AGGRESSIVE BEHAVIOUR OF DAIRY COWS AT ONE DAIRY FARM

A CASE STUDY

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MOTIVATION

Movie

- Aggressive behaviour is directed towards humans, it is not fear.
- Aggressive behaviour is not directed towards other cows, not related to seniority.

COMMON CAUSES OF AGGRESSIVE BEHAVIOUR IN DAIRY CATTLE

- Bulls
- Ketosis
- At parturition

OBJECTIVES AND HYPOTHESES

Objectives

- Investigate causes of aggressive behaviour at this farm
- Characterize cows displaying aggressive behaviour

Hypotheses

- There is no obvious genetic cause
- Positive relation between production level and aggressive behaviour

DATA

- Pedigree data of cows present from 1996 onwards
- Pedigree and breeding values for known sires, obtained from `www.cr-delta.nl`
- Calving records of the cows present from 1996 onwards
- Milk production records from 01-01-2008 to 01-04-2012
- Cows with known aggressive behaviour (distinguished between threatening, and attacking)

METHOD

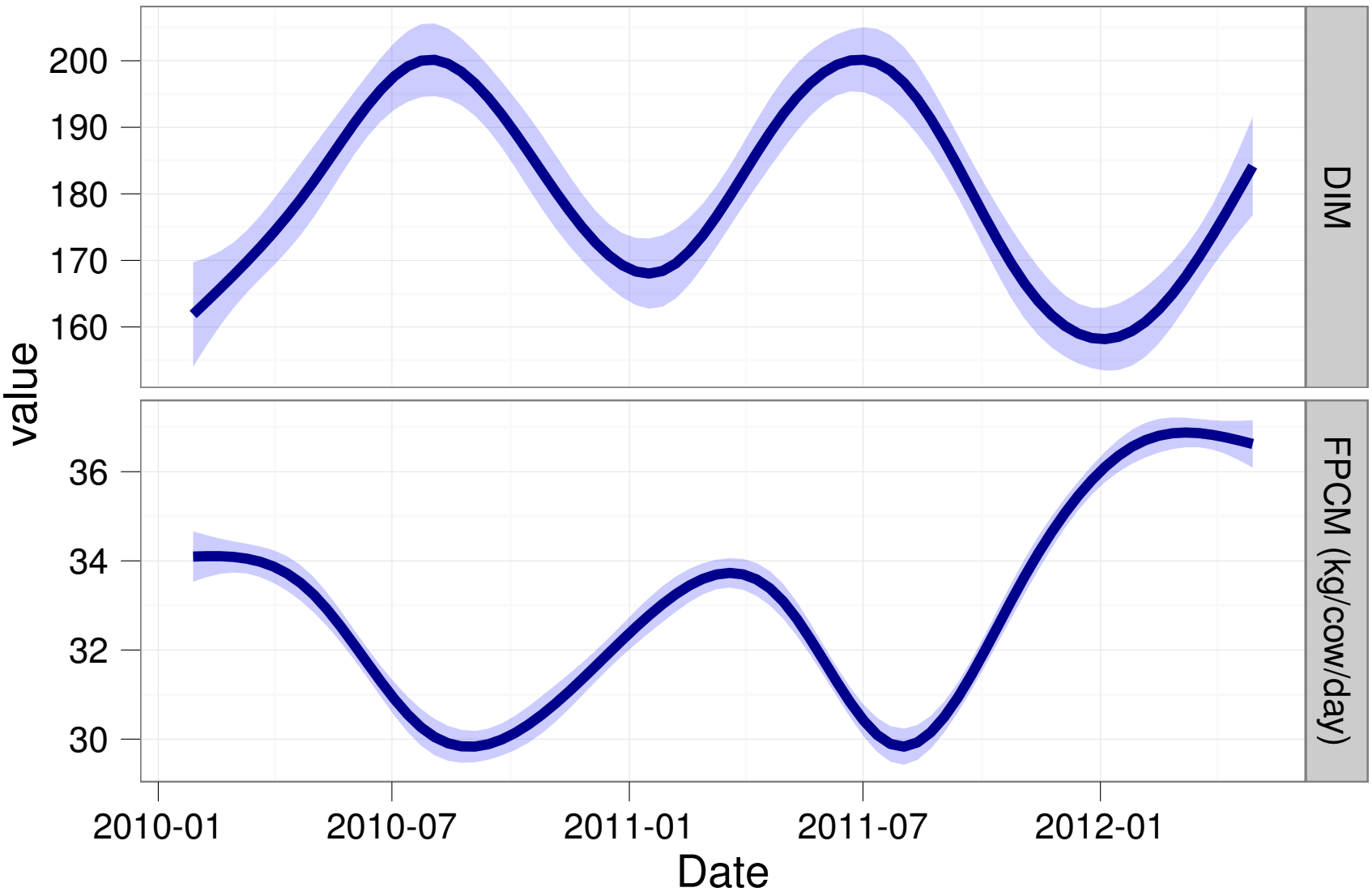
Attempt to characterize cows displaying aggressive behaviour

- Production
- Pedigree
- Age

THE FARM

	Value
Number of cows milking	687
Percentage first par. cows	38
Days in milk	187
Production (kg/cow/day)	39.83
Fat percentage	3.53
Protein percentage	3.21
Somatic cell count (x 1000)	229.43

Graphical description



NUMBER OF AGGRESSIVE ANIMALS

TABLE : Number of aggressive animals at the farm, per lactation number.

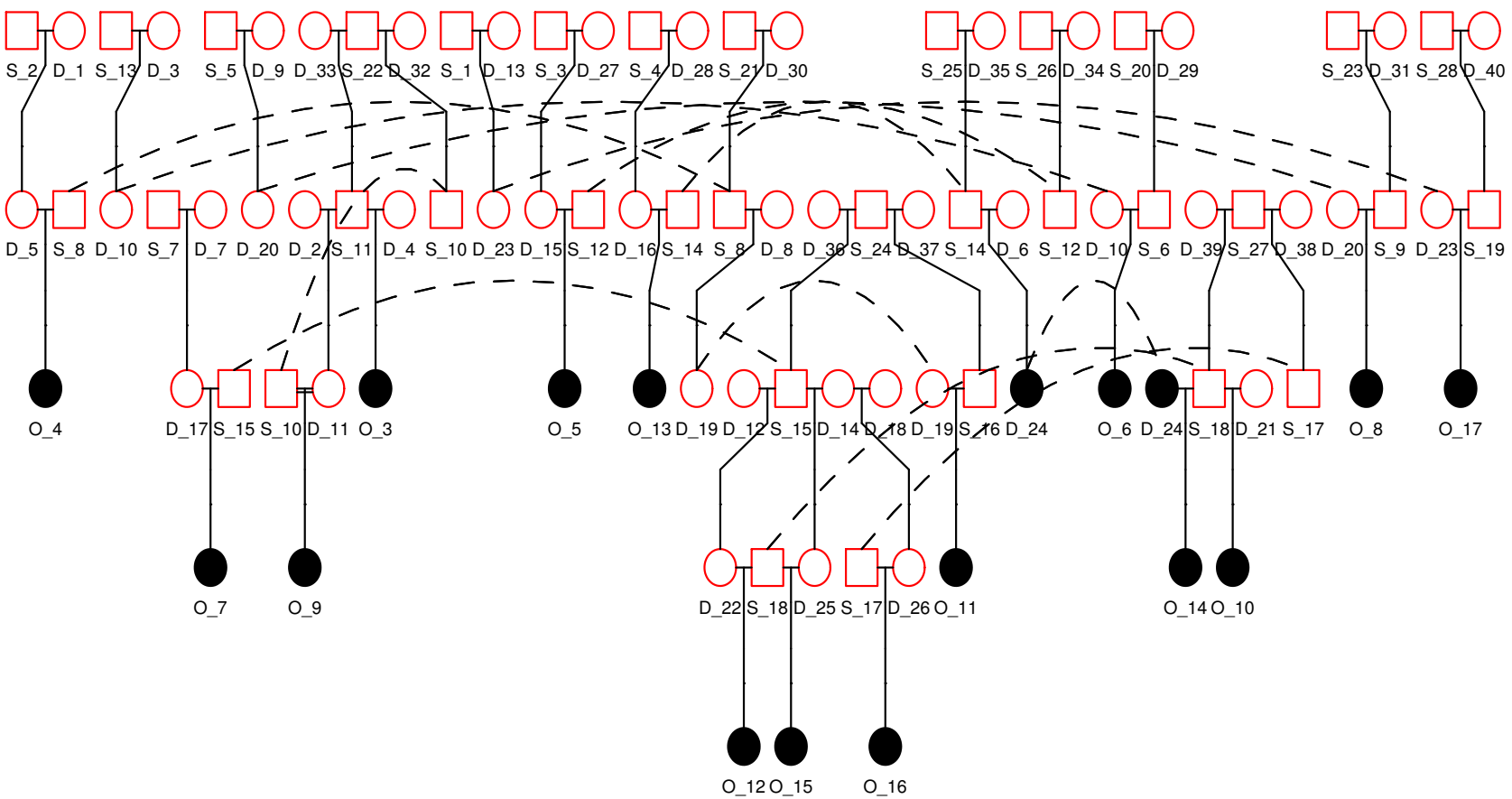
Lactation number	Number aggr. cows	Threatens	Attacks
0	2	0	2
1	6	1	5
2	4	1	3
3	2	0	2
4	2	0	2

YEAR OF BIRTH OF AGGRESSIVE ANIMALS

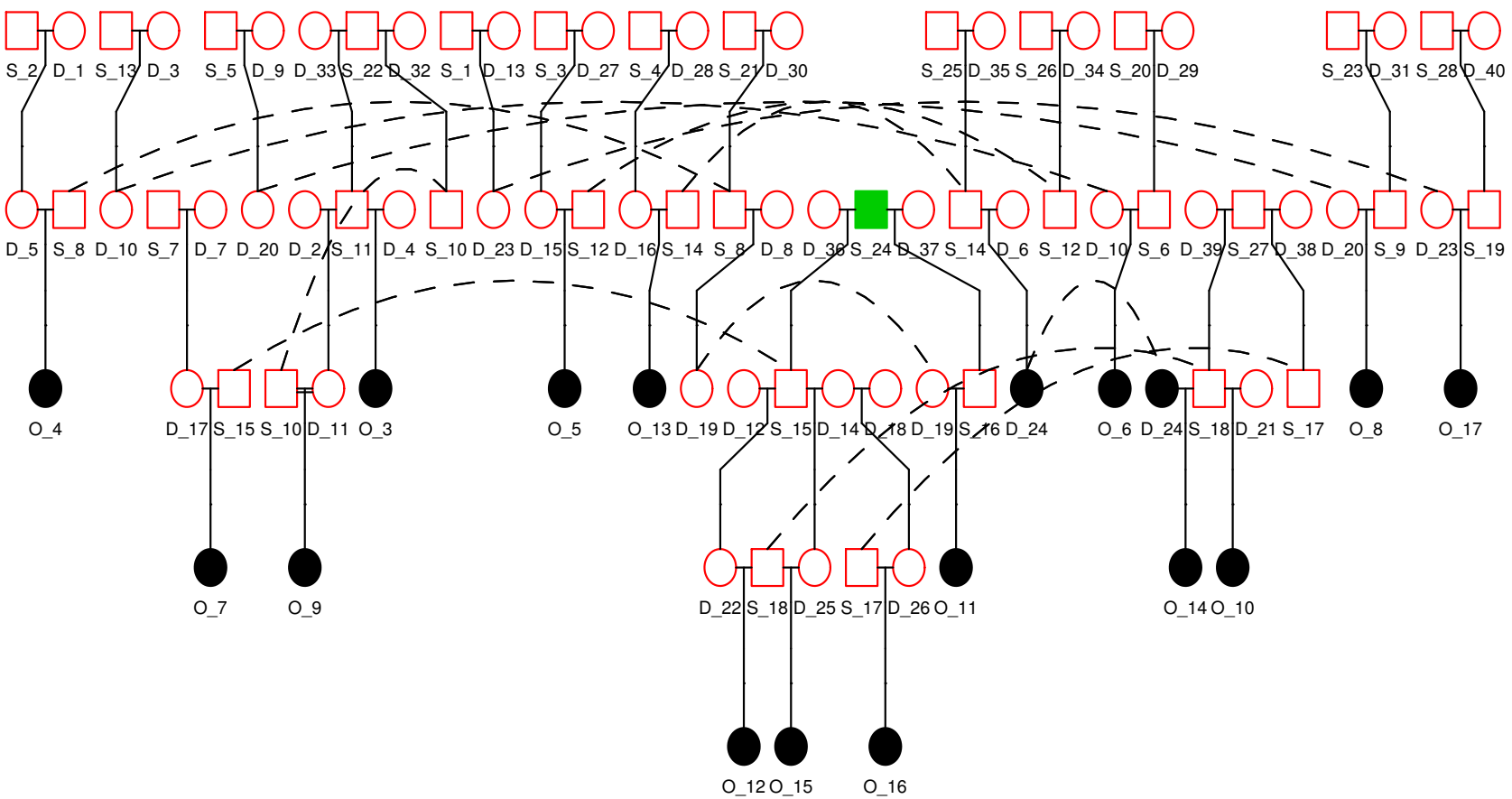
TABLE : Number of female animals born per year and their aggression status.

	Not aggressive	Aggressive
2007	222	
2008	204	5
2009	257	4
2010	290	4
2011	289	1

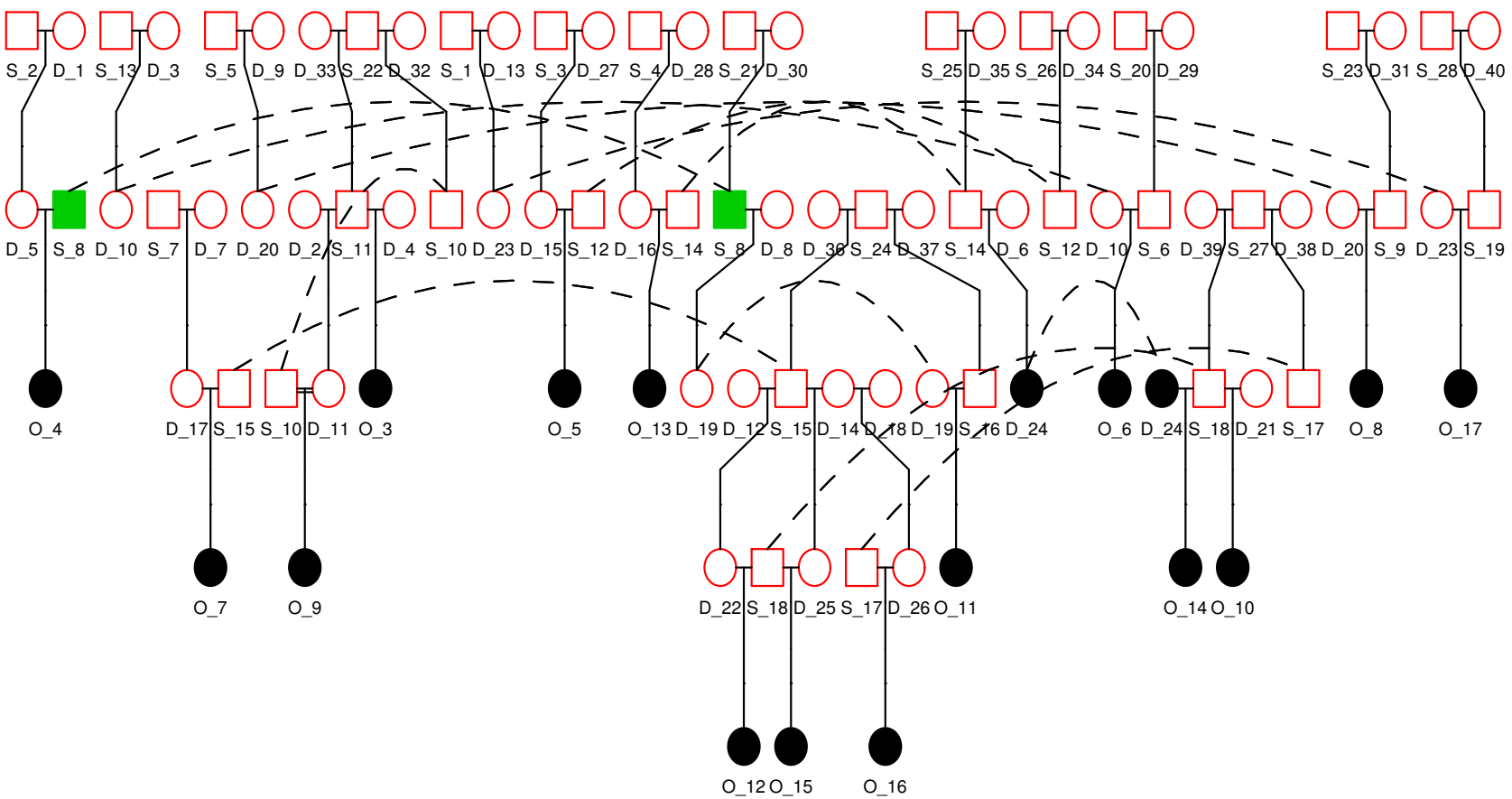
2 GENERATION PEDIGREE OF THE AGGRESSIVE ANIMALS



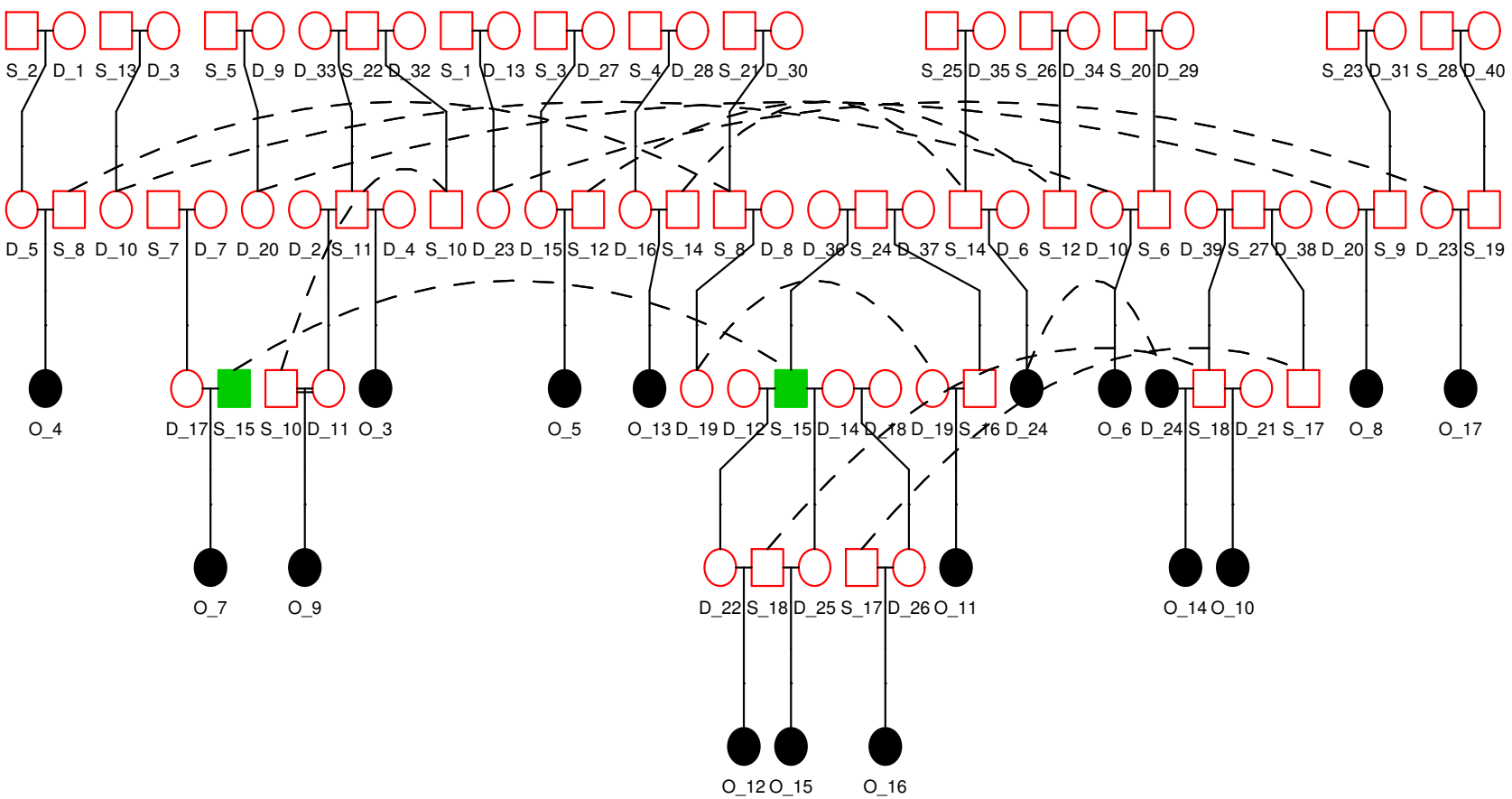
SIRE S_24: MARATHON BW MARSHALL-ET



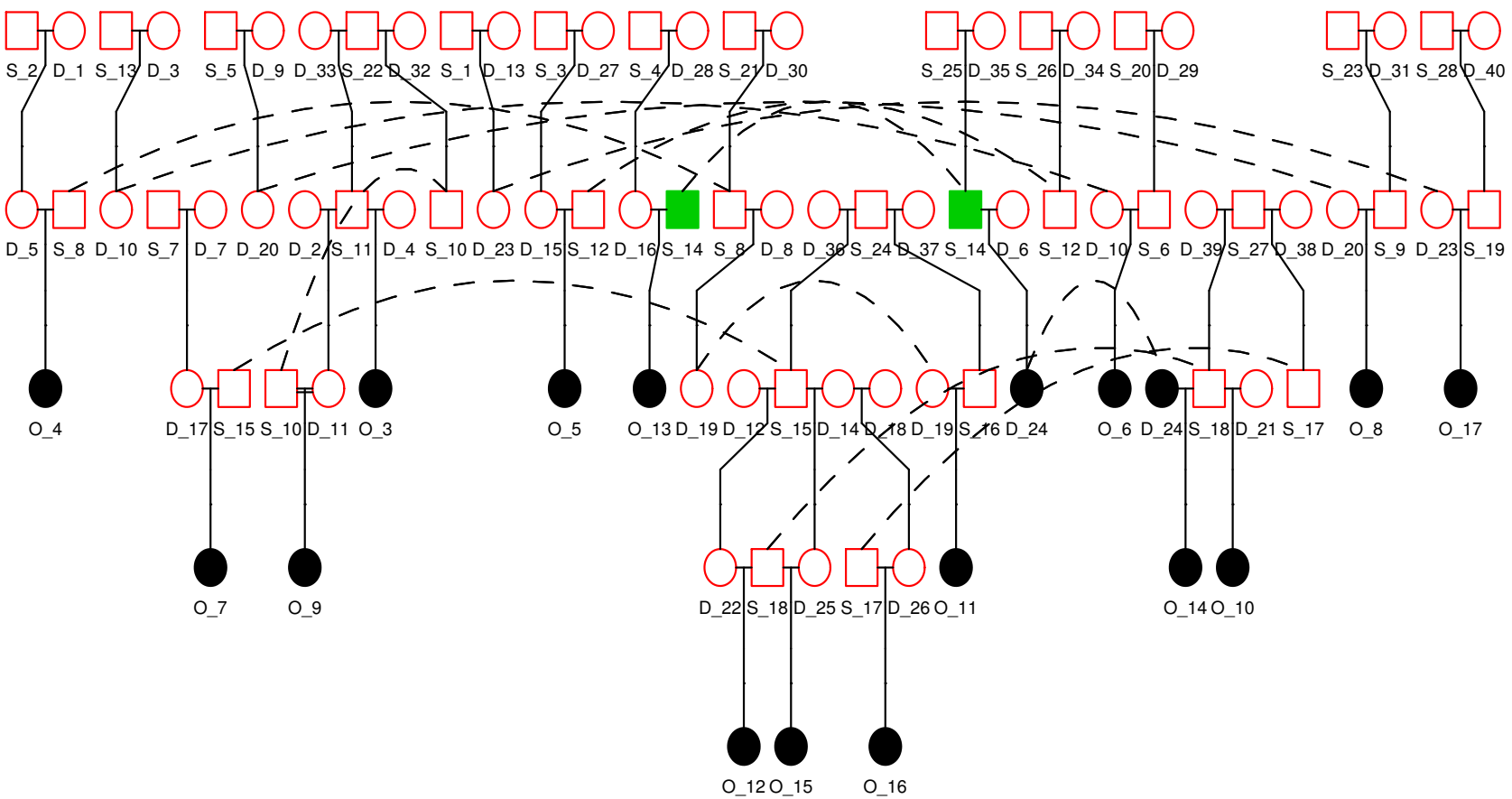
SIRE S_8: JESTHER



SIRE S_15: JENNY-LOU MRSHL TOYSTORY ET



SIRE S_14: ENGLAND-SCHILL DEANN ET



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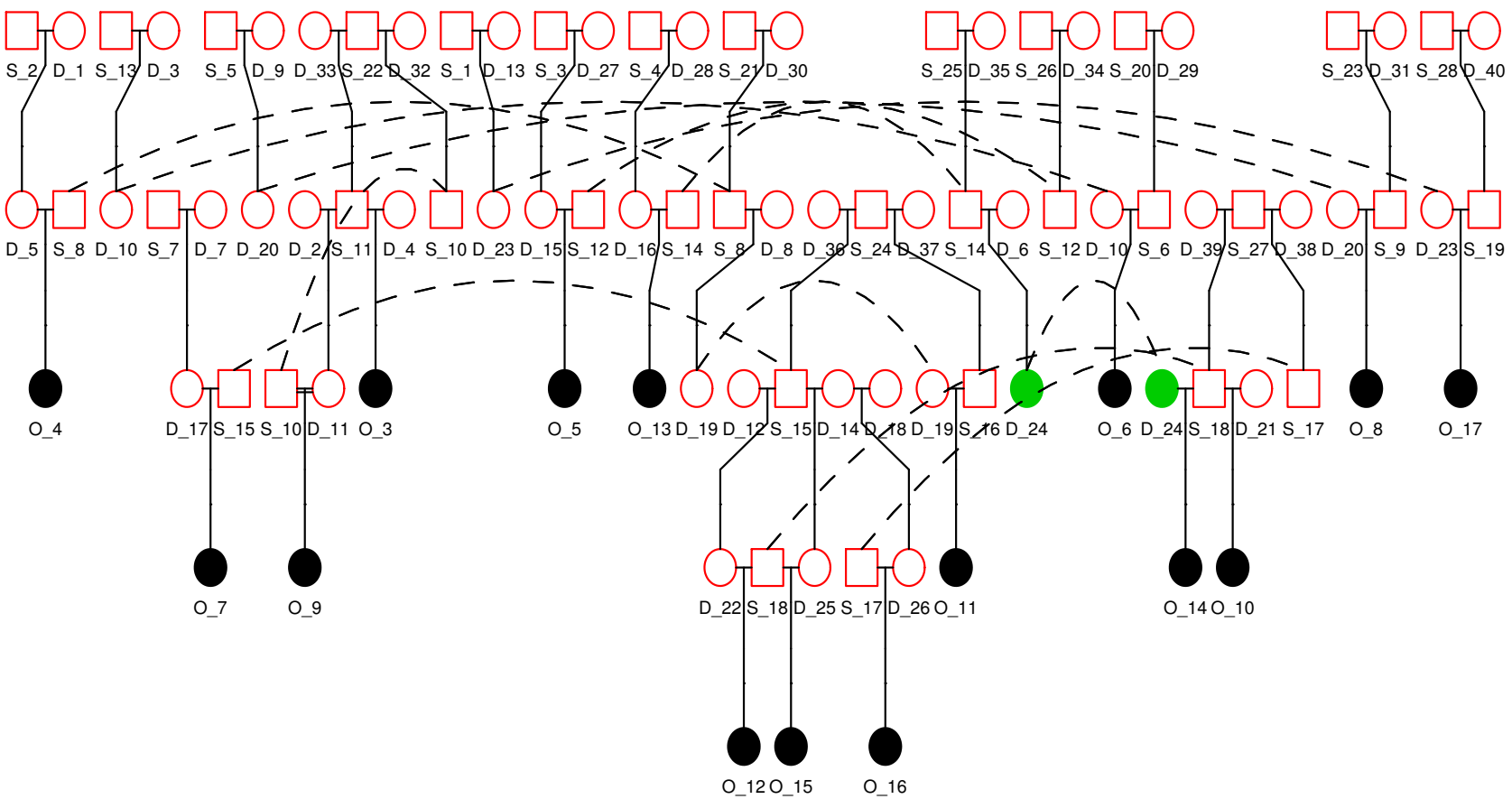
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D_5 S_8 D_10 S_7 D_7 D_20 D_2 S_11 D_4 S_10 D_23 D_15 S_12 D_16 S_14 S_8 D_8 D_36 S_24 D_37 S_14 D_6 S_12 D_10 S_6 D_39 S_27 D_38 D_20 S_9 D_23 S_19
O_4 D_17 S_15 S_10 D_11 O_3 O_5 O_13 D_19 D_12 S_15 D_14 D_18 D_19 S_16 D_24 O_6 D_24 S_18 D_21 S_17 O_8 O_17
O_7 O_9 D_22 S_18 D_25 S_17 D_26 O_11 O_14 O_10
O_12 O_15 O_16

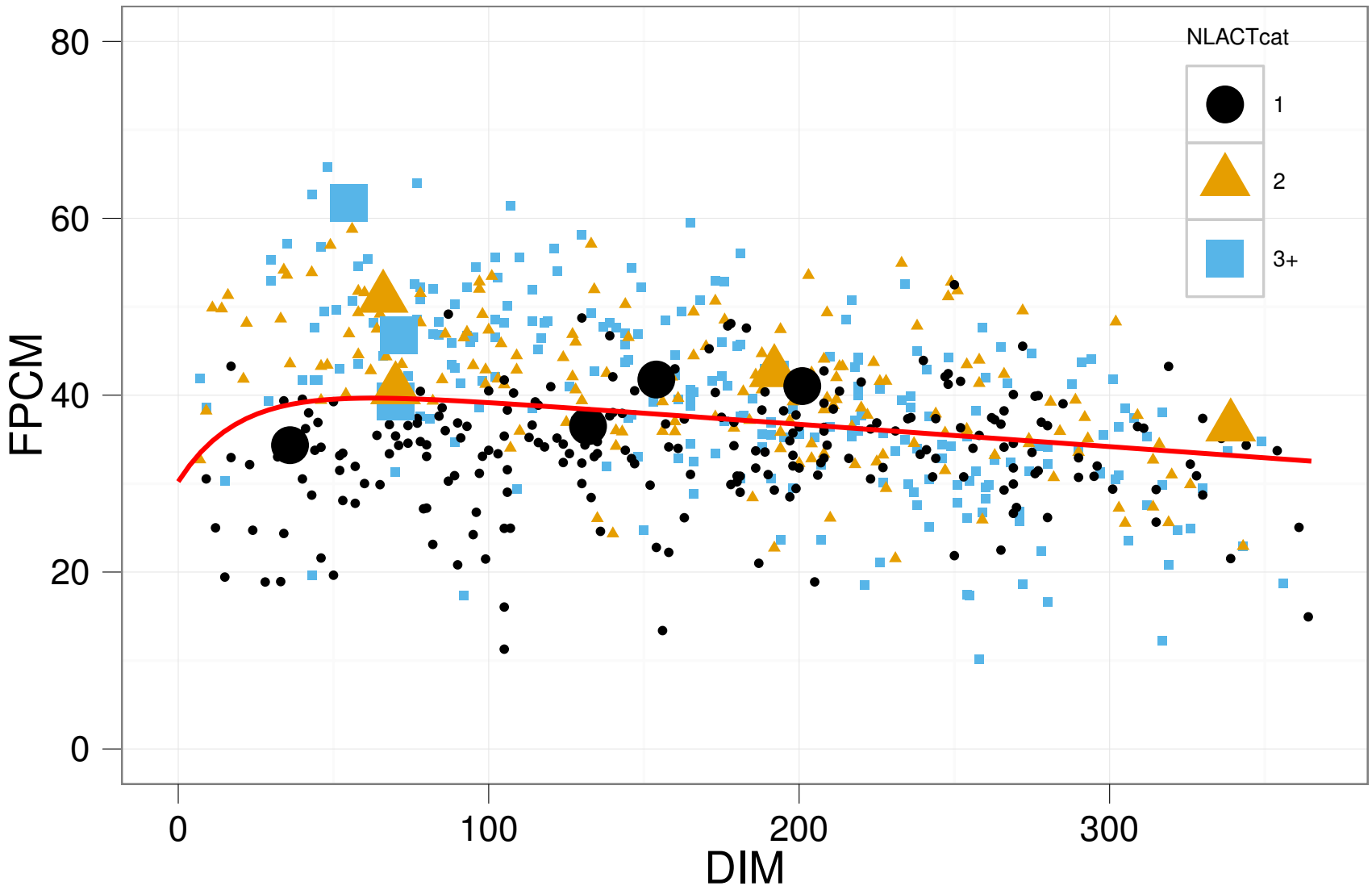
BREEDING VALUES

TABLE : Estimated breeding values of sires and maternal grandsires of non-aggressive and aggressive animals, mean (standard error of mean).

	EBV sire		**EBV mat-grandsire**	
	Aggr.	Non-aggr.	Aggr	Non-aggr
Kg milk	948.78 (20.72)	758.48 (0.59)	504.94 (21.76)	390.42 (1.09)
Kg fat	-0.28 (0.85)	-2.21 (0.02)	-5.00 (1.37)	-14.93 (0.04)
Kg prot.	7.39 (0.47)	3.49 (0.02)	-1.28 (0.75)	-4.10 (0.03)
NVI[1]	80.00 (5.30)	63.36 (0.10)	76.28 (4.27)	24.05 (0.12)
INET[2]	7.94 (3.23)	-10.08 (0.12)	-32.44 (5.30)	-64.99 (0.22)
Height	104.61 (0.16)	104.67 (0.01)	106.61 (0.16)	104.89 (0.01)
Weight	101.67 (0.12)	102.41 (0.00)	102.72 (0.11)	101.70 (0.00)
Character	103.44 (0.15)	103.62 (0.00)	101.88 (0.20)	101.64 (0.01)

[1] NVI: national index The Netherlands, `www.cr-delta.nl`
[2] INET: milk production index, `www.cr-delta.nl`

MILK PRODUCTION



MILK PRODUCTION PARAMETERS

TABLE : Production parameters of non-aggressive and aggressive animals.

	Aggressive	Non-aggressive
DIM at peak	61	60
Peak production	42.1	39.1
Persistence	-0.025	-0.024
305 day production	12227	11322

Conclusions

- No obvious genetic factor was identified, more data required to investigate genetic factors.
- Visible relationship between production level, breeding values and tendency to aggression.

Discussion

- Need to obtain aggression data over a longer period (up to the farmer).
- Is aggression also directed towards other animals?
- Does the behaviour also occur on other farms?
- Other factors?