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Carinata and Camelina, two minor Brassicaceae with great potential for the European bioeconomy

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Background:

The European bioeconomy is urgently looking for new sustainable and domestically grown feedstocks able to feed different types of end-uses, both food and non-food. The actual European environmental and agricultural policies are pushing for the choice of crops able to meet both low carbon footprint, high impact on biodiversity and satisfactory revenues for farmers. All this complicated situation is further exacerbated by the effects of climate change, which is strongly and negatively impacting many stable European cash crops.

Objective:

In this context the CARINA "CARinata and CamelINA to boost the sustainable diversification in EU farming systems" project, which has been funded by the Horizon Europe framework program with over 8M€ began in November 2022. It addresses all the above-mentioned challenges through the introduction of two novel oilseed Brassicaceae, i.e., carinata (B. carinata) and camelina (Camelina sativa), which have been identified as suitable for different European pedo-climates.

Methods:

These two oilseed crops have been previously studied and are already introduced in some areas of Europe, as promising species, particularly in marginal land where oilseed rape is not highly productive. Within CARINA, the introduction of carinata and camelina in different cropping systems will be demonstrated in nine different EU and northern Africa countries, namely Italy, Serbia, France, Spain, Greece, Bulgaria, Poland, Tunisia, and Morocco. Carinata and camelina have been identified as low-input, high resilient and very plastic crops, able to fit different environments and cropping systems. Furthermore, these oilseeds have positive effects on the environment, promoting above and below-ground biodiversity, recycling nutrients, and being able to stock relevant quantities of carbon in the soil. The different fractions of carinata and camelina seeds, i.e., oil, meal and co-products, will be used to source multiple end-products, such as biofuels, bioherbicide, biopesticides, animal feed ingredients, and human supplements.

Results:

The first year's results from multiple field trials, established in Italy, by the University of Bologna, and in Serbia, by the Institute of Field and Vegetable Crops, will be presented. In particular, camelina has been tested as winter cover crop, allowing double cropping with typical summer crops, i.e., sorghum and sunflower, while carinata has been tested in intercropping systems with legumes, i.e., chickpea and pea.

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