

Supporting Database for UK Plant Health (Plant Health Information Warehouse)

The Plant Health Information Warehouse (PHIW) is an information system funded by the Department for Environment, Food & Rural Affairs (Defra) and developed, maintained and hosted by the Food and Environment Research Agency (Fera) to support the work of the UK Plant Health Service. The PHIW contains core lists of names and synonyms of pests & diseases ('pests') and plants, and all information stored relating to these organisms are referenced by a unique PHIW ID and the EPPO code. Work is currently on-going to improve the efficiency with which these data are maintained by drawing upon external data sources hosted elsewhere. One such current initiative aims to validate and enrich the plant names to facilitate the development and maintenance of accurate host lists. The underlying pest and host lists themselves provide reference data and validation for other IT systems including the recently developed UK Plant Health Risk Register.

INTRODUCTION

The PHIW was launched as a web-based application in 2003 to provide the Fera view of pest organisms, with the aim of providing a single source of information for all Fera staff and removing duplication of effort in data collation and validation. The system provides a central repository of Plant Health related information such as the status of quarantine pests in the UK, policy decisions and Pest Risk Analyses (PRAs). The data are maintained by diagnosticians and plant health consultants as part of their day-to-day responsibilities.

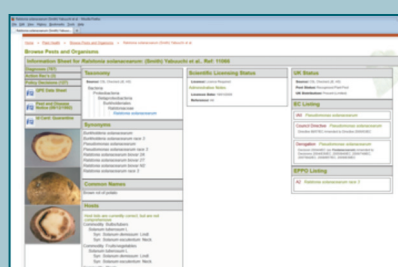


Figure 1. PHIW datasheet for *Ralstonia solanacearum* (Smith) Yabuuchi et al.

METHODOLOGY

The PHIW is a MySQL database, for which a web-based user-interface has been developed. The PHIW contains of a core list of pests and a core list of plants which contain approximately 26,000 and 27500 records respectively. Each record consists of the preferred scientific name and authority, synonyms and authorities, common names, a unique identifier and the EPPO code. Of the pest records, 8,500 have associated information on legislative status, their distribution and their pest status. Links are made between records in the pest list and plant list to build up host lists (see Fig. 2). Other information recorded in the PHIW such as PRA documents, policy decisions, identification cards etc. are referenced with the unique pest ID to enable all data pertinent to a specific pest to be returned as a consolidated datasheet from a single query (see Fig 1.). In collaboration with the UK's Royal Botanic Gardens at Kew (RBG Kew) work is ongoing to pilot the validation of the plant names used in the 27,500 plant records to ensure that the PHIW host lists are accurate. The long-term aim is to make use of Plant Name Services being developed by RBG Kew to ensure that dynamic validation of plant names can be carried out as new host records are created in the PHIW, or when name changes occur within the systematic literature.

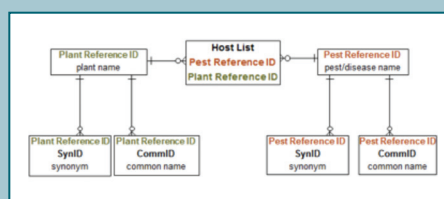


Figure 2. Entity relationship diagram of host lists stored within the PHIW.

RESULTS AND DISCUSSION

The PHIW system has been used to provide validation lists in support of other systems such as the Fera Plant Clinic LIMS system and the eDomero system, which is the work recording system of the Plant Health and Seeds Inspectorate. More recently work planned to validate plant/hosts lists has further strengthened the quality of the PHIW data and has meant that the PHIW could be used as the basis for the development of the online version of the UK Plant Health Risk Register (<https://secure.fera.defra.gov.uk/phiw/riskRegister/>)

CONCLUSIONS AND RECOMMENDATIONS

The PHIW is a comprehensive and robust resource which supports UK Plant Health by providing a single validated source of information and by underpinning other plant health IT systems such as the UK Plant Health Risk Register.



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