

## **Exploring the impact of iron nanoparticles applied as foliar fertilizer on seedling of different crops**

Miriam DISTEFANO - Institute of BioEconomy (CNR-IBE) – Catania

The application of nanoparticles (NPs) in agriculture has gained considerable attention for their potential to enhance crop yield and/or quality, reducing, in the meanwhile, the amount of agrochemicals to be applied. However, despite significant advances in nanomaterial synthesis technologies over the past two decades, agronomical issues affecting actual applications of nanofertilizers at crop level still need to be experimentally verified and validated. In alignment with the primary objective of the SAMOTHRACE project to promote agri-food chain sustainability through enhanced agrochemical efficiency, a controlled laboratory-scale protocol was developed to quantify spray drift effects during canopy application. This protocol enabled precise measurement and minimization of fertilizer (target element) dispersion phenomena while accurately determining the amount of fertilizer effectively intercepted by seedling's canopy. Within the framework of precision agriculture principles, this approach aims to establish reliable dose-response relationships for optimized nanofertilizer application protocols.