

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



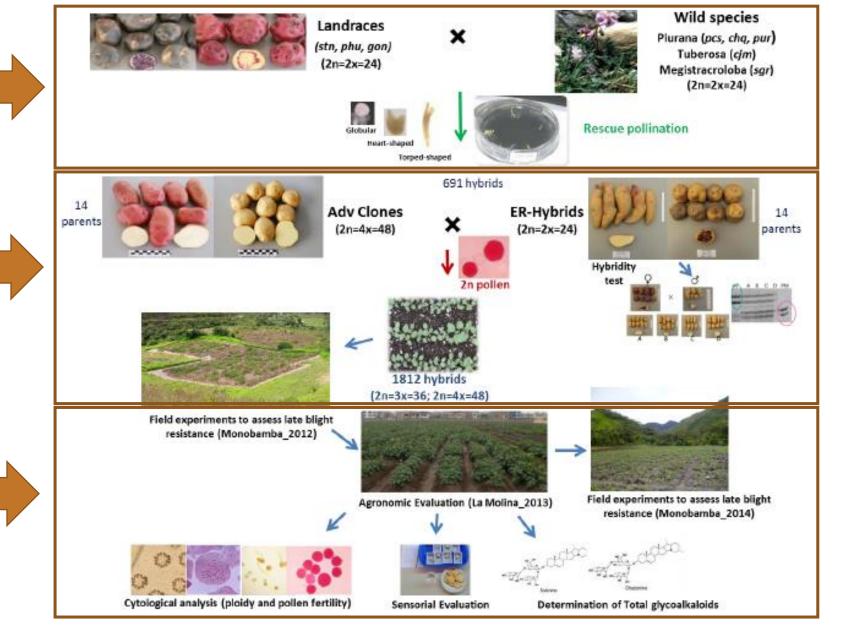
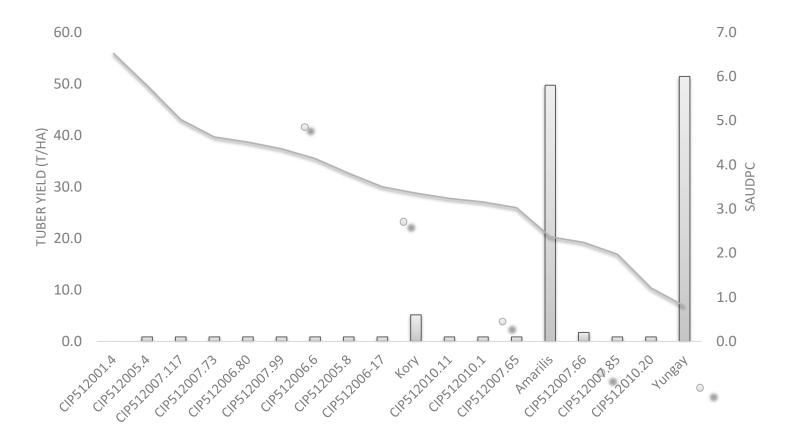


Figure 2. Prebreeding scheme applies to introgress resistance from wild species (Piurana, Tuberosa and Megistracroloba Group) into the *S. tuberosum* gene pool.

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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