

# Results and perspectives of potato cultivation in CAC

## Some major technical constraints

- Lack of potato varieties adapted to local agro-climatic conditions.
- Weak seed potato production system.
- Lack of suitable storage infrastructures to keep seed potatoes under proper physiological conditions.
- Lack of application of improved seed practices at farmer level.



# Germplasm Enhancement & Crop Improvement

We work with three different types of germplasm materials:

1. **In-vitro advanced clones**: that need to be multiplied under local laboratory conditions and aphid-proof screenhouses to obtain mini-tubers. They are then tested locally in multilocation trials.
2. **True Seed (TS)**: received from Lima and combining traits of interest for the region (resistance to viruses and abiotic stress, marketability, earliness). This is the classic clonal selection to develop new varieties.
3. **True Potato Seed (TPS)**: they are only used in “niche” areas (Tajikistan: Zarafshan and Rasht valleys, Pamir; Kyrgyzstan: Alay and Chon Alay, Osh region; Uzbekistan: Bostalnik and Kitab districts; Afghanistan: Gorno Badakhshan) as an alternative seed potato production technology (instead of clonal multiplication, we deal here with sexual multiplication).

# CIP introduced the importance of a multilocation testing system

## The cycle

- ***1st year:* observation trials in the field in altitude and at the same time multiplication of the clones.**
- ***2nd year:* performance trial in altitude.**
- ***3rd year:* multilocation trials in at least three locations.**
- **State Committee**



**Clones** multiplication under local laboratory conditions and aphid-proof screenhouse





# Multilocation trials



Uzbekistan



Uzbekistan



Tajikistan



Tajikistan



Early, virus resistant and heat tolerant potato varieties adapted to long-day conditions were selected in Tajikistan, Uzbekistan, Kazakhstan and Georgia.

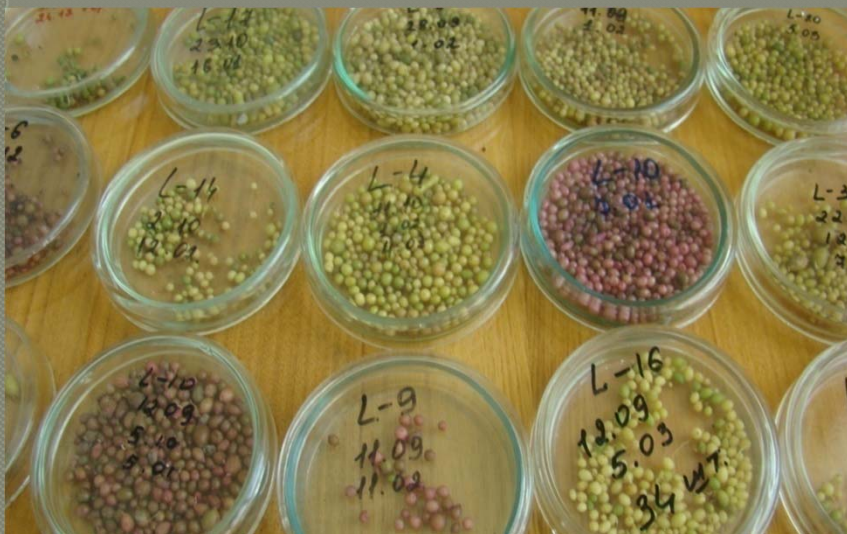
| CIP No    | Realized as a variety in Uzbekistan | Realized as a variety in Tajikistan | Realized as a variety in Kazakhstan | Realized as a variety in Georgia |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------|
| 397073.16 | Serkhosil                           | -                                   | -                                   | -                                |
| 397077.16 | Sarnav                              | Fayzobod                            | Alians                              | -                                |
| 390478.9  | Pskom                               | -                                   | -                                   | -                                |
| 998010    | -                                   | Dusti                               | -                                   | -                                |
| 388676.1  | -                                   | -                                   | Miras                               | -                                |
| 392780.1  | -                                   | -                                   | Ushkonir                            | -                                |
| 388611.22 | -                                   | -                                   | -                                   | Javakheturi                      |
| 388615.22 | -                                   | -                                   | -                                   | Meskhuri                         |
| 392797.22 | -                                   | -                                   | -                                   | Meskhuri Tsiteli                 |



# Micro propagation of CIP's clones under laboratory condition. Institute of Bioorganic Chemistry. Tashkent. Uzbekistan. 2014



Laboratory produced more than 700,000 in vitro plants and micro tubers in 2013-2014.





**500,000 in vitro plants/microtubers were adapted to field condition with total area 5 hectares in 2014.**



Variety SARNAV. Pskom. Tashkent region.2014



Variety SARNAV. Pskom. Djizak region.2014



# Objectives

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- Develop local breeding programs for the supply of more productive, early and medium tuber bulking potato varieties, adapted to LDC, tolerant to abiotic/biotic stress.
- Develop and disseminate appropriate potato production technologies and practices that promote sustainable water management.









Heartfelt thanks.....!