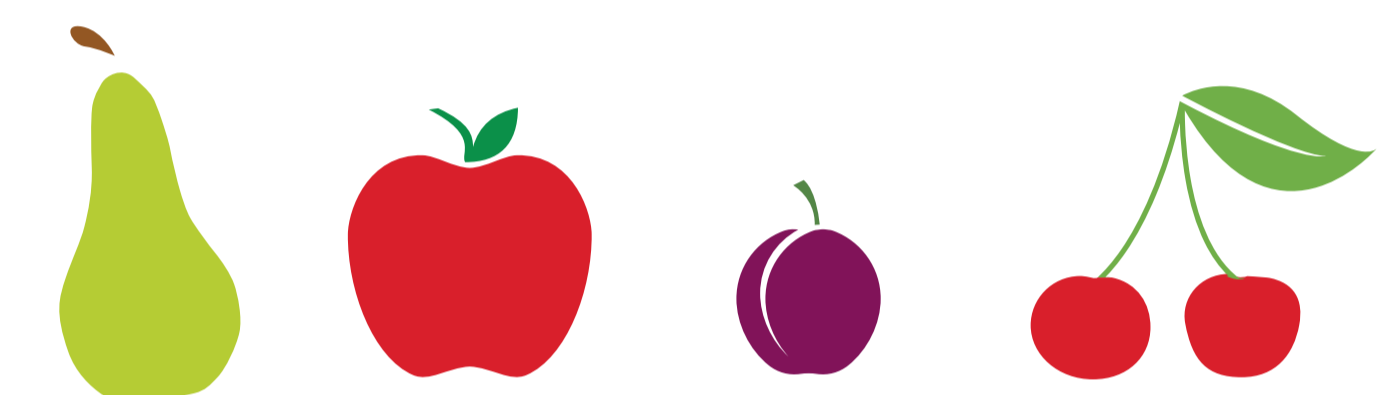




Exploiting the Untapped potential of Fruit tree Wild Diversity for Sustainable Agriculture



FruitDiv is a European research project launched on the 1st of January 2024. The project is funded under the Horizon Europe framework for a period of five years (January 2024-December 2028). FruitDiv aims to monitor, characterise, use, and conserve the diversity of fruit tree Crop Wild Relatives, with a particular emphasis on pome (Malus, Pyrus) and stone (Prunus) fruits.

Crop Wild Relatives (CWR) are wild plant species closely related to cultivated crops. They hold important potential as a source of genetic diversity, offering agronomic and nutritional traits like pest and disease resistance, tolerance to drought, and adaptability to fluctuating climatic conditions affecting fruit quality and production. Harnessing this genetic diversity is crucial for enhancing crop improvement, ensuring sustainable agricultural practices, tackling climate challenges and meeting the demands of food security and better nutrition.

This approach aligns with the goals of the European Green Deal, and the Biodiversity and F2F strategies, aiming to reduce pesticide use. Moreover, fruit trees' long lifespan and a current production dominated by only few cultivars make them particularly vulnerable to the effects of global changes. Further research and conservation efforts are thus needed to unlock the full potential of fruit tree CWRs and secure our agricultural future.

IN THIS CONTEXT, THE FRUITDIV PROJECT AIMS TO:

- **Monitor CWR in the European genebanks** among the European historical hotspots of diversity;
- **Characterise genetically CWR** to establish ex situ collections representative of the CWR diversity to be further multiplied in common gardens, and to identify key CWR natural populations to be preserved in situ;
- **Share and develop new and high-throughput phenotyping tools** and protocols for the evaluation of traits linked to resistance to pests and diseases, and adaptation to low-input cultivation systems in highly contrasted environments;
- **Integrate CWRs in plant genetic resources collections and breeding programs** by developing new methods for wild-to-crop translational research;
- **Promote sustainable data sharing** by standardising and giving access to FAIR (Findable, Accessible, Interoperable and Reusable) genotypic and phenotypic Open Data;
- **Develop pre-breeding material and CWR-adapted methodologies for breeding** at single and multi-trait scales, making use of existing or future multi-site experimental designs and predictive models;
- **Foster a more efficient and sustainable conservation of CWR**, in situ, on-farm and through NGOs, and enhance stakeholders' awareness of the value and importance of CWR; and
- **Promote the use of CWR or first-generation pre-breeding material** by breeders to disseminate plant material of interest for growers, organic farmers and the fruit tree industry.

The FruitDiv consortium is coordinated by INRAE (France) and includes 26 multi-disciplinary partners from 10 EU Member States and four other European countries. ■ **CONTACT: Véronique Decroocq, Project coordinator, veronique.decroocq@inrae.fr**

