User guide

This app provides the results generated for the thesis
Computational approaches for optimising avian influenza outbreak control and disseminating research findings
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Single-phase control tab

The single phase control tab displays boxplots of the simulated outbreak sizes under wave 2 and wave 5 transmission dynamics for low, medium and high control capacities displayed as a matrix layout with a single initial selected control strategy of IP culling chosen.

In addition to standard boxplots, the app can also display log transformed boxplots, as some of the results are best visualised in this format. These are selected using the 'Boxplot' and 'Log transformed boxplot' tabs directly above the plots.

Underneath the plots are the widgets that allow the user to choose which results to display. The options selected here remain the same when tabbing between the different styles of boxplots to allow for the better visualisation to be chosen. Additional text is included within the app to explain the widget functionality. Initially three widgets are displayed. The 'select scenario' widget to the left allows the user to select between the standard scenario and the increased transmission scenario. If increased transmissibility or farming intensification is chosen, an additional 'increase from baseline' slider widget appears to enable the selection of different levels of increase in transmissibility or intensification from baseline.

The centre 'select controls' widget allows the user to choose the different control strategies they wish to include within the boxplots. Initially only IP culling is selected, but this widget allows for any number of the controls to be selected and added to the boxplots to allow for comparisons between them.

The 'select management objective' widget to the right allows the user to choose the management objective they are interested in and, as different management objectives or control strategies are chosen within the app, the labelling of the boxplot axes are automatically updated to describe the new plot and the data contained within it.

Multiphase control tab

Selecting the second of the panels at the very top of the app, 'Multiphase control' changes the view to heatmap showing the results of the multiphase control simulations. The layout is similar to the single control panel, with the results plot at the top of the page and the selector widgets displayed underneath. The heatmaps are again displayed in a grid so that the results at both high and low capacities and the different choices of control switching points can be compared on one multipanel plot. The 'select scenario' widget to the left and associated 'increase from baseline' widgets in the centre are the same as for the single control plots.

The ‘select multiphase control trigger’ widget in the centre allows for the selection of the different trigger points for changing the outbreak control strategy grouped together in those of the same type: i.e. outbreak duration where the control strategy was changed at 30, 60 and 120 days since the beginning of the outbreak, outbreak size where the control was changed when the outbreak size reached 5, 10 and 25 infected premises and days since last IP where 14 days had passed since the last IP (for ‘real-world’ scenarios only). In the section to the right, the ‘select wave’ widget changes the heatmaps between those for the wave 2 and wave 5 results while as is the ‘select management objective’ widget displays results for the management objectives of minimising outbreak size, outbreak duration and the number of chickens culled with both means and 95^{th} percentiles available for display. The labelling of the plots is again updated automatically within the app as the user changes between these different options, both along the heatmap axes and on each section of the heatmap