

True Potato Seed Revolution



Charles Miller – Director of Strategic Alliances & Development
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Who is Solynta

'We are unlocking the True Potential of Potatoes'

Our mission:

To provide hybrid potato innovations to enhance the livelihood of producers around the globe.

With our hybrid potato varieties grown from true potato seeds, we will drive sustainable improvements in world food security.



Global Agricultural Challenges



Population growth: population is expected to increase 60% by 2050. As a result, food demand will also increase dramatically.



Reduction of per capita cultivation area: less arable land available for agricultural purposes



Climate change: world requires new adapted and robust crops that can withstand climate changes.



Harvest losses: common harvest threats such as insects, weeds, fungal diseases, and storage damage cause high losses



Limited resources: fresh water is scarce; restrictions on agricultural chemical usage



These factors contribute to Food Insecurity

Challenges Faced by the Potato Industry



Breeding is hodgepodge, chaotic – very few genetic gains realized over last century



Lack of healthy starting material – seed tubers are prone to disease and pests



Transportation and storage issues: high volumes of tubers required: difficult and costly to ship and store



Harvest losses: Threats such as insects, weeds, fungal diseases, and storage damage can cause immense yield loss



Pesticide usage high: intensive use of agricultural chemicals required, restrictive legislation underway



Hybrid Potato breeding technology contributes to the world's challenges:



Population growth: Solynta's hybrid potato breeding technology will help meet the needs of a growing population, with the availability of abundant nutritious potatoes



Optimal use of available agricultural land: strong new crops will deliver predictable, high yield.



Climate change-resilient new potato varieties will ensure growers can feed their communities in all geographies



Harvest losses are reduced considerably with new robust, disease and pest resistant varieties and the use of **clean starting material**



Water usage is reduced as potatoes use far less water than any other large staple crop
Robust hybrid potatoes will require less harmful agricultural chemicals





Revolutionizing Potatoes: A Journey from Conventional to Hybrid Breeding

Hybrid breeding is a proven technology

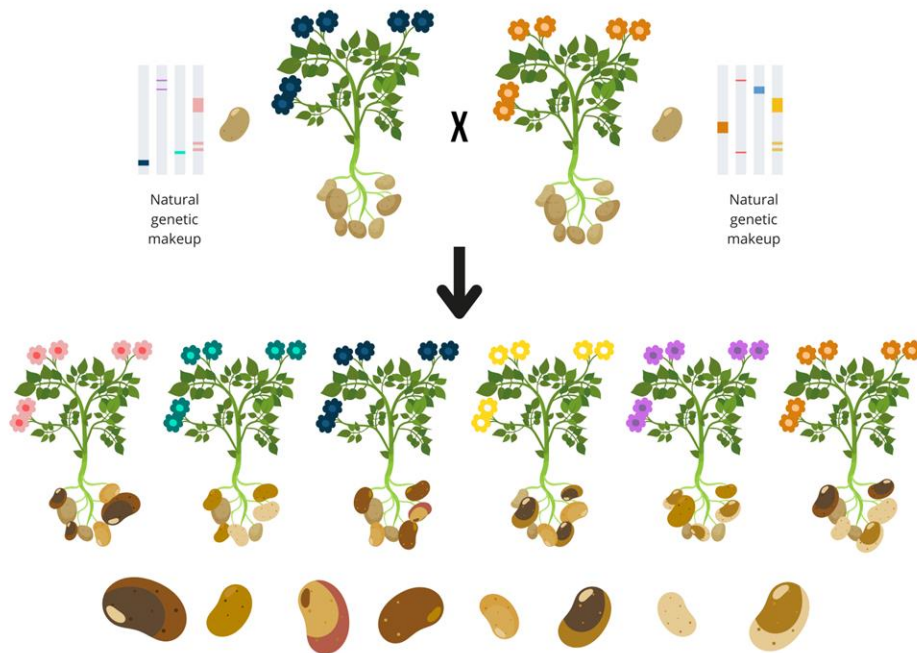
- Hybrid breeding is the crossing of two genetically different (or distinct) parental lines to create new genetically identical offspring with favourable traits.
- Maize, sunflower, rice and sugarbeets
 - Maize has seen a 3-fold increase in yield since being hybridized
 - Sunflower yields have almost doubled
 - Rice hybrids yield 20-30% more than OP varieties
 - Sugarbeet yield has doubled in 10 years
- Yield is not the only reason to use hybrid breeding
 - Improved disease resistance, plant structure and downstream uses (chips/fries)



Traditional breeding vs Hybrid potato breeding

TRADITIONAL POTATO BREEDING

Complex and unpredictable

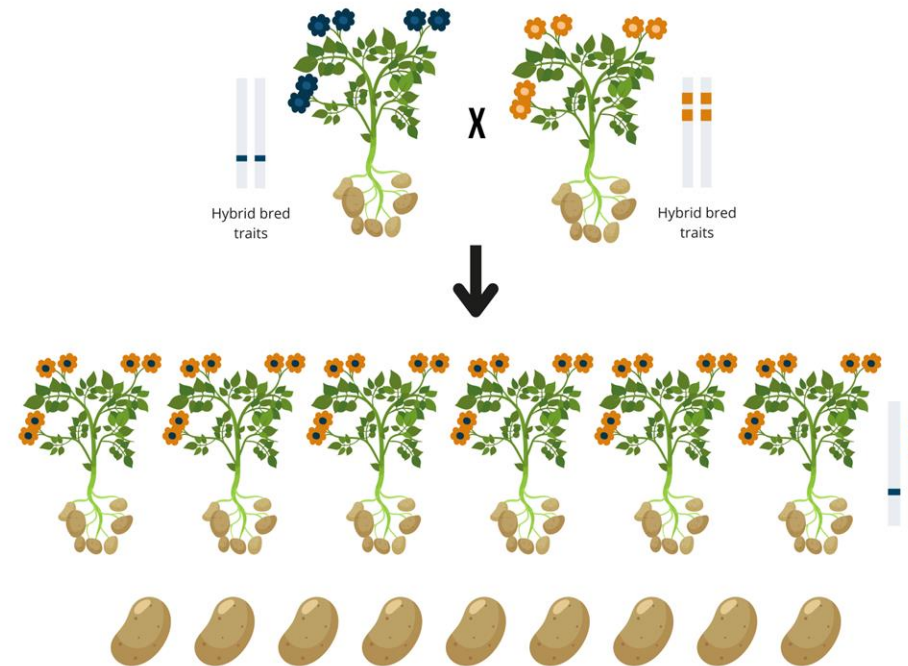


Outcomes are **RANDOM.**

Targeted breeding for selected traits can take **15-50 YEARS.**

HYBRID POTATO BREEDING

Fast and predictable



Offspring are **IDENTICAL.**

Targeted breeding for selected traits only takes **2-4 YEARS.**

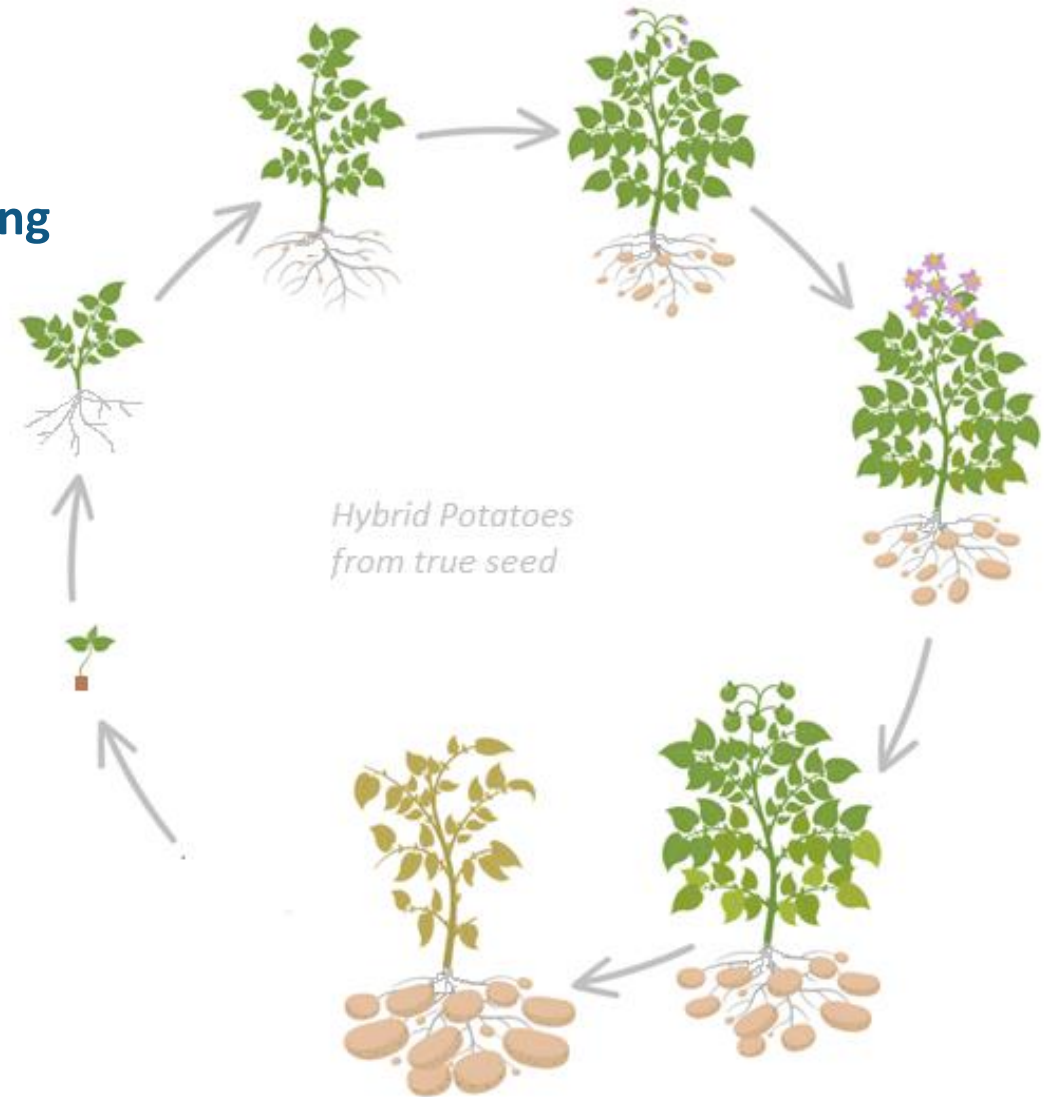
Advantages of hybrid potato breeding of potatoes

- **Consistent and predictable offspring** produced through hybrid (non-GMO) cross-breeding techniques.
- Enables targeted breeding for desired traits, e.g. enhanced **disease resistances** and robust crops that can withstand **climate change**.
- Focused breeding enables the **fast development of new varieties in 2-5 years vs. 15-50 years**
- True Seed improve the **scalability** of new varieties



Advantages of growing potatoes from True Potato Seed:

- **Clean starting material:** disease free true potato seed
- One seed produces one new potato plant with **offspring that has predictable**, desired characteristics
- One seed produces **comparable yield** to one tuber
- **Limited volatility** in production cost, market fluctuations.
- 365 day/year **seed availability**
- **Consistent quality**
- Easy **Transport** and simplified **Storage**





**Now let's see True Potato Seed
in action....**

Kenya

Namibia

Japan

Romania

Mlango Farm - Kenya



“Solynta has **made it possible** for us to **supply our customers** with potatoes on a regular basis. We have not been able to achieve this in the last 16 years. We surveyed our customers, and they **enjoyed the flavour** of these new varieties very much.”

Namibia

“Complex supply chains create **logistical bottlenecks** and affect the lifespan of the potatoes. With new hybrid potato varieties grown from **Solynta’s Hybrid True Potato Seed (HTPS)** we can address these challenges. After these successful trials, we are confident that the issues of local supply and **food security can greatly improve**, as well as farmer economics and sustainability in Namibia, using new hybrid potato varieties grown from hybrid true potato seed (HTPS)”



Japan

“True potato seeds have allowed us to **import new potato varieties**. Some of these varieties **have resistances** that we didn’t have in the past which **benefit our growers.**”



Romania - Agris


“We distribute the **seedlings grown from hybrid true seed** via our outlets and our regular shipments to the entire region. Many small potato growers are excited about the new concept; the **best quality starting material** will offer them the chance to grow a better yield than ever before.”



Solynta Unlocks the True Potential of Potato



- Our innovative hybrid potato breeding technology creates sustainable solutions for global challenges.
- By collaborating with partners worldwide and applying our groundbreaking technology we create long-lasting impact on the global food supply. We envision a future where hybrid potatoes are widely used.
- Solynta is the first to successfully breed and commercialize hybrid potatoes from true seeds.



*Solynta
true potato seeds

Thank you

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