Poster: Area-wide Integrated Pest Management and Action Programs

Kobo-Fly: A field data collection system for fruit fly surveillance

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In crop protection, the value of pest surveillance data depends critically upon its timeliness. In the case of pests, including fruit flies, the lag between trap servicing and digital capture of the data reduces the value of surveillance for management and real-time decision support systems for the farmers. It is especially the case if the window of opportunity for undertaking pest control is narrow. Yet, many teams still rely on manual trapping and paper and spreadsheet methods to record information in the field. To process data recorded manually in the field and make it ready for webmapping, it must first be transcribed. Manual data transfer from paper to spreadsheet is prone to human errors. Data captured by numerous users or field technicians working as part of a larger project often lacks consistency in approach and often needs to be further manually reformatted. Data should then be parsed and cleaned to fix typographical errors and inconsistencies before being uploaded into a database. This time-consuming and labour-intensive process introduces significant time-delays and costs into the system, and is inherently error-prone throughout.

In the FF-IPM project, we have developed Kobo-Fly – an app based on the Kobotoolbox platform. Kobo-Fly is an attractive, simple-to-use system for collecting data in a robust, timely manner and storing it in a cloud-computing database. To ease adoption, we built the Kobo-Fly application to closely mimic traditional data collection workflows, but removing the pain points, enhancing user experience and saving time in manual data digitisation. Kobo-Fly can be easily tailored to system needs. The system proved equally suitable and relevant for field or laboratory capture of trap catch data.

For conventional trap data collection, Kobo-Fly uses two linked forms: one for trap deployment form and another for regular data entry. The Kobotoolbox system supports the capture of picture images and using barcoding. Kobo-Fly works with geospatial information and creates instant reports and maps. The data capture system can work offline, syncing when subsequently connected to the internet, and it is available for Android and iOS devices. The User Experience testing results for Kobo-Fly were highly favourable. In practice, the application reduced the data latency by two weeks, enabling manual trap data to be linked to an early-alert web-mapping system alongside e-trapping results. In this presentation we demonstrate the functionality and opportunities that the KoboFly system presents for data enumerators.

Keywords: data collection, Kobotoolbox, surveillance, app, smart farming