

**Table S3.** Schwarz's and Akaike's Bayesian Information Criteria for 28 generalized linear models of infectious abortion in ewes.

Generalized linear models.	BIC <sup>t</sup>	AIC <sup>tt</sup>	p-value
Grippytyphosa_1 + Portland_1 + Mixed_infections2 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Pyrogenes_1 + Breed5 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Raise + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Birthing_pen + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	386.5	213.9	<7x10 <sup>-5</sup>
Grippytyphosa_1 + Portland_1 + Mixed_infections2 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Breed5 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Raise + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Birthing_pen + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	380.7	211.9	<5x10 <sup>-5</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Breed5 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Raise + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Birthing_pen + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	380.7	211.9	<5x10 <sup>-5</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Breed5 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Raise + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Birthing_pen + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	374.9	209.9	<2x10 <sup>-5</sup>

Grippytyphosa_1 + Portland_1 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Raise + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	369	207.9	<2x10 <sup>-5</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	363.2	205.9	<9x10 <sup>-6</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Mixed_infections3 + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Dual_infection2 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	357.4	203.9	<6x10 <sup>-6</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	351.5	201.9	<3x10 <sup>-6</sup>
Grippytyphosa_1 + Portland_1 + Bed_straw + Housing1 + Dual_infection6 + Municipality_7 + Municipality_2 + Purchased3 + Hardjo_1 + Mixed_infections1 + Dual_infection4 + Drinking + Sheep_pen + Dual_infection5 + Breed3 + Puchased2 + Municipality_6 + Breed2 + Pomona_1 + Zone3 + Zone2 + Dual_infection1 + Municipality_4 + Babortus + Drainage + Pen_flooring + Zone1 + Icterohaemorrhagiae_1 + Breed1 + Canicola_1 + Municipality_5 + Dual_infection3 + Municipality_3 + Bratislava_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi_1 + Municipality_1 + Excreta.	345.7	199.9	<2x10 <sup>-6</sup>

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Grippotyphosa\_1 + Portland\_1 + Bed\_straw + Housing1 + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Breed1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bratislava\_1 + Purchased1 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 345.7 199.9 <1x10<sup>-6</sup>

Grippotyphosa\_1 + Portland\_1 + Bed\_straw + Housing1 + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Breed1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bratislava\_1 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 336.7 194.7 <8x10<sup>-7</sup>

Grippotyphosa\_1 + Bed\_straw + Housing1 + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Breed1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bratislava\_1 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 329.7 191.5 <5x10<sup>-7</sup>

Grippotyphosa\_1 + Bed\_straw + Housing1 + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Breed1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 318.7 184.3 <3x10<sup>-7</sup>

Grippotyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Breed1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 316.2 189.4 <2x10<sup>-7</sup>

Grippotyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + 310.3 187.4 <1x10<sup>-7</sup>

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Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Breed2 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Isolation + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 304.1 185.1 <7x10<sup>-8</sup>

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Mixed\_infections1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 297.5 182.3 <4x10<sup>-8</sup>

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Frecclean + Tarassovi\_1 + Municipality\_1 + Excreta. 297.5 182.3 <3x10<sup>-8</sup>

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Dual\_infection1 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta. 291.7 180.3 <3x10<sup>-8</sup>

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + Babortus + Drainage + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta. 286.3 178.7 <2x10<sup>-8</sup>

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Purchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + 281 177.3 <10x10<sup>-9</sup>

Babortus + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Dual\_infection3 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 270.2 170.3 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Puchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + Babortus + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 249.9 153.9 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Dual\_infection5 + Breed3 + Puchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 235.4 143.3 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Breed3 + Puchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Canicola\_1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 219.4 131 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Breed3 + Puchased2 + Municipality\_6 + Pomona\_1 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 210.7 126.3 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Breed3 + Puchased2 + Municipality\_6 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Dual\_infection6 + Municipality\_7 + Municipality\_2 + 207.6 126.9 <10x10<sup>-9</sup>  
Hardjo\_1 + Dual\_infection4 + Drinking + Sheep\_pen + Breed3 + Municipality\_6 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

Grippytyphosa\_1 + Bed\_straw + Municipality\_7 + Municipality\_2 + Hardjo\_1 + 201.9 125 <10x10<sup>-9</sup>  
Dual\_infection4 + Drinking + Sheep\_pen + Breed3 + Municipality\_6 + Zone3 + Zone2 + Municipality\_4 + Pen\_flooring + Zone1 + Municipality\_5 + Municipality\_3 + Bovis + Tarassovi\_1 + Municipality\_1 + Excreta.

<sup>†</sup> Schwarz's Bayesian Information Criterion

<sup>‡</sup> Akaike's Information Criterion

Putative factors: Mixed\_infections3: *Leptospira spp.-Chlamydia abortus*-smooth *Brucella spp.-B. ovis*; Portland\_1: Portland-verre strain; Municipality\_2: Santiago Tianguistenco municipality; Breed3: Suffolk-Pelibuey crossbreed; Hardjo\_1: Hardjo; Puchased2: Imported animals; Municipality\_3:

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Calpulhuac municipality; Dual\_infection2: *smooth Brucella spp.-Brucella ovis*; Drainage: Drainage in the pen; Breed1: Pelibuey; Pomona\_1: Pomona; Mixed\_infections2: *Leptospira-Chlamydia-Brucella ovis*; Municipality\_5: Texcalyacac municipality; Bratislava\_1: Bratislava; Drinking: Drink water from trough; Zone3: >2,800 masl; Zone2: 2,600 to 2,800 masl; Dual\_infection6: *Chlamydia abortus-Brucella ovis*; Municipality\_1: Xalatlaco municipality; Purchased1: Rural market; Municipality\_4: Chapultepec municipality; Grippytyphosa\_1: Grippytyphosa; Municipality\_7: Ocoyoacac municipality; Pyrogenes\_1: Pyrogenes; Purchased3: Born in the flock; Isolation: Isolation of an individual sheep by panic; Icterohaemorrhagiae\_1: Icterohaemorrhagiae; Pen\_flooring: Sheep pen flooring in dirt pen flooring; Canicola\_1: Canicola; Tarassovi\_1: Tarassovi; Sheep\_pen: Materials for the construction of sheep pens (bricks); Dual\_infection1: *Leptospira spp-Chlamydia abortus*; Frecclean: What is the cleaning frequency of sheep housing?; Excreta: What handling of excreta do you carry out in the housing pen?; Municipality\_8: Lerma municipality; Municipality\_6: Metepec municipality; Birthing\_pen: Where was born the lamb of this ewe? (Birthing pen or meadow); Bovis: *Brucella ovis*; Dual\_infection5: *Chlamydia abortus-smooth Brucella spp.*; Dual\_infection3: *Leptospira spp-smooth Brucella spp.*; Breed2: Hampshire; Breed4: Hampshire-Pelibuey crossbreed; Mixed\_infections1: *Leptospira spp-Chlamydia abortus-smooth Brucella spp.*; Zone1: <2,600 masl; Breed5: Suffolk; Bed\_straw: Bed straw: Ewe gave birth on a bed of straw?; Babortus: *smooth Brucella spp.*; Housing1: How many animals does it take to congregate to avoid panic? (<10 animals; 10 to 15 animals; >15 animals).