The **4th iPlanta Conference** with theme "**Contribution of RNAi to sustainable agriculture, food safety and security**" will be organized in **Athens (President Hotel)** from 26-28th February 2020 in cooperation with researchers of **NCSR "Demokritos"**. For Greece, the following research centers/universities are involved: **NCSR "Demokritos"**, FORTH-IMBB and University of Thessaly.

The defense of crops against new pathogens and parasites is one of the main challenges that the agriculture sector is currently facing. The economic damage caused by various emergencies linked to recently spread harmful organisms, such as the western corn rootworm and the whitefly (both agricultural pests), amounts to about one million euros per year globally.

Technical and scientific innovation has an important role in guaranteeing the environmental, economic and social sustainability of this field. Access to all technologies available, including biotechnologies, is fundamental to face new dangers and reduce the use of pesticides in agriculture.

Promising results come from new methods based on the gene silencing system by interfering RNA (RNAi), which is able to enhance the defense capabilities of plants to respond to the attack of pathogens. With the RNAi technique it is possible to modulate the expression of plant genes without requiring the expression of new molecules. The characteristics of mobility through the plant's vascular system offer the possibility to transform rootstocks for woody plants for stable expression of RNAi, conferring resistance to scions producing fruits. RNA molecules can also be produced and applied as a topical treatment to plants to change their physiology or/and control on pests and pathogens. It is realistic to consider imminent the availability of dsRNA as a biopesticide applicable as foliar spray, seed treatment or directly in the soil.

The **iPlanta project** (https://iplanta.univpm.it/), organized within the framework of the European program Horizon2020 COST and coordinated by Prof. Bruno Mezzetti (Polytechnic

University of Marche, Italy), aims to connect the main research groups active in RNAi technology in Europe and America, with international organizations such as EFSA, FAO and private companies. The organization of the **4th iPlanta Conference in Athens** gives an opportunity of distinguished scientists to present the latest developments with respect to this innovative technology, where emphasis is placed on practical applications in the field. The conference ends with a round-table discussion regarding the future of RNAi in plant biotechnology, crop engineering and pathogen control.