Animal Disease Spread Model (ADSM)

Text Support Document for Training

The slide-based training was designed to optimize visual interest. This format does not always create a slide bank that is printer-friendly. In some sections, there are many images and little text. This text support document is intended to be a printer-friendly version of the slides that can be used as a reference. This document is not intended to take the place of main training slides.

Training 1 Overview

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| Slide | Image | Text |
| 1 | Laying Hens | Animal Disease Spread Model  Getting Started: Installing ADSM, starting a scenario and uploading a population |
| 2 | ADSM Application Sample Scenario with Outputs | Table of Contents  Installing ADSM  Navigation Tabs  Administrative Panel  Starting a New Scenario  What’s Next |
| 3 | Gear Section Break | Installing ADSM |
| 4 | Gear Image | Downloading ADSM  ADSM is currently available at <https://github.com/NAVADMC/ADSM/releases/latest>  The Install process will create a menu item and a new folder in your file structure called the ADSM Workspace. The default location for the ADSM Workspace is in the “My Documents” folder.  Users may select to put the ADSM Workspace into a different folder or run on a portable storage device (e.g., flash drive). |
| 5 | USB cord | Using Portable Storage  The purpose of having a portable application is to allow you to put the application wherever you want.  Be aware that an application installation on a USB flash drive and having your ADSM workspace on the USB flash drive could slow down the application when it is executing a scenario. In fact, it can slow down so much that a “Database Locked” error can happen.  To work around this, you can put your output (ADSM Workspace) on the portable drive and the ADSM application on another (Desktop), or vice versa. |
| 6 | ADSM Overlay | The overlay, shown here in blue, will be visible the first time you open ADSM. Use the stacked files in the upper right to toggle off this feature. |
| 7 | Gear Section Break | Administrative Panel |
| 8 | Image of Admin Panel | The Administrative Panel contains:  Project Panel  Settings Panel  Production Type Panel  Functions Panel  Documentation Panel  SQL Panel  *The Administrative Panel will be covered in detail in the training called ADSM Administration.* |
| 9 | Gear Section Break | Navigation Tabs |
| 10 | ADSM Scenario description | Navigation tabs, located in the left panel of the application, are used to enter scenario specific parameters about disease transmission and control activities.  Tabs are presented in logical order, but no specific order is required for parameter entry.  The navigation tab provide a visual cue to know which parameter blocks you have completed. The tab will be yellow if the parameter entry is incomplete and green if the parameter entry is complete for that tab.  Not all parameters are required to run the simulation, so the application may be able to run with yellow tabs. Validating the scenario will present a message to help you understand what is missing and if you can proceed with running the simulation. |
| 11 | ADSM Scenario description | The Scenario Description box allows you to provide documentation on the simulation you are running.  A scenario breaks down into 3 main components for input into the simulation:  Population Parameters  Disease Parameters  Control Parameters |
| 12 | ADSM Scenario description | Depending on the type of question that you are trying to answer, you can modify these main components and do comparisons:  For example, changing the Population and keeping all the other parameters the same would let you find if the disease and control strategies behave differently in different geographical areas that might have different animal densities.  Another example could be keeping the Population and Disease parameters the same, and changing Control parameters to evaluate the effect of different control strategies on an outbreak.  Working through the parameters that feed into a model provides a useful exercise in understanding all the complexities that should be considered when using simulation to evaluate disease spread and control options. |
| 13 | Gear Section Break | Starting a New Scenario |
| 14 | Herford cattle on the range | Let’s get started on this journey. Photo credit Sabrina Reed |
| 15 | ADSM Scenario description | Starting a Scenario  Initially, the scenario will open to a blank scenario.  A description field is provided to enter details about the simulation.  This description lets you document the scenario, such as the question you are trying to answer, where the population came from, or other important information that would be useful when you refer back to this scenario.  Selecting *Apply* **before** you leave the page is necessary to save changes on each page. |
| 16 | ADSM Scenario description with project panel fly out | Saving and Duplicating Scenarios  The very first time you open ADSM, the scenario file will be automatically named “Blank.db”.  Use the Project Panel and select the *Save As* icon to rename the scenario file to a name of your choosing and save.  You can use this same process to duplicate a scenario and select *Save As* to name that is meaningful to you.  Note that selecting *Save* will overwrite an existing file if the same name is used.  *Note that selecting Save will overwrite an existing file if the same name is used.* |
| 17 | ADSM Scenario description | This scenario has been saved as “TrainingScenario”.  A description has been added and saved, using the *Apply* button.  Let’s move on and add a *Population* by selecting the tab. |
| 18 | Population Tab  2 views | Population Tab  If you need to add a population, the window looks like this.  If a population is already loaded, as in the Sample Scenario, the window displays the population. |
| 19 | Population Tab  In Add mode | Adding a Population  A prompt will ask you to choose the population file. There are 2 different actions that can happen when loading a population.   1. If your population source file is outside the ADSM Workspace, select **Choose File** and a navigation window will open. Navigate to the location of the file that is to be imported. Select the file, and the filename will replace the text “No file chosen”. **Use Import a Population (XML or CSV)** and the file import will begin.   *Depending on the size of the population and the speed of your PC, this import could take a while. The Development Team’s test file with 363,000 units takes about 10 minutes.*   1. If the population source file has already been moved into the ADSM Workspace, the import will begin as soon as you select it from the list of available files.   *In this example there are several population files already copied into the ADSM Workspace.* |
| 20 | ADSM Sample Scenario Population | Sample Population If a population has already been added, as in the Sample Scenario, the population screen will display a visualization and details.  The Edit population link in the bottom right corner allows changes to be made to the population file within the application. |
| 21 | ADSM Sample Scenario Population | Replace Population The population can also be replaced using the “Replace Population” link at the top.  If parameter blocks have already been created, they will be retained. However, assignments to specific production types, Vaccination Triggers and Vaccination Rings parameters will be deleted.  *The deletion happens to the parameters that are associated to a specific production type. This functionality provides maximum flexibility in changing a population and retaining most parameters. The parameters can be re-assigned to the new production types when the new population is imported.* |
| 22 | ADSM Sample Scenario Population in edit mode | When you choose to edit the population, a new window opens that is similar to the main population window.  This edit method keeps accidental changes from happening in the main window. Changes can be made on any individual unit to any field in the population, such as changing the initial disease state or changing the production type. Selecting *Apply* is necessary to save changes. |
| 23 | Feedlot cattle eating | Summary  This training module has covered **describing your scenario** and **managing your population**. Photo Credit NAHMS Archive – Judy Rodriguez |
| 24 | Gear Section Break | What’s Next |
| 25 | Cow and calves in snow | Parameters related to disease will be covered in the next training. Photo credit FEMA library |
| 26 | Flock of Sheep | **Join the flock!**  **Learn more about ADSM or try an example**  **ADSM is currently available** at https://github.com/NAVADMC/ADSM/releases/latest  Try the sample scenario  https://github.com/NAVADMC/ADSM/wiki/A-Quick-Start-Guide:-Running-the-sample-scenario  Read the wiki pages link https://github.com/NAVADMC/ADSM/wiki |
| 27 | Goat on with green foliage | What’s Next?  Addition training materials will be posted at <http://navadmc.github.io/ADSM/>  Training will include:  Overview  Populations and Production Types  Getting Started  Disease Parameters  Control Parameters  Output settings and Run  Results  Verification and Validation  Vaccination Strategy  Administration |
| 28 | Cows grazing with blue sky and green grass | The outcome of an ADSM simulation (as with any computer simulation model) depends heavily on the quality of the scenario input parameters; the assumptions of the modeler who created the scenario; and the capabilities and limitations of the model framework itself. The utility of disease models like those created with ADSM critically depends on input and interpretation of experts familiar with the behavior of disease within populations, and with the limitations, assumptions, and output of the model. While ADSM is available as a service to animal health communities, the ADSM team does not necessarily endorse results obtained with the ADSM application or any conclusions drawn from such results. Note that the parameters provided in the Sample Scenario are simple examples to clarify concepts in the application. These parameters do not represent any real population or disease event. |
| 29 | Cattle image | This work was funded in whole through Cooperative Agreement AP18VSCEAH00C005 by the Animal and Plant Health Inspection Service, an agency of the United States Department of Agriculture.  University of Tennessee Animal Science logo  Photo credits  Canva.com  Ken Rager Photography  Pinecroft Farms, Woodstock CT, Mariah Chapman  FEMA Library  Sabrina Reed  NAHMS Archives - Judy Rodriguez  Photo credit – Pinecroft Farm |
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