

Designing InnoVative plant teams for Ecosystem Resilience and agricultural Sustainability” DIVERSify.

H2020 project from May 2017 to April 2021

Participants: 23 members coordinated by Dr. Alison Kailey from The James Hutton Institute, United Kingdom

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Project goals

Overall goals:

The overarching goal of DIVERSify is to provide a novel system for sustainable food production and nutrition, resource-efficient production and value chains, and healthier diets. DIVERSify will produce knowledge and tools to support the adoption of productive and resilient agricultural systems which capitalise on the benefits of high plant species diversity, enhance understanding of how synergistic plant teams can contribute to yield stability, reduce yield losses to weeds, pest and diseases, and increase resilience against environmental fluctuations and management practices. DIVERSify is a multidisciplinary and strategic multi-actor partnership bringing together European and international centres of research excellence, farmers, extension services, breeders and SMEs. This partnership will co-construct a new applied approach and the tools to support its implementation, unravelling the mechanisms underpinning the benefits associated with cropping of plant teams (associations / mixtures of species), and the plant traits and agronomic practices promoting these benefits. This will be achieved through scientifically-proven, field-tested evidence on ecological mechanisms, concepts and methods to identify important crop traits and cultivars for plant teams, and tools and guidelines for farming practitioners in diverse pedo-climatic conditions to promote diversity-rich crop breeding and management practices.

Problem definition:

A 60% increase in agricultural production is required by 2050 to feed the growing global human population. The rapid increases in crop yields achieved post-1950 through crop breeding advances and farming inputs are now starting to plateau. At the same time, there is pressure on farmers to produce food sustainably with fewer inputs due to decreased availability of products for effective pest and disease control and to minimise environmental damage. This poses a significant challenge for maximising productivity and reducing losses, creating an urgent need to increase the efficiency and sustainability of agriculture in Europe and globally. There is no single solution to this challenge. Crop scientists must devise novel cropping systems for farmers to DIVERSify.