



Develop resistant banana plants
and provide concrete solutions
for French banana growers,
as well as industry players

A multi-partner project to create new varieties resistant to black sigatoka,
and introduce banana diversity to the markets

An original and daring approach

**3 avenues for creating new banana varieties:
conventional improvement, genome editing and a combination thereof**

The project is based on **combining 2 approaches, to open up 3 possible avenues** for creating new varieties: **conventional cross-breeding improvements** (creating new hybrids), **genome editing** (making Cavendish more resistant) and **a combination thereof** (improving the quality of resistant hybrids, as required). Hence the **bana+** partnership develops a **unique integrated approach** to sustainably combating black sigatoka and providing **solutions** for banana growers and the industry as a whole. It was derived from the PARSADA programme run by the French Ministry of Agriculture and Food Sovereignty.

Advantages of bana+

Partner expertise

Cirad: conventional improvement of banana plants through cross-breeding

Vitropic: cell biology, banana plant editing and reproduction techniques

Inrae: phenotyping and genomic methods

IT2: banana cropping systems

Recent scientific advances

in banana genetics and genomics,
as well as its pathogens

A varietal creation and selection platform

The bana+ dynamic

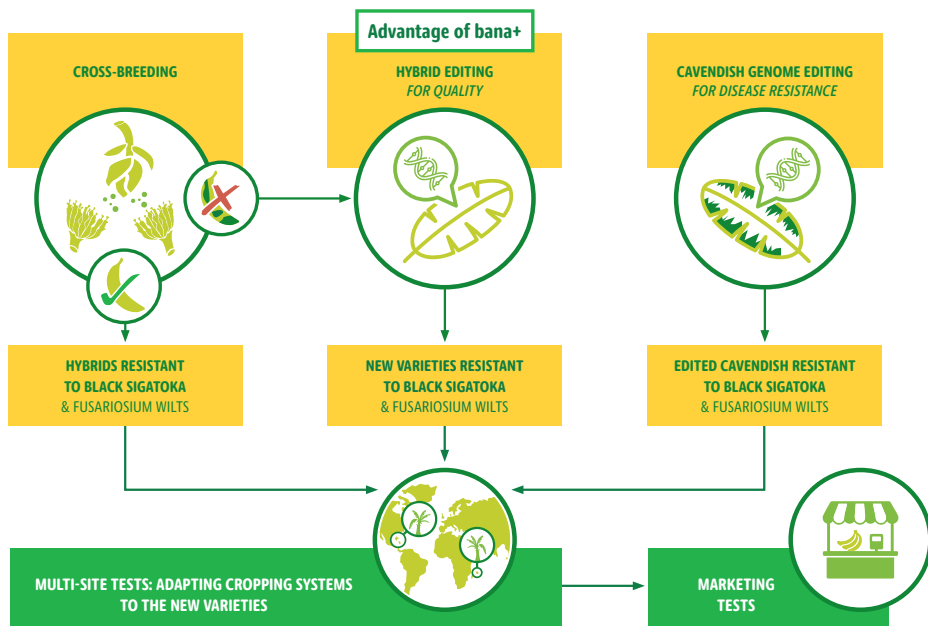
Partnership: Cirad, Vitropic, Inrae, IT2

Duration: 2025-2029

3 trial sites:

Guadeloupe, La Réunion, Martinique





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Multiple challenges

Sustainable management of **black sigatoka disease**

Support French growers in their **agro-ecological production** approach

Reduce use of **pesticides**, and anticipate regulatory changes relating to them

Contribute to the **diversification** of cultivated **varieties**, and also to **market** segmentation

Anticipate future **challenges** (TR4 fusarium, climate change)

The PARSADA action plan: develop alternative solutions

Set up by the French Ministry of Agriculture and Food Sovereignty in 2023, the objective of PARSADA is to support the industries in putting together and implementing specific action plans. It encompasses the research phase through to the roll-out of alternative solutions for anticipating the potential withdrawal of certain phytopharmaceutical active substances used in one or more agricultural industries. It embodies the principle "no bans without solutions".

For more info: <https://agriculture.gouv.fr/>

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