Crop Wild Relatives (CWR)-derived potatoes for climate change resilience of farming communities in Kenya and Peru

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Crop Wild Relatives (CWR)-derived potatoes for climate change resilience of farming communities in Kenya and Peru

Select promising pre-bred materials for farmers’ traits of interest and those related to climate change (LB and BW)

Validate and introduce novel variation for drought tolerance and LB resistance into 2x self-compatible
Potato wild relatives
CWR project

### Bacteria wilt
- *S. commersonii, phureja, tuberosum*

### Drouht
- *S. Boliviense (TS=3233)
- *S. bukasovii*
- *S. infudibuliforme*
- *S. lignicaule*
- *S. Raphanifolium (TS=5513)*
- *S. Tacnaense (TS=4524)*
- *S. Tarapatanum (1903)*

### Late blight (LB)
- *S. microdontum*
- *S. tarijense*
- *S. megistacrolobum*
  - *S. stn, chq* Fam1 =132
  - *S. phu, pcs* Fam2=143
  - *S. 2xhyb, cjm* Fam4=150
  - *S. stn, sgr* Fam3=100

### LB-PVS
- *adg, tbr, dms, stn, sgr*
- *adg, tbr, dms, 2xHyb, cjm*
Broadening the Genetic Base of Resistance to Late Blight
Figure 2. Prebreeding scheme applies to introgress resistance from wild species (Piurana, Tuberosa and Megistacroloba Group) into the *S. tuberosum* gene pool.
Clonal performance
Unreplicated field trial (HER clones)

Oxapampa, Peru. 2018
Next steps

• Manuscript
  • Broadening the Genetic Base of Resistance to Late Blight

• (ER case) Mapping population segregating for **late blight** resistance - genotypes derived from ER clones (2x embryo rescue from *S. cajamarquense*) x Sli donor hybrid.

• (HER case) Genotyping of selected HER genotypes and their corresponding parents (4x and 2x) - *S. cajamarquense* background.
Remarks

• Data set (ongoing)
  • OPEN ACCESS https://data.cipotato.org/dataverse.xhtml

• Germplasm developed – CWR Project
  • Clones invitro and TPS (crosses) – they will be posted in the web site of the event.
Acknowledgments

https://www.cwrdiversity.org/

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The International Potato Center (known by its Spanish acronym CIP) is a research-for-development organization with a focus on potato, sweetpotato, and Andean roots and tubers. CIP is dedicated to delivering sustainable science-based solutions to the pressing world issues of hunger, poverty, gender equity, climate change and the preservation of our Earth’s fragile biodiversity and natural resources.

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