Euroseeds introduction to TPS

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- Euroseeds TPS group has now come together to:
  - **Share the innovation and benefits of TPS** with the outside world
  - **Jointly engage** to clarify policies on regulatory issue
  - Clarify regulatory affairs and improve responsible movement of TPS between countries

Do we contribute to meet the global challenges of high-yield crops?

Population growth: Food demand is expected to rise by 60% through 2050

Reduction of per capita cultivation area: The population is growing faster than the acreage

Climate change: Change in abiotic stress requires new variety characteristics

Harvest losses: 10-15% due to insects, weeds, fungal diseases and damage in storage

Limited resources such as water, fertilizers and pesticides

Advantages of TPS & hybrid breeding

- More efficient seed production: multiplication 100+
- Limited transmission of diseases via TPS
- Lower logistic and seeding costs (25-100 **g** TPS vs 3.000 **kg** tubers for 1 ha)
- More efficient and effective breeding platform

Zoom-in: TPS provides very safe starting material from phytosanitary point of view

Overview of potential presence quarantine pathogens by planting material type

Pathogen type	True Potato Seed	Minitubers Microtubers	Tissue culture	Seed tubers incl. soil
Bacteria	2	6	5	>5
Fungi	0	8	0	>7
Phytoplasma	0	7	7	>6
Viroids/viruses	7	35	35	>35
Nematodes	0	5	0	>5
Other	0	2	0	>2
Total	**9**	**63**	**47**	**>62-200**

Source: Australian Government, Department of Agriculture, Fisheries and Forestry, "Review of policy: Importation of Potato (Solanum tuberosum) propagative material into Australia" & EU PRA

- TPS at least as good as Tissue Culture
- Final phytosanitary risks dependent on further multiplication

Even further reduced (0 possible) under controlled conditions

Hybrid Seed Product Development

- Flexible combination of parent lines into hybrid products
- Faster introduction of new varieties
- For both diploid and tetraploid breeding approach

TPS has the potential to contribute to meet the global challenges

Expand potential growing areas with less seed health restrictions

Save growing area with higher multiplication

Faster development of Robust, Resistant & Efficient varieties

Save resources with more efficient logistics

Population growth: Food demand is expected to rise by 60% through 2050

Reduction of per capita cultivation area: The [illegible] is declining faster than the increase

Climate change: Change in abiotic stress requires new variety characteristics

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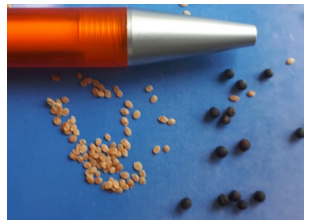
Challenges for Hybrid Potato Seed Breeders

- Catch up to the performance of current platforms


- Longer growing cycle of potatoes from seed


- Very small seed




- Seed production


- Completely different Agronomy:
  - Germination and Seedling vigour
  - Weed control
  - Planting scheme

Challenges for Hybrid Potato Seed

International regulation & practise aligned with clonal based regulations and other seed crops

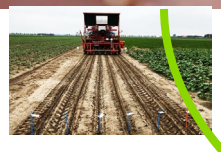
We want to work together with stakeholders

Growing models












Conclusion

TPS technology contributes to sustainable growth:

- **Less use of plant protection products**
- **Limited disease transmission**
- **Easy transportation**
- **Etc.**

Growing TPS and seed potatoes is based on completely different technologies with completely different phytosanitary risk profiles and therefore logically should lead to a different set of regulations to ensure safe movement of goods between countries

- Seed potatoes and true potato seeds require different growing systems, both with their own advantages and disadvantages
- Though different, the systems can be complementary
- Today's potato regulations focus on the potato cultivation from seed tubers, therefore different regulations are required for TPS cultivation
- For the potato-sector, we see a common interest in managing this innovation in the right manner

But some aspects will remain unchanged

Multiplication through tubers will still be part of the growing system and should be fit into the existing regulatory platform

UNECE contribution to TPS work:

- Open to look at this new type of potato production
- Open discussion and understanding about the challenges faced on production and marketing of TPS

Thank you!

Questions?

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