1. Main characteristics of Be-FAST

- Simulate both the between farm and within farm spread of the considered disease in a given region.
- Evaluation of the economical impact of a disease outbreak by considering direct and indirect costs.
- Adaptable to different animal diseases.
- Possibility to use real and complex database for farms and transports for simulating realistic commercial contacts between farms.
- Possibility to use dynamic coefficients based, for instance, on the number of infected animals.
- Large choice of output, such as risk maps, R0 values, statistics on the magnitude and duration of epidemic, etc.

2. Structure of the model

Monte-Carlo algorithm

For scenario m going from 1 to M
For simulation day t going from 0 to T

1- Within-farm transmission
   - Susceptible–Infected model

2- Between-farm transmission
   - Individual Based model
   - Vehicular transport
   - Movement restriction
   - Local Spread
   - Depopulation

3- Authority detection

4- Control measures
   - Zoning
   - Tracing

Endfor

Scenario is stopped
Epidemic is over?

3. Model validation and sensitivity analysis: Classical Swine Fever in the Spanish province of Segovia

Some results obtained when considering models Be-FAST and InterSpread + and Real outbreaks data occurring in 1997-98.

<table>
<thead>
<tr>
<th>Model</th>
<th>Comp. Time (h)</th>
<th>Route</th>
<th>Measure</th>
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<tbody>
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<td>Be-FAST</td>
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<td>CS ZO TR</td>
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<td>Inter S+</td>
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<td>REAL</td>
<td>-</td>
<td>52 24 20 4</td>
<td>55 27 18</td>
</tr>
</tbody>
</table>

4. Application: Classical Swine Fever in Bulgaria

5. Application: Foot and Mouth Disease in Peru

6. Some References


