

The challenge of making plant exchange through the world secure

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Numerous thematic digital universities have been developed these last years. Their goal is to promote the use of information and communication technology in teaching practices. Thus, seven French digital universities, among which UVED (Université Virtuelle Environnement et Développement Durable), propose innovative pedagogic resources for students but also for teachers that may use part(s) of these resources for their own lectures. In 2014, we have developed an UVED digital resource entitled “Sécurisation phytosanitaire des échanges de matériel végétal” (Phytosanitary risk and Regulation in the International Trade of plants). The proposed resource has been built to describe how the current high international trade flows of plants and plant products has significantly increased the risk of biological invasions and disease emergences (including the ones caused by plant viruses which account for 47% of emergent plant diseases (Anderson et al., 2004). This resource is organized in four independent pedagogic units. In the first unit, the goal is to make the users aware of the clearly documented risk associated with the transport and trade flows of plants worldwide and of their potentially devastating consequences. The second unit focuses on the national, regional and international organizations and plant protection legislations aiming at preventing and reducing the phytosanitary risks through regulatory procedures and phytosanitary norms. In the third unit, users go deeper in the scientific concepts, data and tools that are necessary to carry out pest risk analysis and to take actions in the surveillance and control of plants for planting at borders and in the agro-ecological landscapes. Concrete examples are developed for stone fruit plants. Finally, the fourth unit is entirely dedicated to grapevine. Regulations associated with quarantine pests and viruses (e.g. GFLV, ArMV, GLRaV-1 and GLRaV-3) are presented. French certification scheme, as a main axis in preventive control, is presented and illustrated step by step.

Detailed examples, animated figures, videos and interviews of the main actors of the French plant protection organizations (e.g. ANSES, SRAL, IFV...) enrich the pedagogic contents. Exercises, case studies involving informatics tools dedicated to pest risk analysis and plant protection (e.g. PQR and CAPRA software products developed by the EPPO organization) and role-playing games are included in the resource.

Référence :

[1] Anderson, P. K., A. A. Cunningham, N. G. Patel, F. J. Morales, P. R. Epstein and P. Daszak (2004). "Emerging infectious diseases of plants: pathogen pollution, climate change and agrotechnology drivers." Trends in Ecology & Evolution **19**(10): 535-544.