

WIKWIO Portal: An online resource on weeds for sugarcane growers

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Abstract

Efficient control of weeds is only achievable through a clear and sound knowledge of their biology and ecology. The Weed Identification and Knowledge in the Western Indian Ocean (WIKWIO) portal (<http://portal.wikwio.org/>) has been developed to meet this objective. It aims at building and leveraging a science and technology network to consolidate existing scientific and technical knowledge, and facilitating the sharing of new information. Although the portal currently covers the Indian Ocean region, most of the tropical weeds that are documented are also present in many other sugarcane-producing countries. This paper highlights the benefits that this resource can have to growers for managing weeds in their fields.

The WIKWIO portal is the outcome of a three-year collaboration among weed scientists of CIRAD (France), CNDRS (Comoros), FOFIFA (Madagascar), IFP (India) and MSIRI (Mauritius). A community of stakeholders involved in weed knowledge and management, also collaborated in the action. Experts from the six research institutions worked on a list of nearly 470 species of tropical weeds. They compiled and validated information on the biology, ecology, distribution, agronomic importance and management of each weed species in datasheets in both English and French. Each weed has been fully illustrated with high-resolution pictures and scanned herbarium sheets to provide additional details. Botanists and computer engineers set up an information system to host these data, in addition to other tools that facilitate rapid weed recognition and documentation.

The portal became operational in early 2014 and was improved with various options at the completion of the project in February 2017. More than 750 users have registered on the WIKWIO network, contributing over 10,000 observations of weeds, many of them encountered in sugarcane fields in various parts of the world. All the observations posted on the website are geo-referenced, thus providing useful data on their ecological distribution. Identified species are linked to the appropriate datasheets, giving insights into their management and control. Weed identification is possible via a computer-aided tool (IDAO) available on the portal. This resource and the possibility of uploading observations onto the network are accessible through applications (apps) on mobile devices enabling easy use in the field for rapid weed control decision and intervention.

The WIKWIO portal enhances a collaborative and participative approach by sharing knowledge and providing practical information. It can serve as a platform for establishing and reinforcing a community of sugarcane growers seeking help or exchanging experience on weed management issues. Nowadays, with the easy and rapid access to internet connectivity, timely assistance may be obtained through the portal. The latter takes place in a 'numerical agriculture' approach that is expected to evolve into a website for tropical weeds.

Keywords: weed identification and management, collaborative and participative approach, network of users, information sharing