

CIP's Genebank Safety Duplicates

17,618 accessions of potato, sweetpotato, and ARTC germplasm are being stored in Huancayo (Perú) and other places (EMBRAPA, CIAT, and Svalbard) to protect the world's food supply from epidemics, disasters or wars that might wipe out irreplaceable crops.

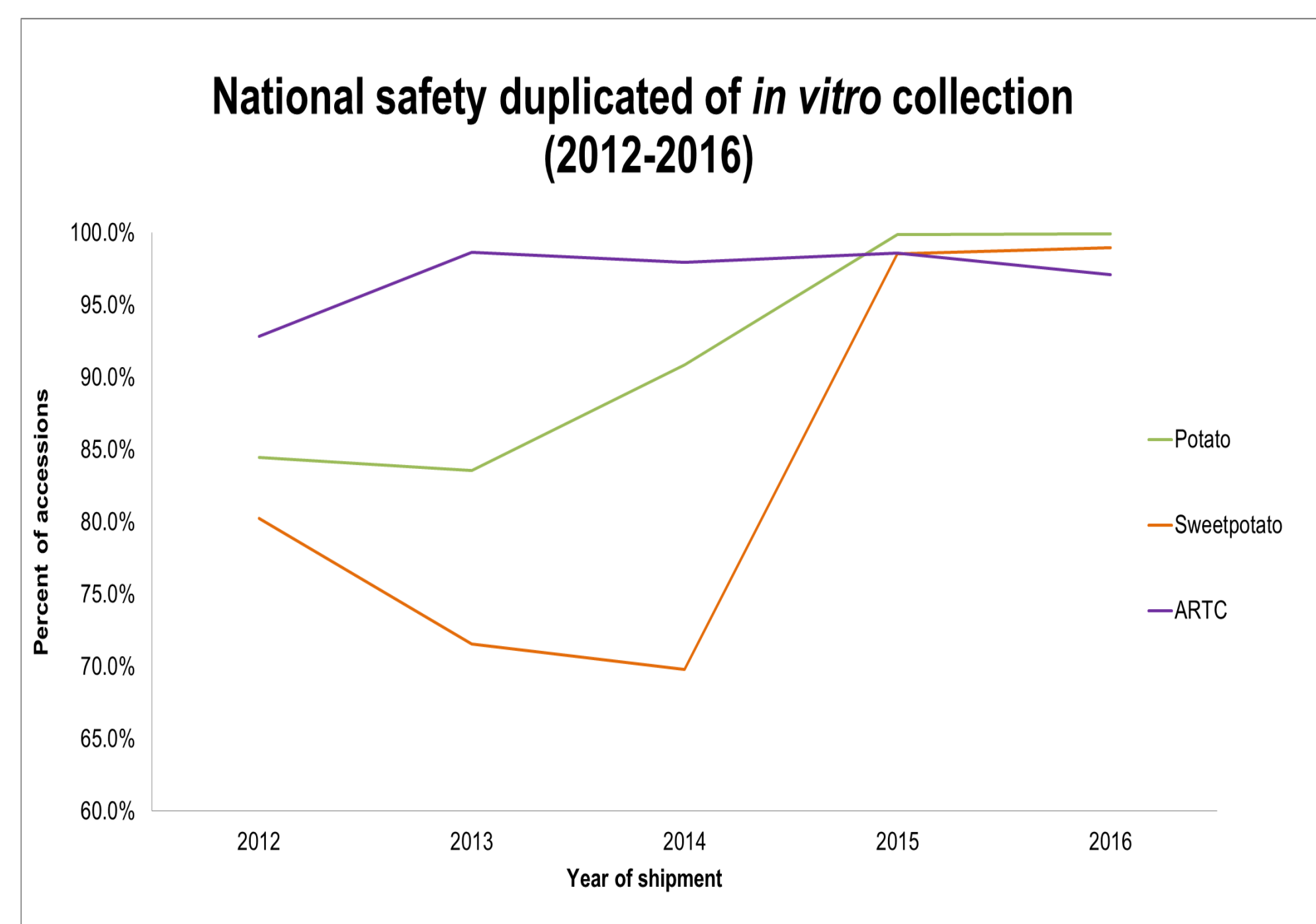
In vitro safety back-ups

4,487 accessions of cultivated potato, 5,328 cultivated sweetpotato and 1,431 ARTCs (oca, ulluco, mashua, yacon, arracacha, and achira) are being stored in the Genebank.

National safety back-ups

CIP- Experimental Station Santa Ana (Huancayo –Perú)

During 2009, the national safety copy was established in order to maintain the germplasm safe from disasters. This collection has rapidly increased.



During 2013, two chambers were built by CIP in collaboration with the GLOBAL CROP DIVERSITY TRUST. These chambers have the following characteristics:

- Security doors requiring authorized password.
- 24 hour video monitoring system.
- Two temperature controlled chambers were built. One of these is maintained at 5 to 9°C and the other at 18 to 22°C.
- Sensors monitor chamber temperature.

During 2016, we safety backed up 99.4% of potato collection, 97.1% of ARTc collection and 99.0% of the sweetpotato collection.

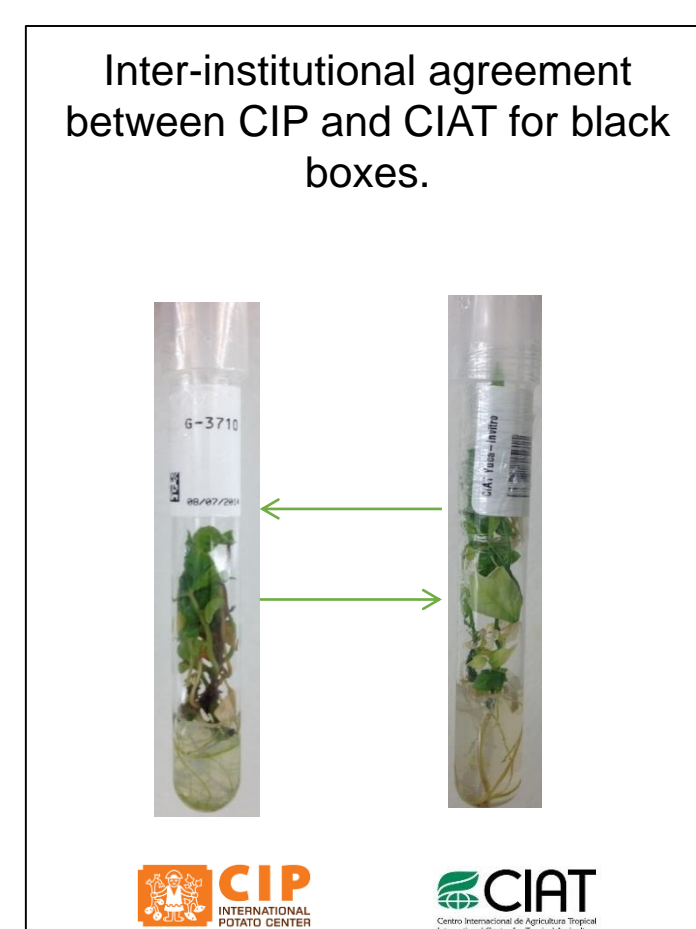
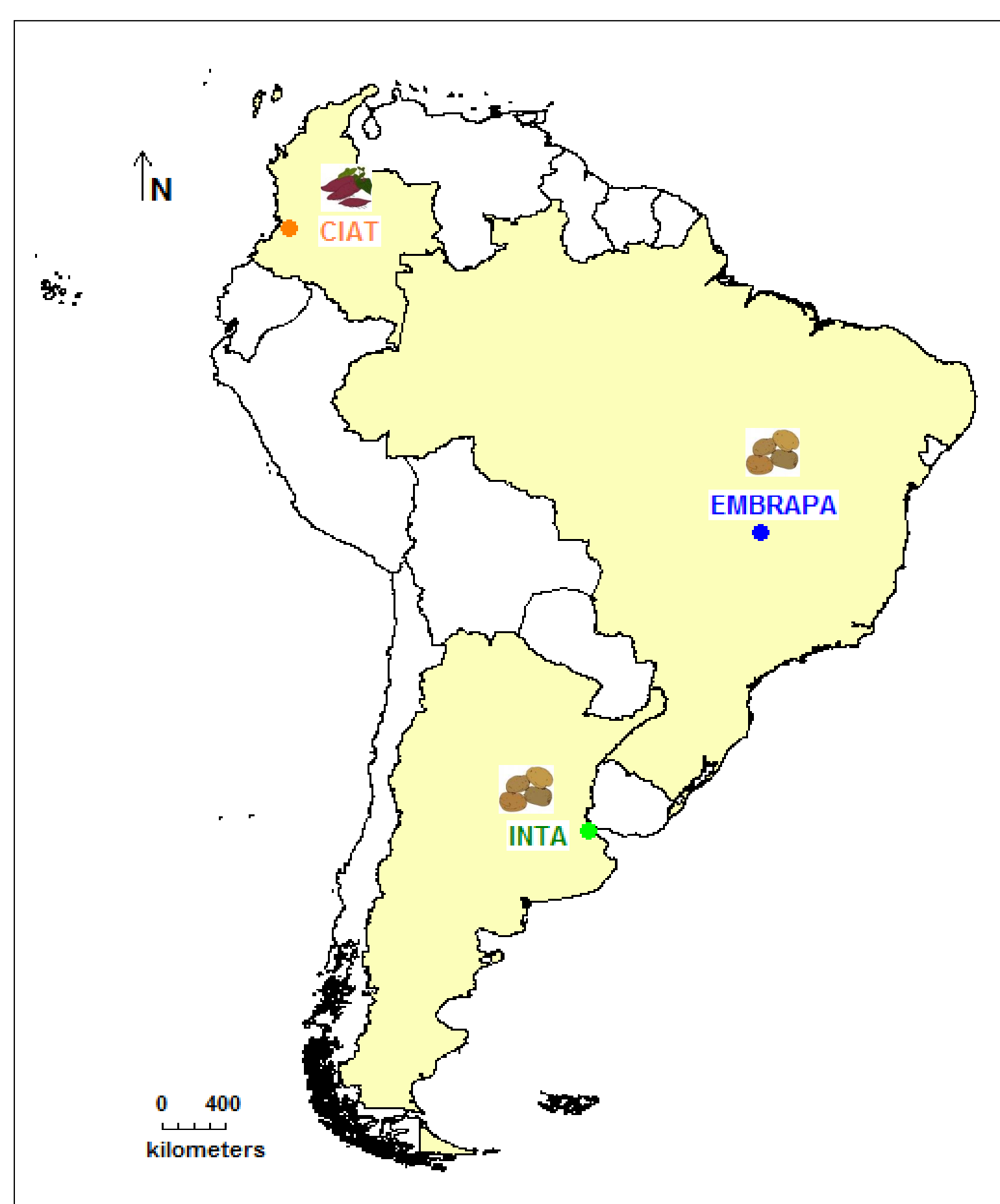
Crop	Institution	Number of accessions
7±2°C	Potato	4484
	ARTCs (oca, ulluco and mashua)	1390
20±2°C	ARTCs (achira, arracacha and yacón)	
	Sweetpotato	5273

On-going activities: in vitro safety copies:

- This year, four shipments are in schedule with CIAT: the first shipment containing 1,185 accessions were sent in January, the second shipment with ~2,400 accessions will be sent to CIAT before the end of June, the third shipment will be in August with ~2,000 accessions and at the end of year 1,000 accession will be shipped.
- Two shipments will be sent to EMBRAPA for replace the 50% of the collection.

International safety back-ups

- Since 2005, an agreement between CIP and CIAT has been established to maintain the blackbox of cassava and sweetpotato, respectively. In the last three years, CIAT was not available to get import permits, but this obstacle was overcome at the end of 2016. In January 2017, the routine was restarted and the first batch of cultures was sent.
- In 2014, an agreement for safety copies was established with EMBRAPA, Brasília, Brazil. This new location replaced INTA, Buenos Aires, Argentina, that stored the safety copy of potato from 2000 to 2015.
- During 2016, we safety backed up 99.4% of potato collection at EMBRAPA.



Crop	Institution	Temperature	Percent of accessions in 2017
Potato	Brazilian Agricultural Research Corporation (Embrapa, Brasília-Brazil)	10±2°C	99.4%
Sweetpotato	International Center for Tropical Agriculture (CIAT, Cali-Colombia)	23±1°C	23.8%

Seed safety back-ups

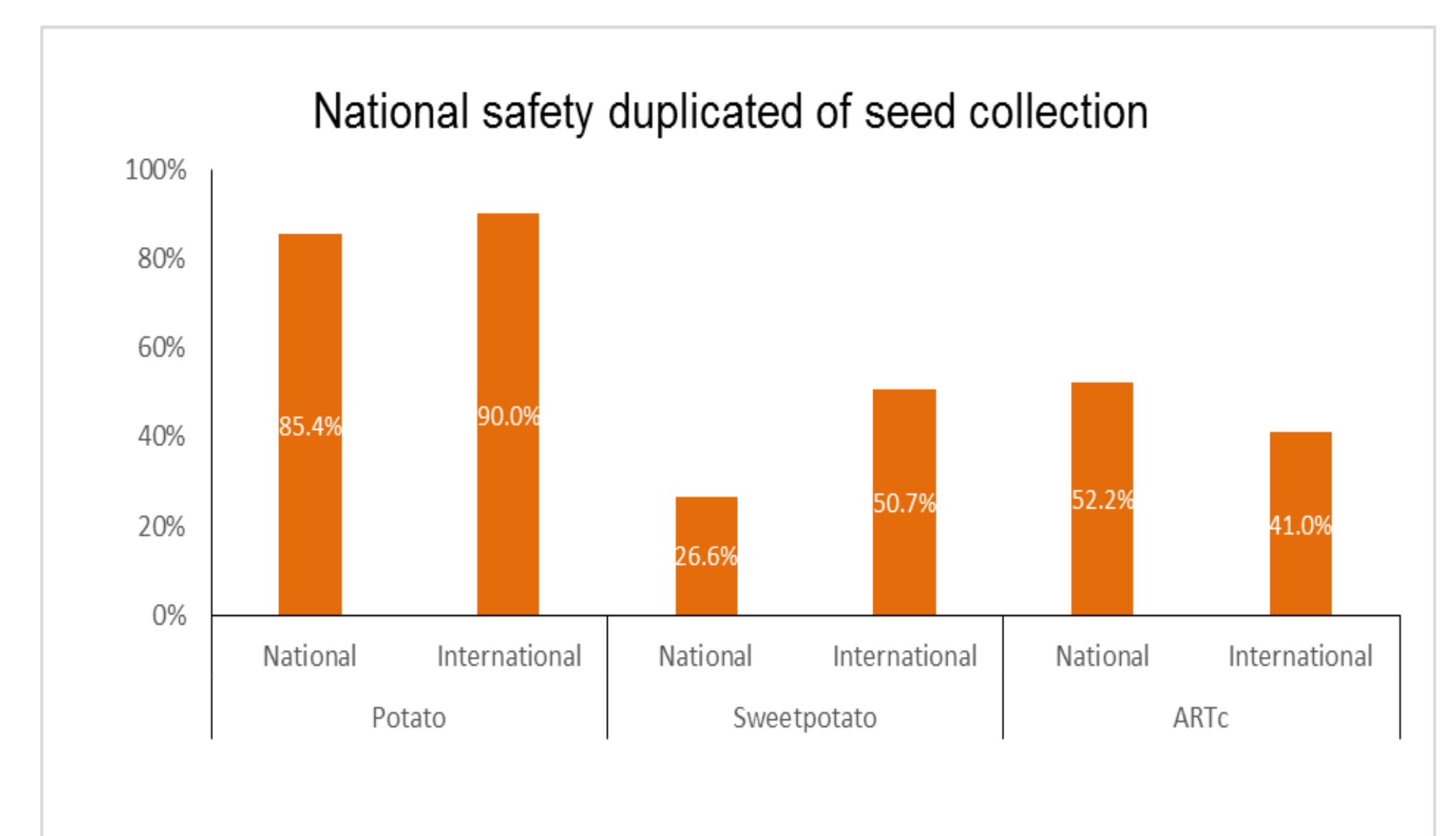
2,361 accessions of wild potato, 1,092 wild sweetpotato and 534 ARTCs (maca, ahipa, and mauka) are currently stored in the Genebank.

National safety backups

CIP- Experimental Station Santa Ana (Huancayo –Perú)



In 2013, two freezers at 0.4 to -4°F (-18 to -20°C) were installed. In 2016, 289 accession of wild potato, 47 accession of sweetpotato, and 96 accessions of maca were sent as safety backup.



International safety backups

Svalbard Global Seed Vault



On October 2016, 579 accession were sent to Svalbard.

Crop	Number of accessions
Wild potato	1837
Wild sweetpotato	554
ARTc	219

CIP's Corporate Plan 2014-2023:

- A minimum of one national genebank collection is safety backed-up at CIP annually.
- 25% of CIP potato collection backed up in cryopreservation off site internationally.