

Di@gnoPlant® Tobacco: diagnostic advice on crop diseases via smartphone

In order to reduce the use of pesticides on crops, the early and reliable identification of a disease and the detection of emergent pests have proven to be crucial stages in plant protection. In particular, they enable an alignment of the diagnosis with the most appropriate protection method(s). An INRA (the French National Institute for Agronomic Research) team in Bordeaux, led by Dominique Blancard and Jean-Marc Armand, has developed several plant protection applications for smartphones and tablets to help identify and localise diseases on the plant in the field. Di@gnoPlant® Tobacco is the first application by INRA to be translated into English for international use. The translation was done by CORESTA (Cooperation Centre for Scientific Research Relative to Tobacco) and thus made this tool accessible worldwide.

The application answers two key questions in tobacco plant protection: What disease causes the symptoms? And what control methods can be used? At the onset of disease symptoms on a crop, a farmer or field technician can now gain access via smartphone or tablet to research knowledge and expertise in plant protection. With Di@gnoPlant, the user is able to:

- Identify diseases on a given crop thanks to an image identification module, depending on the type of symptoms, signs or pests observed;
- Obtain information on the characteristics of these diseases, based on an INRA database organised into fact sheets that detail the symptoms and biology of the incriminated pest,
- Implement optimised protection methods adapted to the parasitic context.

When developing this project, the scientists had two aims: to build a continuum of diagnostic/advice tools already accessible over the internet thanks to the e-Phytia® website (English version pertaining to tobacco will soon be on line) and make it available in the field using the new information and communication opportunities provided by smartphones and tablets (App store and Google play). A complementary application, VigiPl@nt, will be developed in the future for geolocalisation.

INRA and CORESTA will continue to collaborate. Thanks to its worldwide networks and links with numerous organisations and universities, CORESTA will regularly supplement and improve the database on tobacco and hopes this application can assist tobacco farmers all over the world.