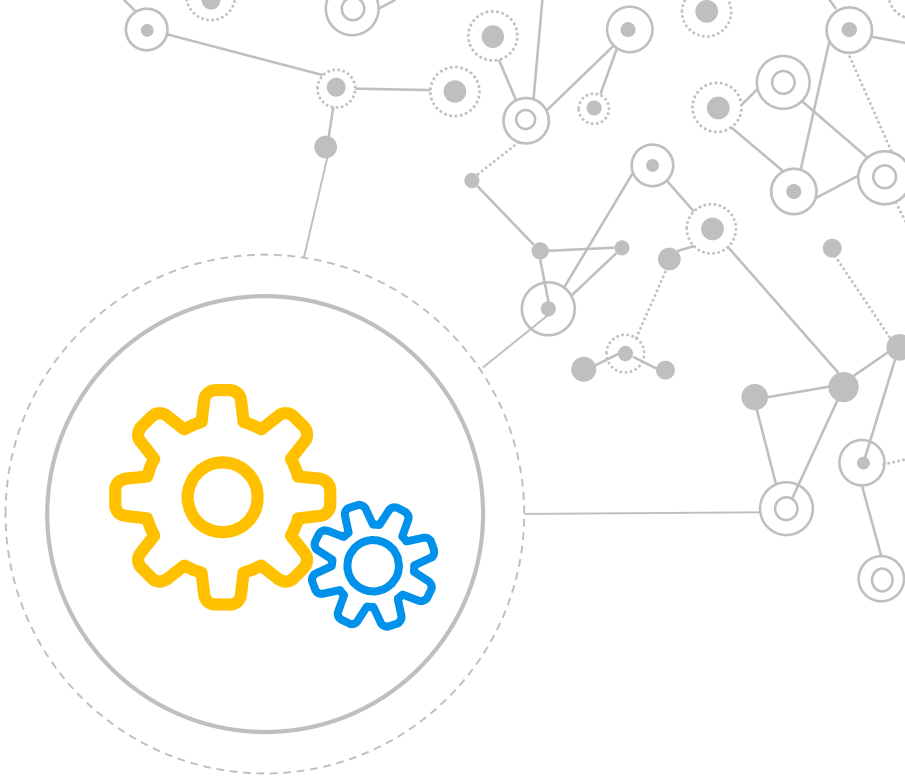
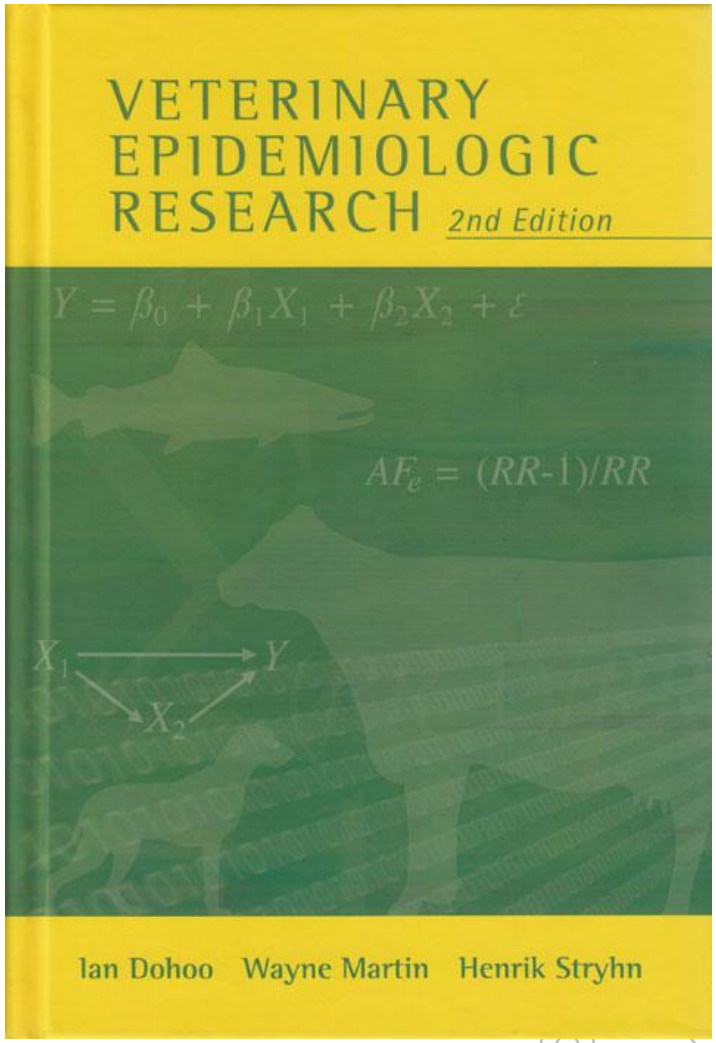


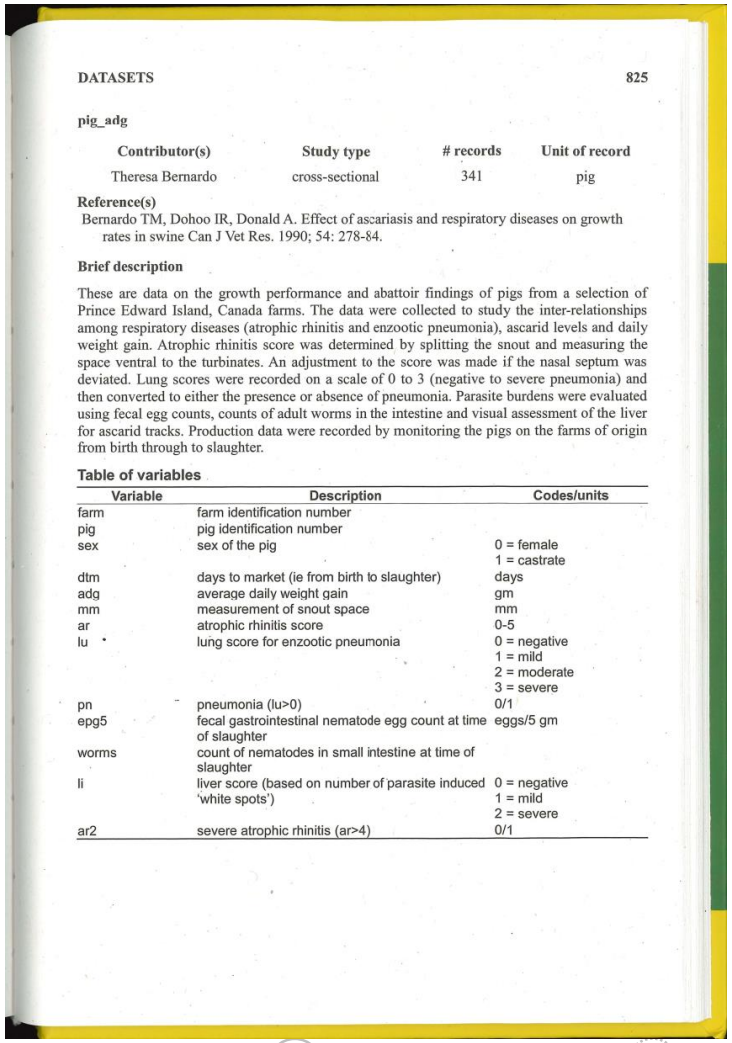
Hands-on exercise

Software requirements

- **R** v. 3.5 or higher (https://www.r-project.org/)
- **RStudio** (https://www.rstudio.com/products/rstudio/)
  - *not critical but highly recommended*
- **JAGS** (http://mcmc-jags.sourceforge.net/)
- **GraphViz** (http://www.graphviz.org/download/)

Data





DATASETS 825

pig_adg

Contributor(s)	Study type	# records	Unit of record
Theresa Bernardo	cross-sectional	341	pig

Reference(s)

Bernardo TM, Dohoo IR, Donald A. Effect of ascariasis and respiratory diseases on growth rates in swine Can J Vet Res. 1990; 54: 278-84.

Brief description

These are data on the growth performance and abattoir findings of pigs from a selection of Prince Edward Island, Canada farms. The data were collected to study the inter-relationships among respiratory diseases (atrophic rhinitis and enzootic pneumonia), ascarid levels and daily weight gain. Atrophic rhinitis score was determined by splitting the snout and measuring the space ventral to the turbinates. An adjustment to the score was made if the nasal septum was deviated. Lung scores were recorded on a scale of 0 to 3 (negative to severe pneumonia) and then converted to either the presence or absence of pneumonia. Parasite burdens were evaluated using fecal egg counts, counts of adult worms in the intestine and visual assessment of the liver for ascarid tracks. Production data were recorded by monitoring the pigs on the farms of origin from birth through to slaughter.

Table of variables

Variable	Description	Codes/units
farm	farm identification number	
pig	pig identification number	
sex	sex of the pig	0 = female 1 = castrate
dtm	days to market (ie from birth to slaughter)	days
adg	average daily weight gain	gm
mm	measurement of snout space	mm
ar	atrophic rhinitis score	0-5
lu	lung score for enzootic pneumonia	0 = negative 1 = mild 2 = moderate 3 = severe
pn	pneumonia (lu>0)	0/1
epg5	fecal gastrointestinal nematode egg count at time of slaughter	eggs/5 gm
worms	count of nematodes in small intestine at time of slaughter	
li	liver score (based on number of parasite induced 'white spots')	0 = negative 1 = mild 2 = severe
ar2	severe atrophic rhinitis (ar>4)	0/1

Data

http://projects.upei.ca/ver/data-and-samples/

- **pig_adg** dataset
- data on the growth performance and abattoir findings of pigs from a selection of farms in Canada
- data were collected to study the **inter-relationship** among respiratory diseases (athrophic rhinitis and enzootic pneumonia), ascarids level and daily weight gain

Data

Table of variables

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ar2	severe atrophic rhinitis (ar>4)	0/1

AR	presence of atrophic rhinitis (0/1)	AR score > 1
pneum	presence of pneumonia (0/1)	Lung Score > 0
pneumS	presence of moderate to severe pneumonia (0/1)	LuSc ≥ 2
female	sex of the pig (1=female, 0=castrated)	
livdam	presence of liver damage (0/1)	
epg5	fecal gastriointestinal nematode egg count at time of slughter (eggs/5g)	
eggs	presence of fecal/gastriointestinal nematode eggs at time of slaughther (0/1)	epg5 > 0
wormCount	count of nematodes in small intestine at time of slaughter (nr.)	
worms	presece of nematodes in intestine (0/1)	wormCount > 0
age	days elapsed from birth to slaughter (days)	
adg	average daily weight gain (grams)	
farm	farm ID	

AR	presence of atrophic rhinitis (0/1)	AR score > 1
pneum	presence of pneumonia (0/1)	Lung Score > 0
pneumS	presence of moderate to severe pneumonia (0/1)	LuSc ≥ 2
female	sex of the pig (1=female, 0=castrated)	
livdam	presence of liver damage (0/1)	
epg5	fecal gastriointestinal nematode egg count at time of slughter (eggs/5g)	
Eggs	presence of fecal/gastriointestinal nematode eggs at time of slaughther (0/1)	epg5 > 0
wormCount	count of nematodes in small intestine at time of slaughter (nr.)	
worms	presence of nematodes in intestine (0/1)	wormCount > 0
age	days elapsed from birth to slaughter (days)	
adg	average daily weight gain (grams)	
farm	farm ID	

ABN modelling steps

1. Search for the optimal model
2. Visualize initial results
3. Bootstrapping
4. Extract marginal densities
5. Final DAG
6. Interpretation