

InnoPlant, a combined research and innovation program between INRA and the French potato seed industry



The InnoPlant Joint Technological Unit was established in 2012 by the FN3PT / RD3PT (French Federation of Seed Potato Growers) and INRA (French National Institute for Agricultural Research) as a tool to **promote innovation and increase competitiveness of the French seed potato industry**. GNIS (French Interprofessional organisation for seeds) and ACVNPT (French Association of Potato Breeders) are associated partners for some activities.

InnoPlant has a scientific program that combines research, development, dissemination and transfer on four major themes:

- Health of seed potatoes
- Breeding for sustainable genetic resistance to different pathogens
- Integrated pathogens management
- Competitiveness of the sector and communication

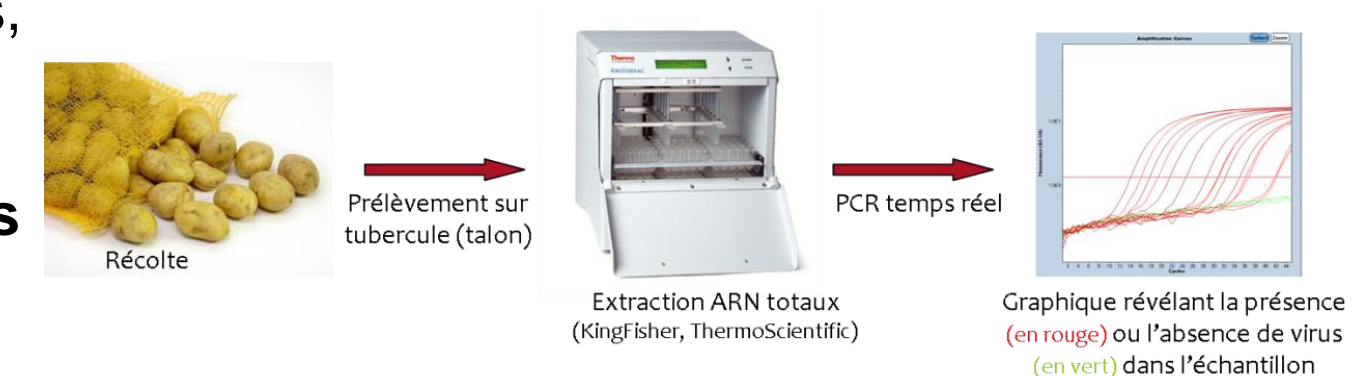
Health of seed potatoes

- **Identification tools for major seed potato pathogens**
 - Potato virus Y, *Pectobacterium* and *Dickeya* species, fungus (*Rhizoctonia solani*) ...



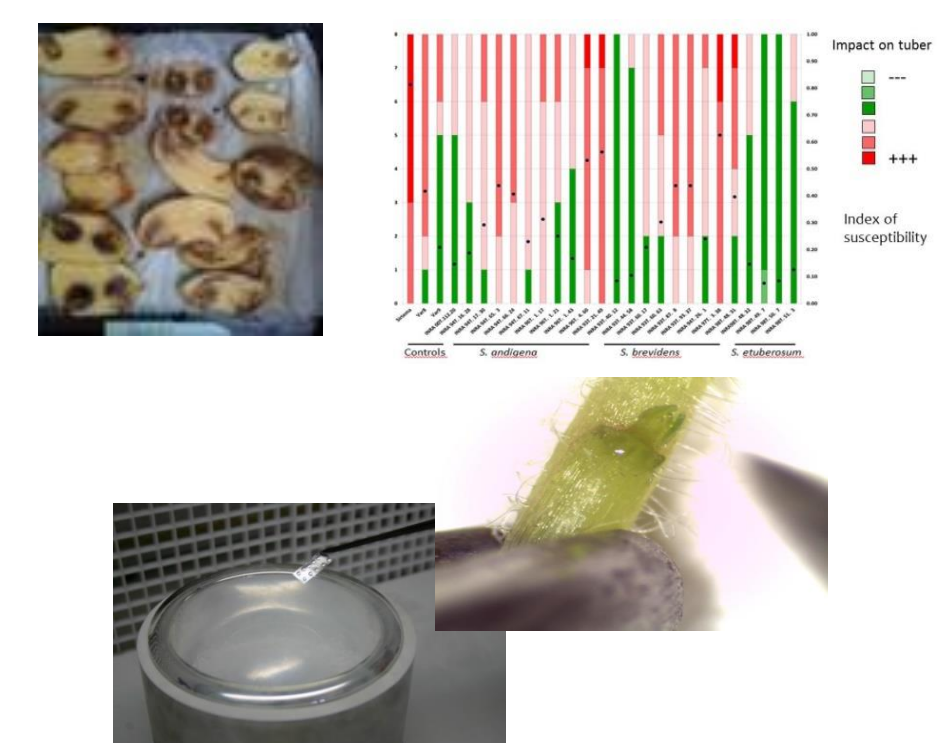
- **Pathogen detection (in different matrixes) with fast and reliable tools**
 - E.g.: quantitative PCR for PVY to detect the virus directly on tubers, detection of *Meloidogyne* and *Globodera* sp in the soil, ...

- **Pathogen characterization, including potentially emerging populations**
 - E.g.: pathogenic and molecular typing of emerging strains of *Pectobacterium* and *Dickeya*,
 - Research projects : NEMATOOLS on nematodes (driven by FN3PT) and CALISO on Candidatus *Liberibacter solanacearum* (driven by ANSES)



Breeding for sustainable genetic resistance to potato pathogens

- **Characterization of multi-resistant breeding lines :**
 - PVY virus, foliage late blight, *Globodera pallida* and *Meloidogyne incognita*.
- **Assessment of resistance to emerging or newly identified pathogens**
 - Focus on pectinolytic species *Pectobacterium* and *Dickeya*
- **Development of knowledge on the genetic structure and the phenotypic value of the genetic resources**
 - Collection of genotypes from INRA BrACySol Biological Resource Center (BRC) and breeding companies.
- **Implementation of a long term cryopreservation method**



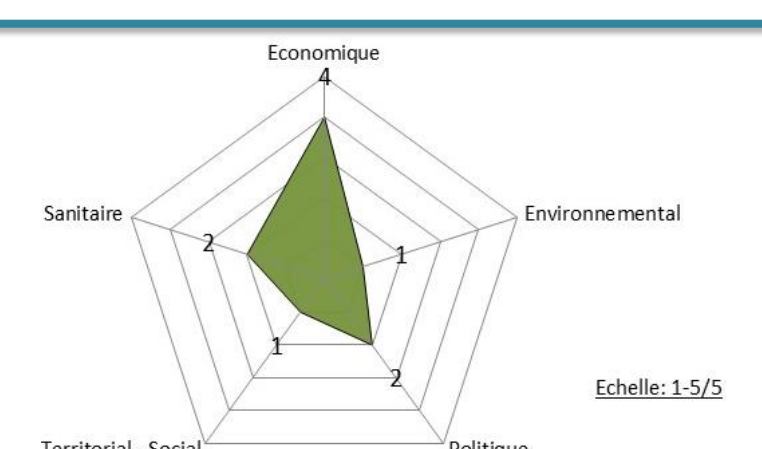
Integrated pathogens management in seed potato production

- **Identification and evaluation of crop practices and control methods**
 - e.g. survey on crop practices in seed production and link with specific diseases
 - Effect of previous crops and of the intercropping period on potato soil borne pathogens
- **Designing innovative strategies based on the combinations of complementary practices and varietal resistance for the effective management of pests and diseases**
 - Combined control of multiple potato pathogens (pests and diseases)
 - Contribution to the building of a national network on low inputs potato production



Innovation and competitiveness of the seed potato sector

- **Evaluation of the factors of competitiveness of the sector, including the impacts of the research programmes set up by the seed potato industry and Inra public research**
 - e.g. ASIRPA study on the impacts of collaborative research on diagnostic tools for potato diseases



Impact radar : the case of pathogen diagnostic tools, ASIRPA 2014

- Improving the **dissemination of research results** and the **visibility of the research partnership** between INRA and FN3PT :
 - Publications and oral communications
 - National meetings (Carrefour de la Recherche Plant)
 - Website



"Carrefour Recherche", May 2014

<http://www.umn-innoplant.fr>

Two Partners

ACVNPT
French Association of potato breeders

gnis
groupement national interprofessionnel des semences et plants
The French Association for Seeds and Seedlings

Funding Partners and DGER
(a division of the French Ministry for Agriculture and Forestry)



UMT affiliation to ACTA network

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