

GLOBAL SYMPOSIUM ON SALT-AFFECTED SOILS

20 - 22
October, 2021
Virtual meeting

Economic analysis of potato cultivation
under saline conditons

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Background

- Potato is a large crop in Egypt
- Salinity is a large problem in Egypt
- Compost is known to have a positive effect on crop performance under saline conditions for a number of reasons:
 - Increased soil fertility
 - Increased buffer of nutrients
 - Better soil structure and water retention
 - Better rooting capacity and workability
 - Antagonistic effect to diseases

SEKEM



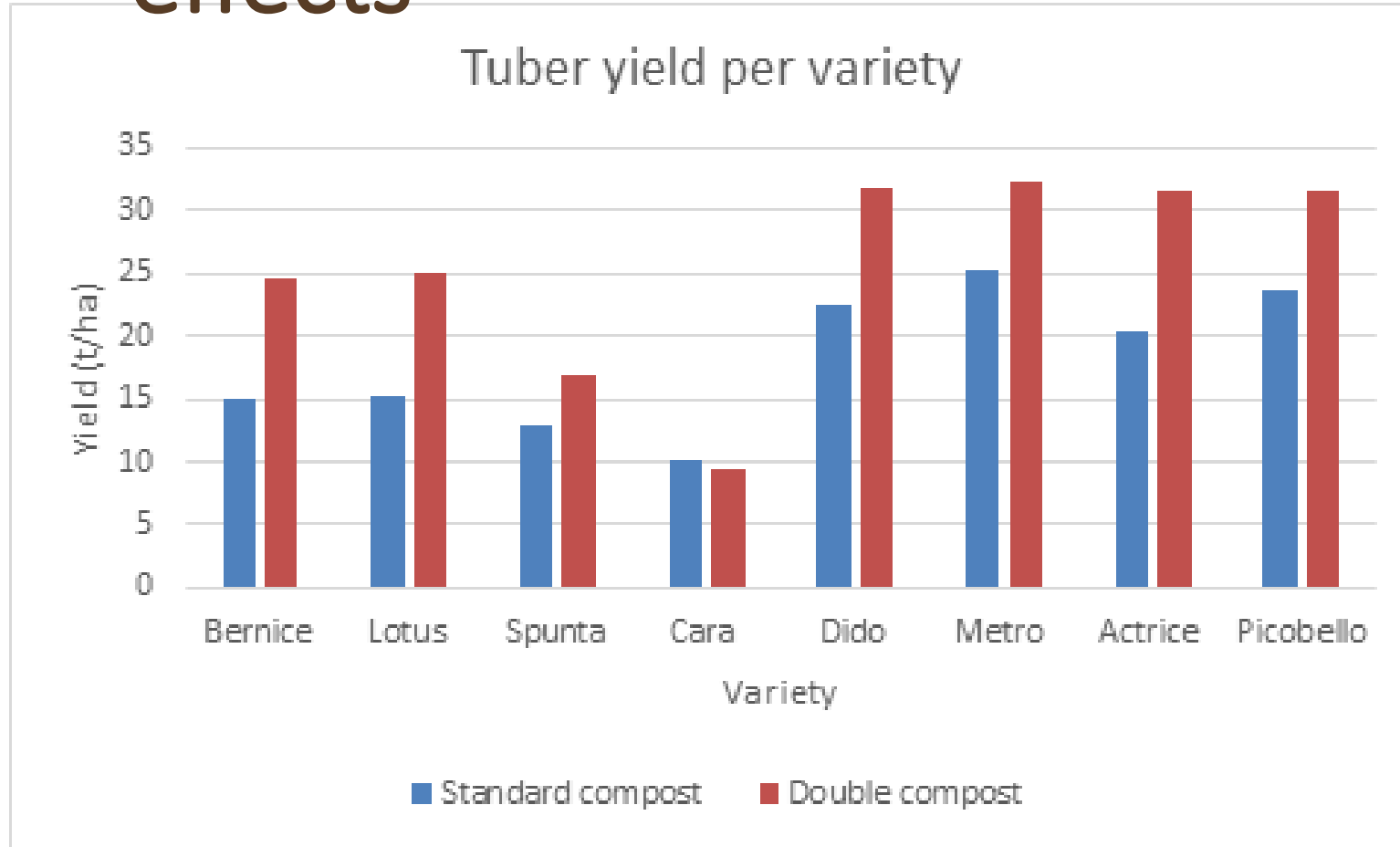
Experimental design

- Test with eight potato varieties, two common ones in Egypt, six varieties selected for salinity tolerance. Test of one feddan ($\pm 0,4$ ha)
- Two compost treatments were applied, equivalent to 1,8 and 4,5 t/ha
- Economic analysis of inputs versus outputs
- Soil salinity in figure shows EC1:2. Equivalent ECe values (dS/m) are:

Plot code	ECe (dS/m)
D3-1	6,3
D3-2	6,3
D3-3	5,95
D3-4	6,65



Results: potato performance and compost effects



Increase double compost (%)
63,7
63,9
30,9
-8,8
41,0
27,4
54,4
33,6



Yields up to 32 t/ha under biodinamic and saline conditions
National average potato yield = 28 t/ha

Results: compost effects and economic viability

Scenarios:

Actual

More representative

Difference in profit (double-standard)	Bernice	Lotus	Spunta	Cara	Dido	Metro	Actrice	Picobello
Per feddan	EGP 4.540,51	EGP 4.357,88	-EGP 1.261,48	-EGP 5.961,81	EGP 5.899,96	EGP 2.465,06	EGP 5.648,86	EGP 3.041,94
Change (%)	6%	12%	-3%	-12%	14%	6%	13%	7%

Difference in profit (double-standard)	Bernice	Lotus	Spunta	Cara	Dido	Metro	Actrice	Picobello
Per feddan	EGP 14.340,86	EGP 13.975,62	EGP 2.736,89	-EGP 6.663,77	EGP 17.059,78	EGP 10.189,97	EGP 16.557,56	EGP 11.343,73
Percentage change	27%	64%	8%	-17%	88%	76%	77%	60%

Investment of extra compost is worth it in all new varieties tested

Conclusions

- All newly introduced varieties performed better than the two commonly used varieties
- Seed potatoes (much) more expensive for the new varieties
- The application of extra compost was almost always worth it. Extra profits around 300/feddan. Expected to increase with normal potato market prices





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Thank you!

