

Salt Farm Texel

-stretching the boundaries for food production-

Growing crops on salt affected soils ?

-the case of potato-

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Director R&D



-our vision-

It is possible to grow crops directly on salt affected soils

Make use of saline soils, don't focus on de-salinization





why is it important?

water

- Shortage of fresh water
- 70-90% water use by agriculture
- Produce more food with less water
- Amount brackish water= fresh water

salinization

- 1.5 billion ha salt affected
- Plus 3 ha per minute
- \$27 billion crop salt damage



Making use of saline resources: How do we do it ? > open air laboratory at unique location





Large scale screening for salt tolerant varieties (work with breeders)
In 2015, 220 different varieties of potato were screened for salt tolerance



Salt Farm Texel > test facility:
7 salt concentrations, 8 repetitions, 56 plots of 160 m²,
1 hectare total

Salt concentrations used: 1.5, 4, 8, 12, 16, 20 and 35 dS/m

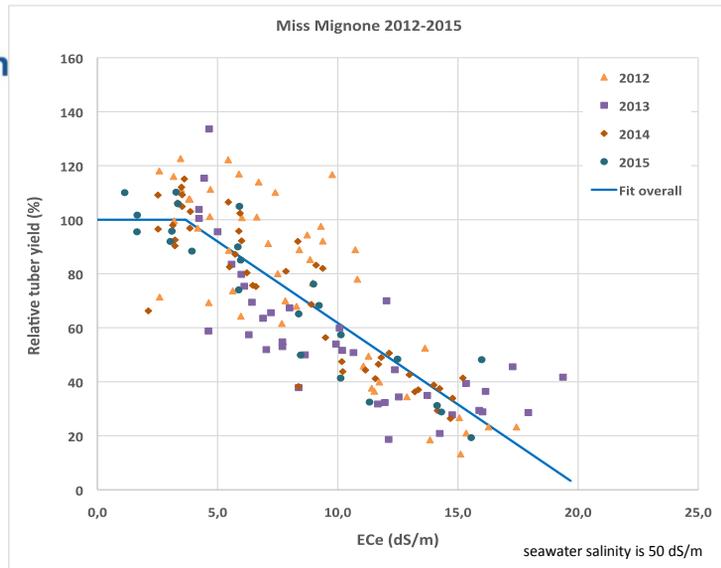




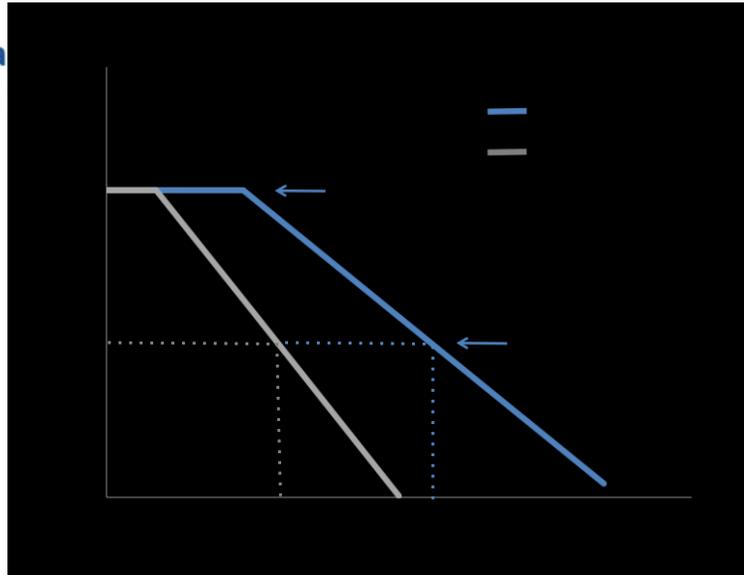
- open air laboratory
- reliable data on crop salt tolerance
- highly controlled conditions
- practical implementation
- testing all crops and halophytes



Threshold around 4-6 dS/m



Growth of salt tolerant potato at test facility Salt Farm Texel, based on average of 4 seasons (2012-2015)



**Growth of salt tolerant potato,
based on average of 3 seasons (2012, 2013, 2014)**



-Saline agriculture-

Saline agriculture is **more than a salt tolerant crop,**

also irrigation and drainage,

soil fertility,

soil structure,

soil tillage,

specific use of fertilizers,

soil amendments,

direct or real time soil salinity measurements,

management of cultivation strategy





Introduction of salt tolerant potato in Pakistan
(A total of 6 million hectares of salt affected land in Pakistan)



Not all location work the first time

High salinity, poor soil structure / waterlogging, low soil fertility,....

Validation and demonstration on 10 different locations in 2016
Close monitoring of soil salinity and cultivation



2015-2016 season

Yield at 8 dS/m is around 30 tons/ha (50% higher average)

Various locations also 50% water saving (use brackish water)

Next season 100 hectares

(picture taken in Sindh, Pakistan)



SO:

- Open-air lab SFT gives reliable data under field conditions
- Growing crops on salt affected soil is possible
- Using brakish water for irrigation is possible
- Only implementation of potato, we want more !
- Double the amount of water for agriculture is possible !
- Suitable for 100-300 million hectares worldwide !

Contact us at info@saltfarmtexel.com

> Feed the Future, now !!!



Research and development salt tolerant potato, combination of many projects and partners:



Ministry of Foreign Affairs



Prof. Gerrit van Straten (WUR), Prof. Peter van Bodegom (Leiden University), Ir. Roland Oosterbaan (ILRI)

