

Upskilling the Western Australian grains industry in disease surveillance for a more productive and biosecure future.

The Australian grains industry relies on growers and agronomists being able to identify and manage endemic diseases in their crops and being aware of the possible threat of high priority pests (HPPs) becoming established in their crops. However, there is insufficient evidence to judge whether growers and agronomists within the industry have the skills and capacity to meet this expectation.

A training needs analysis was undertaken to determine the ability of growers and agronomists to identify endemic diseases and to recognise the top four high priority pest (HPPs) threats in their crops. A benchmark of 70% for growers and 80% for agronomists was set: this corresponds to 70% of growers being able to identify endemic diseases in their crops and 80% of agronomists being able to identify the endemic diseases in crops. Both growers and agronomists met the benchmarks for identification of endemic diseases in crops. However, their knowledge of the top four HPPs was well below this benchmark. Thus, it would appear that providing information through knowledge transfer is insufficient to increase the knowledge of growers and agronomists and enable them to alert industry to a possible incursion of an HPP.

Therefore, surveys were conducted to examine growers' and agronomists' preferences regarding the types and sources of information they preferred to use. The types of general information used were community-, training- or technical-based. To solve specific pest and disease problems, growers either used an agronomist or sourced publicly available information. Agronomists' preferences were based on content and whether the information had a general, regional or a local focus.

A survey was conducted with growers and agronomists to determine what types of training activities they liked to attend, why they liked to attend them, and what barriers prevented them from attending. Occupation, gender, location and education influenced the number of field days attended. Participants found field days to be informative, interactive, and visual and an important opportunity to network with other farmers, colleagues and professional research officers. Agronomists preferred to attend formal workshops on agronomy and crop production issues such as herbicide application, pests and diseases. Workshops were valued because they were informative, interactive and local. Growers liked belonging to grower groups because they were local, interactive and informative and supported networking. Participants' age and location influenced their membership of grower groups.

Field days and workshops were evaluated to determine if knowledge levels increased after they had been attended. Participants' knowledge levels increased after the events but demographic variables such as occupation and education level influenced knowledge levels before the event.

Because it is difficult for many participants from rural communities to attend training events, the use of information technology communication tools to provide timely information was evaluated by testing the use of webinars, YouTube videos, and podcasts during two growing seasons in Western Australia. Outcomes varied depending on the event evaluated and the participants involved. Agronomists preferred using the webinars and YouTube videos as the information was provided in a timely manner allowing management strategies to be implemented. Podcasts were developed during the second season following feedback from growers. These were well received by the industry and poor of these tools will be used in the future.

This research demonstrated that it is important to provide information and learning opportunities to rural communities, growers and agronomists in different formats. Effective training requires that there is time for participants to reflect, and interact at training events, and that post-event information is provided in different formats. Short webinars, and YouTube videos can be used to provide succinct and pertinent information to growers and agronomists.