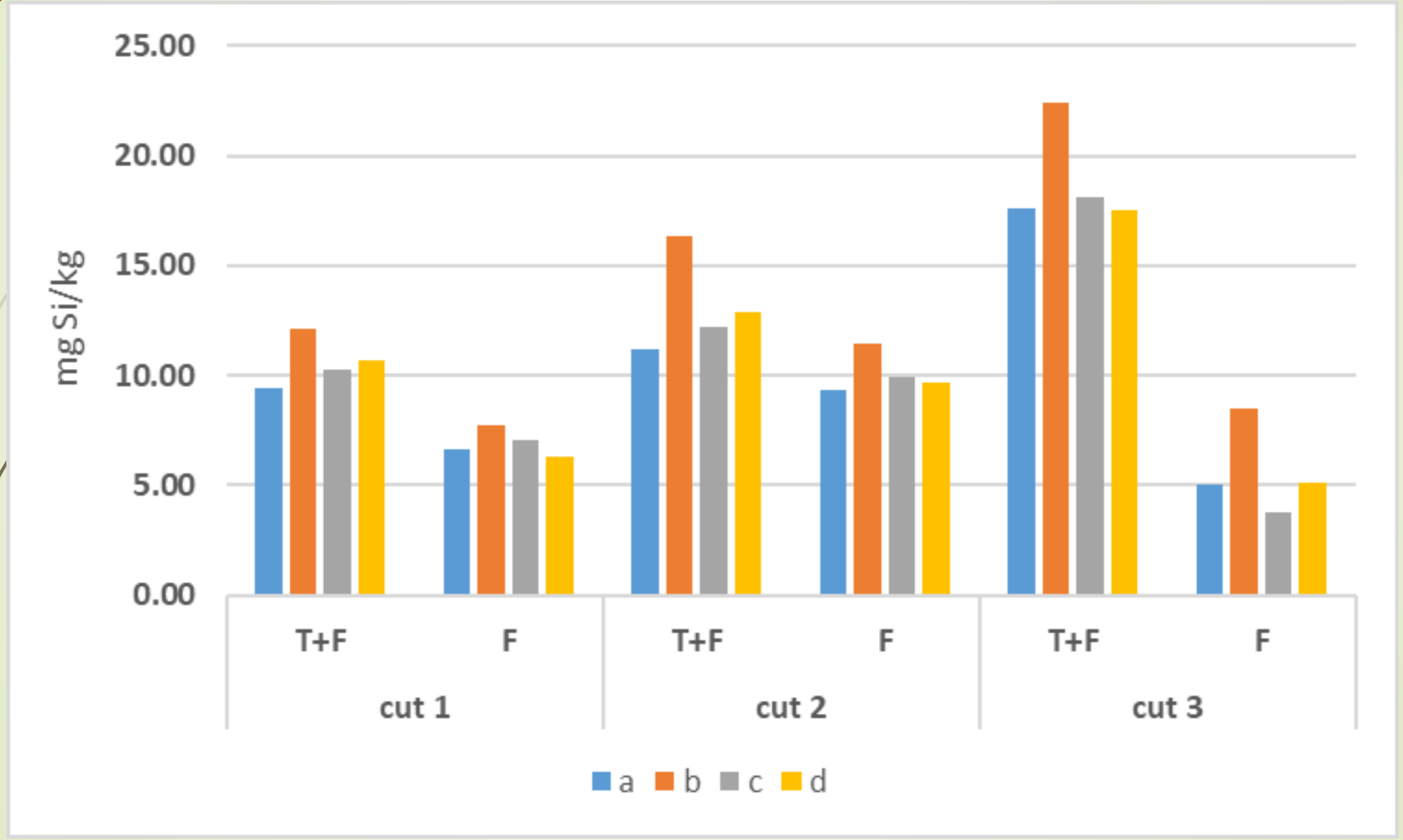
A. Control - NPK

B. NPK + Si –Optysil

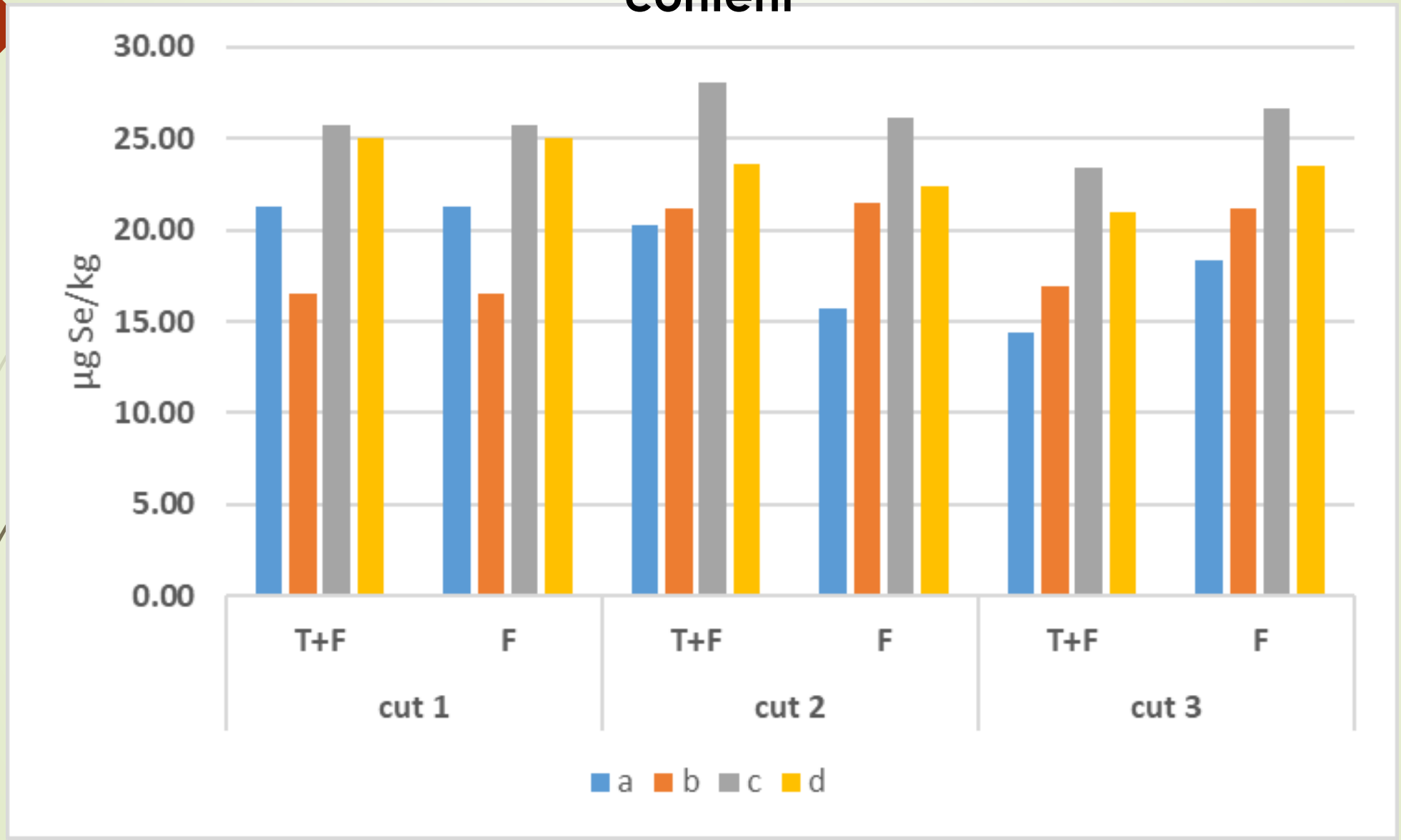
C. NPK + Se (Na_2SeO_4)

D. NPK + Forter

Si content


25.00
20.00
15.00
10.00
5.00
0.00
mg Si/kg
T+F
F
T+F
F
T+F
F
cut 1
cut 2
cut 3
a
b
c
d

Se content


30.00
25.00
20.00
15.00
10.00
5.00
0.00
µg Se/kg
T+F
F
T+F
F
T+F
F
cut 1
cut 2
cut 3
a
b
c
d

Thank you for your attention