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Introduction

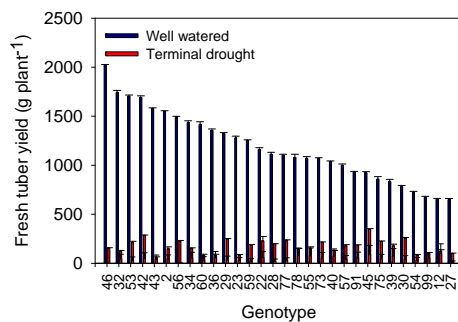
Potato (*Solanum tuberosum* L.) is a drought sensitive crop. Even short periods of water deficit significantly reduce tuber yield in potato. The selection for drought tolerant potato genotypes is complicated as drought tolerance has a multiple trait nature. To speed up the breeding process, screening tools for a robust evaluation to identify drought tolerant potato genotypes are needed.



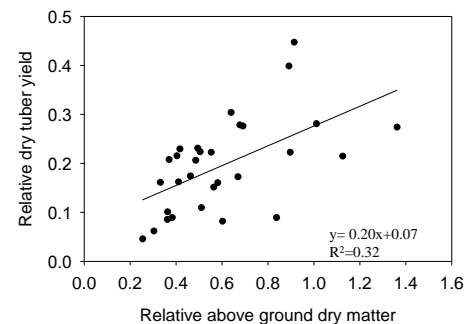
Conclusions and Outlook

- Terminal drought lead to severe yield reduction in all potato clones studied.
- Yield reductions under drought were associated with reductions in above ground dry matter and harvest index.
- Quantum yield is not suited as early screening tool.
- Experiments are ongoing and more traits will be tested as potential screening tools (e.g. root architecture, relative leaf water content, accumulation of abscisic acid).

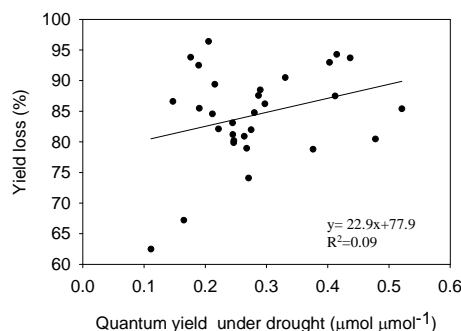
Results and Discussion



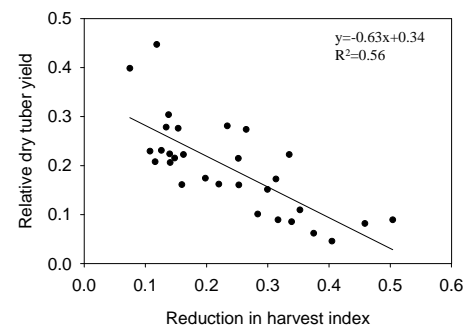
- Fresh tuber yield per plant ranged between 650 and 2.000 g plant⁻¹ in the well watered treatment. After 60 days of drought, yield was reduced by 63-96 %.



- Drought induced reduction of above ground dry matter was linearly correlated with dry tuber yield loss.



- Quantum yield under drought was not significantly correlated with yield loss.



- Relative dry tuber yield was strongly linearly correlated with a decrease in harvest index.

Materials and Methods

- The experiment was conducted between September 2012 and January 2013 at an arid coastal site in southern Peru
- 30 advanced potato clones from the CIP panel were planted in split-plot design
- Two irrigation treatments were applied: fully watered and terminal drought, where irrigation was withheld 67 days after planting
- Quantum yield was measured 30 days after drought initiation
- Morphological parameters and harvest data (biomass accumulation, root architecture and yield) were recorded

