



Minutes of the 3rd Conference of

iPLANTA COST Action CA15223:

WHAT FUTURE FOR RNAi-BASED PRODUCTS: RNAi MODIFIED PLANTS OR SPRAY PRODUCTS

27-28.02.2019

ITQB NOVA (Oeiras) Lisbon, Portugal

1. Introduction

The 3rd iPlanta conference had a very large participation with 123 registered experts, of which 72 iPlanta partners, from 31 EU countries and one International country (USA) involved in the iPlanta COST network which attended the conference focused on RNAi-based products (plants and new products), including other issues such as biosafety, socio-economics and communication on RNAi. The invitation was extended to Portuguese scientists and stakeholders to attend the iPlanta round table. Experts from different international industries and EU SMEs also attended the conference. iPlanta COST Action Management Committee delegates also attended the conference.

2. Welcome to 3rd iPlanta Conference iPLANTA COST Action CA15223 “What a future for RNAi-based products: RNAi modified plants or spray products

The 3rd iPlanta Conference started by welcoming the participants. At the opening session Prof. Bruno Mezzetti, Chair of the Action, Dr. Jeremy Sweet, Vice-chair of the Action Prof. Pedro Fevereiro, Portuguese delegate to the MC of the iPlanta COST action, Prof. Cláudio Soares Director of ITQB and Dr. Pedro Louro President of the Scientific Council of INIAV, welcomed the participants and congratulated the high number of attendees present in the lecture hall.

3. Outcome of the IPLANTA Conference

The 2 days conference included 30 oral presentations (15 minutes), 3 International lectures (45 min) and 16 posters. All experts invited on iPlanta budget were author of an oral/poster presentation. In order to have all countries represented in MC meeting, one MC delegate was invited for the few countries that did not present scientific work.

All oral/poster presentations were of high scientific level covering the main aspects of RNAi technology, including studies on RNAi mechanism, identification of target specific RNAi, role of RNAi in controlling specific targets, and preparation of constructs for RNAi stable expression. A few presentations also compared the potential of RNAi technology with gene editing DNA free technology.

In terms of applications of RNAi, most presentations referred to the use of the technology for inducing resistance to pests (different types of insects) and diseases (mostly virus and fungi), both as stable expression in planta and as topical dsRNA application on the plant. For topical applications on the plant, several presentations analyzed the different methods of delivery. The use of nanomaterials (encapsulation) and virus vectors (VIGS) were compared in term of efficiency, costs and potential benefits. The mechanism of delivering emerged as a critical factor for the development and commercialization of new RNAi plant protection products.

Biosafety remains an important issue for the release of new RNAi based plants/products. Some presentations analyzed the main factors related to environmental risk assessment and food safety. In both cases emerged the importance of designing RNAi with high target specificity in order to avoid off target effects. The RNAi sequence also has an importance on the level of induced resistance. In fact, some studies have already shown the evolution of resistance in RNAi targeted insects. Most of these aspects were introduced and discussed by the first international lecture (Dr W. Moar).

Opportunities and challenges of the new biotechnologies were discussed in the second international lecture (Shew), this by presenting information on the level of consumer knowledge, perception and acceptance of the technology. A third international lecture (Bouder) was addressed to improving scientific communication on challenging topics. Poor consumer knowledge on biotechnology and the need to



develop new specific communication strategies emerged as priorities in order to increase consumer acceptance of new RNAi plants/products.

4. Promoting the iPlanta COST action at young research level (ECI)

In the program space was given for presentations from several young scientists (including master and PhD students). Some of the work presented was achieved thanks to collaborations started with STSMs supported by iPlanta, so maintaining the mission of CA15223 in developing synergies, competences and skills on RNAi.

4. Poster sessions

16 posters were presented during the breaks dedicated to poster discussions, enabling the participants to discuss the results of these studies. Posters were located near to the conference room so all participants had the opportunity to look at them and discuss with the authors.

6. Communication

A specific session was dedicated to present and discuss the two videos prepared during the extended WG2/CG meeting and the School held at Rothamsted (UK), in September 2018. Both videos were appreciated by the audience as new important tools for disseminating information about iPlanta and the potential of RNAi technology. The first video presenting iPlanta was considered appropriate and ready to be delivered with only minor changes, such as addition of title and credits. While for the second video many experts commented on the need to improve the contents before publishing it on line. The following parts may require improvement:

1. Cartoons and pathways are confusing and not immediately related to the topics of the interviews and should be removed
2. Alternatively good infographics, e.g from MaxPlanck Institute, could be used
3. Link to other films and sources of information could be added.
4. Sometimes the terms selectivity and specificity are not correctly used in the video
5. Better reorganize the content according to selected target audience (including scientists and specialists and not specialists on RNAi)
6. Add Title headings credits etc

Most of the participants agreed that without this improvement the video should not be published on line. It was explained that is difficult to see the possibility to improve the video without an additional budget. This needs further discussion. One take home message was about the opportunity to make additional videos for other target groups, It was also suggested to prepare a drafted script containing the key messages and vocabulary to ensure better addressing the set target groups and scientific aims.

7. Round table with stakeholders

In the last session of the conference, Pedro Fevereiro organized a round table involving different national stakeholders, as follows:

MODERATOR: MARGARIDA OLIVEIRA -ITQB SUB- DIRECTOR, GREEN - IT RESEARCH UNIT DIRECTOR

GABRIELA CRUZ - FARMER AND PRESIDENT OF APOSOLO (Portuguese Soil Conservation Mobilization Association)

TIAGO SILVA PINTO – GENERAL SECRETARY OF AN PROMIS (National Association of Maize And Sorghum Producers)

CARMO MARTINS – GENERAL SECRETARY OF COTNH (National Hortofruticultural Operative and Technological Center)

AARON SHEW – UNIVERSITY OF ARKANSAS, USA

The speakers introduced their interests in research and innovation in agriculture. All expressed high interest to know more about RNAi technology and the importance of knowing the benefits of the new plants and products that can be produced. In the discussion again emerged the difficulties to promote public acceptance of new biotech products and the need to develop clear messages based on the benefits of the new products.

8. Other information about the conference

The 3rd Conference CA15223 iPlanta was held at Instituto de Tecnologia Química e Biológica António Xavier of the New University of Lisbon, Oeiras, Portugal from 27th February to 1th of March 2019, in collaboration with the Centro de Informação de Biotecnologia (CiB). The conference brought together 123 experts from 27 European countries and one international country (USA) (Fig. 2 and Fig.3). Experts from different industries and SMEs from EU also attended the conference. Portugal, Italy and Germany were the countries with highest rate of participation. The ITQB organization contributed largely to strong presence of Portuguese participants from ITQB staff and other national researchers and stakeholders. Gender balance was taken into account while completing the final list of invited participants (Fig. 4).

The local organizers contributed in the dissemination of the event by creating a dedicated webpage (<http://www.itqb.unl.pt/meetings-and-courses/3rd-iPLANTA-Conference>; Fig. 1) and were responsible for all the local organization, including renting rooms, secretariat, program printing and handouts and badges. This organisation was much appreciated by all attendees and the Chair of the Action thanked the local team for organising such a successful meeting. For this work, the GH will transfer to the local organizers a LOS of 2900€.

The information related to the 3rd iPlanta conference (program, participants, book of abstracts, minutes) are available on iPlanta Web site: <http://iplanta.univpm.it/>

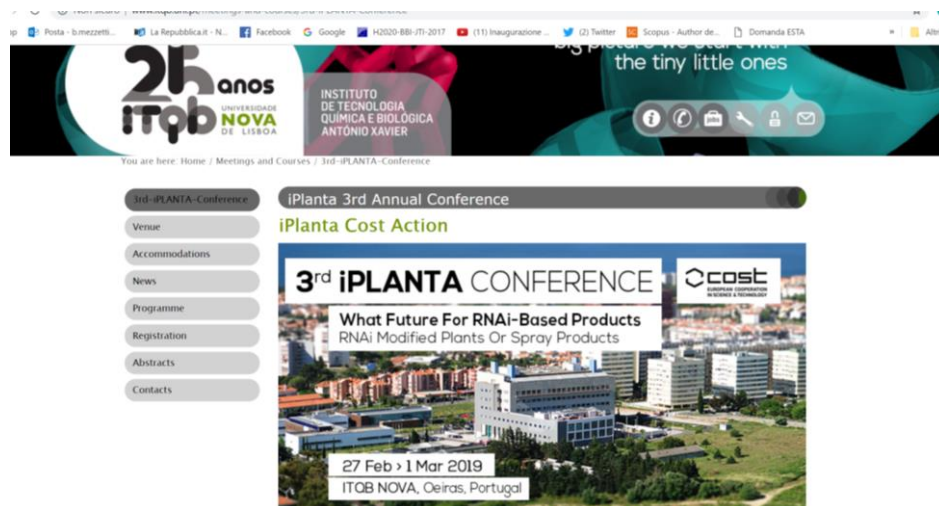


Figure 1 – Conference website of the 3rd iPlanta Conference, Oeiras, Lisbon (PT)



Figure 2 - - Participants at 3rd iPlanta Conference, Oeiras, Lisbon (PT), 2019

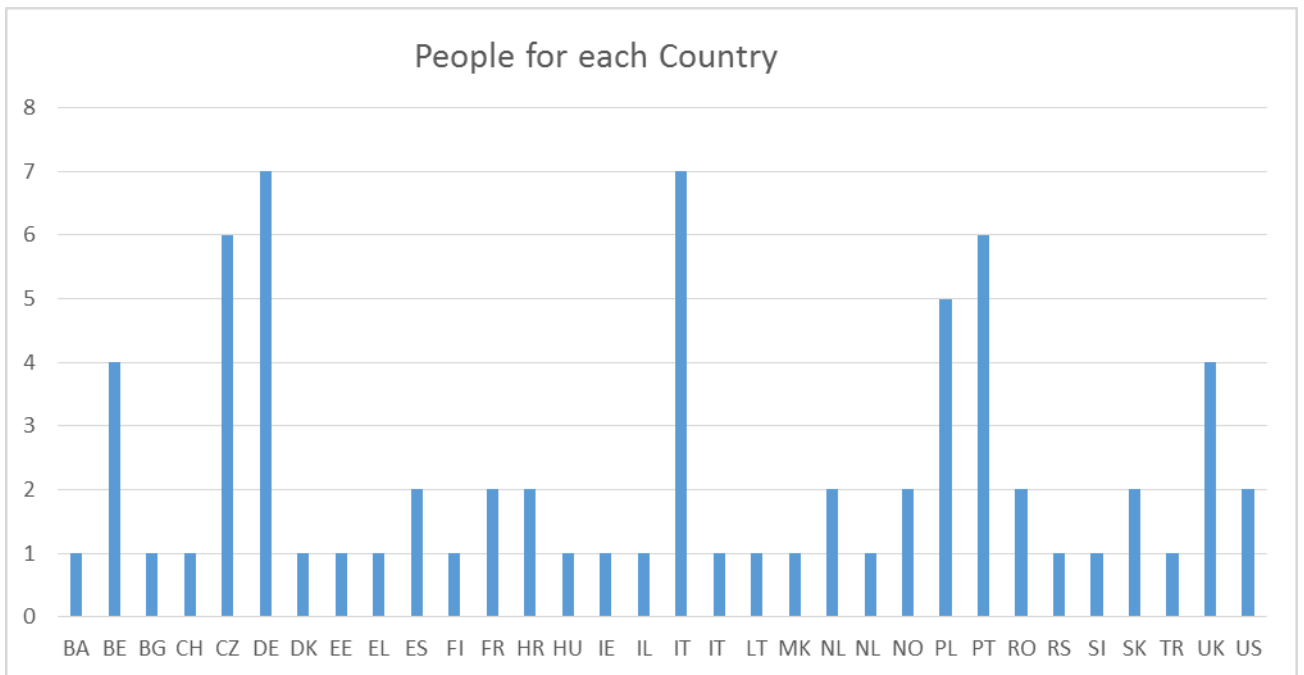


Figure 3. Invited experts from different countries invited to the 3rd iPlanta Conference.

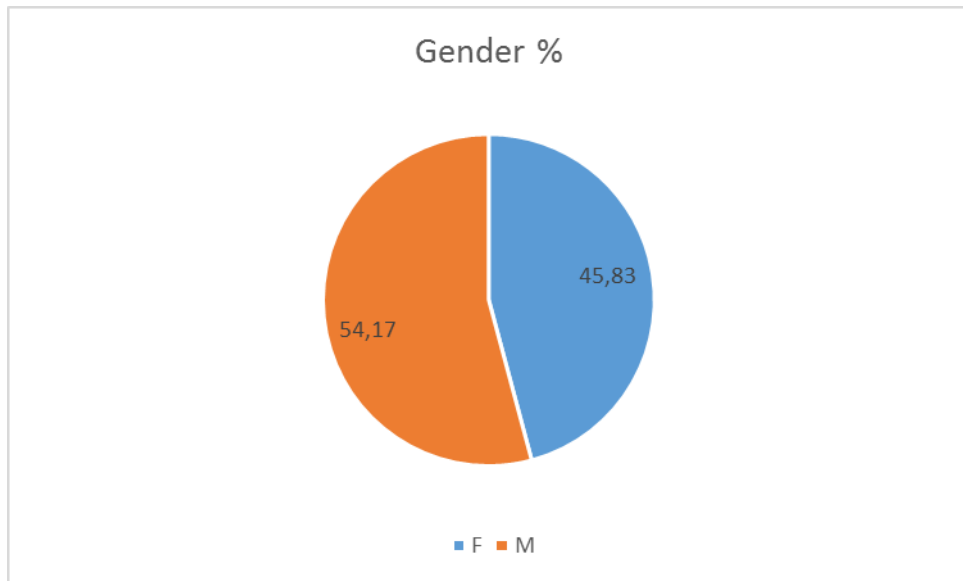


Figure 4. Gender balance of invited experts invited to the 3rd iPlanta Conference