Session 5: Risk Assessment, Quarantine and Post-Harvest, November 15, 2022, 14:30 - 16:30

A forecasting system for fruit fly biosecurity and pest management

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Within the FF-IPM project we have created a multi-scale pest alert system to provide useful information for targeting biosecurity surveillance, incursion management and post-border pest management. Initially, the system is populated with models for three fruit flies: *Bactrocera dorsalis, B. zonata* and *Ceratitis capitata.* The models are driven by weather data drawn from the ECMWF and includes a combination of historical and forecast data. The forecasting system operates on a cloud-computing platform. CLIMEX models are used to estimate climate suitability in source countries. These data are combined with historical interception data and fly presence information overseas to generate country lists to prioritise fruit and vegetable consignments for inspection in conjunction with dynamic climate suitability maps. Dynamic weekly climate suitability webmaps are overlain with trap catch data to inform pest management. These traps are focused on the early detection of fruit fly activity. DYMEX population dynamics models are used to highlight fruit fly phenology and abundance, allowing pest managers to target treatments in space and time.

Keywords: pest alert system, pest forecasting, decision support, quarantine, climatic suitability, phenology, trapping, web-mapping