Slaughter related factors and season and their effect on boar taint in Belgian pigs

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Introduction

- 2018: ban on castration → problem: boar taint
- Previous research (CASPRAK): variation between farms

1. Variation within farms?
2. Relation with risk factors?

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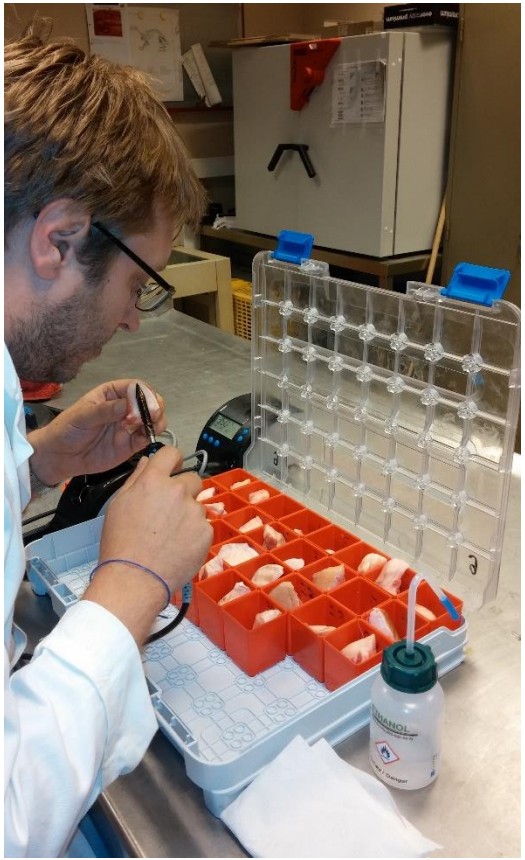
Method

Level	Constraint	N	Variable
Farm	-	34	-
Slaughter batch	Min. 2/farm	78	Time of transport
			Time in lairage
			Season
Boar	Min. 50/slaughter batch	9167	Skin lesions
			Carcass weight
			Lean meat %
			Boar taint score

Boar taint detection method

- Hot iron method
- 8-point scale:

  0 – 1 – 1.5 – 2 – 2.5 – 3 – 3.5 – 4
- Minimum of 2 expert scores per sample
- Median of expert scores as final score
- Cutoff 1.5 for final score → positive for boar taint



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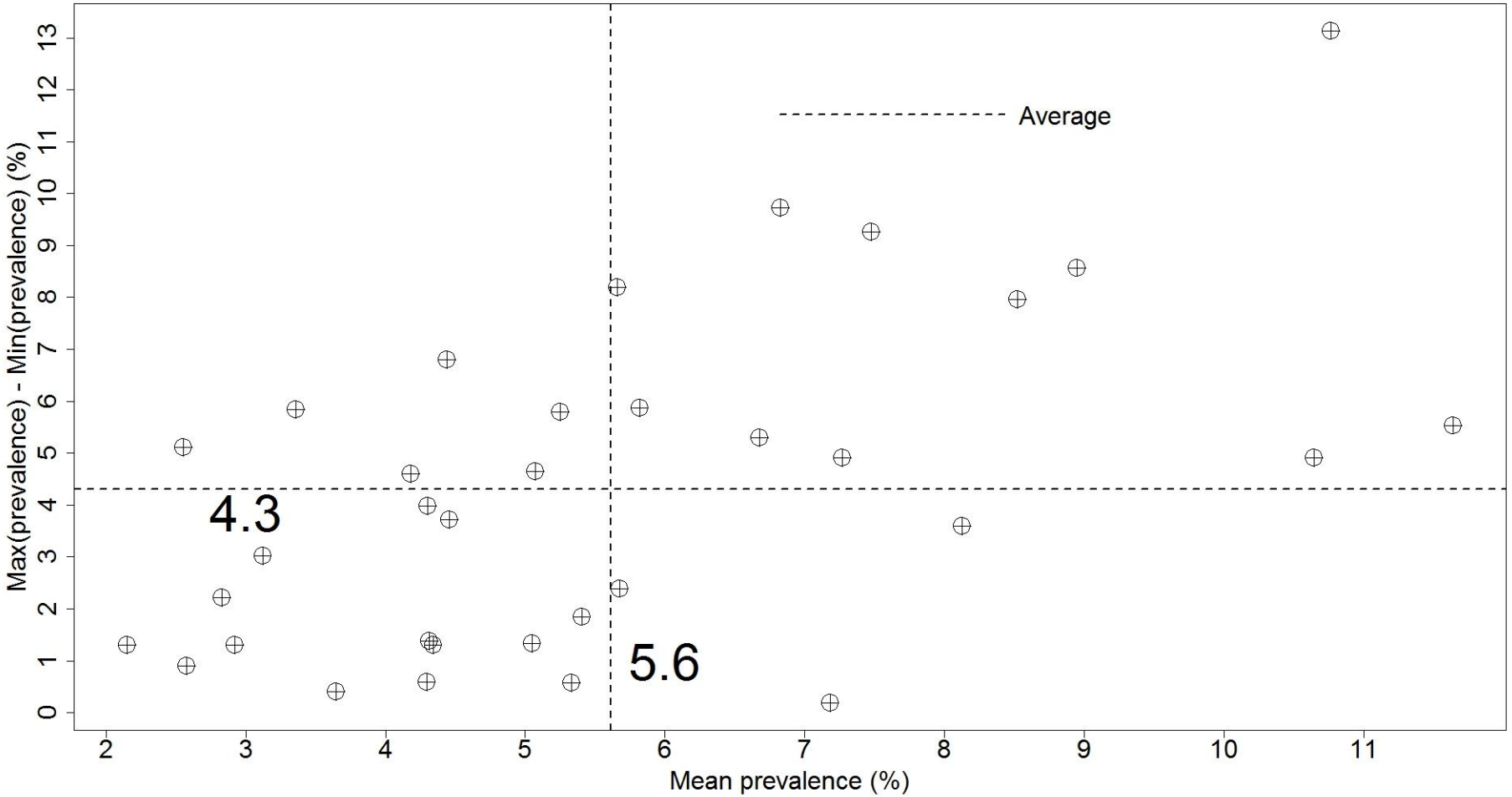
Average
4.3
5.6
Max(prevalence) - Min(prevalence) (%)
Mean prevalence (%)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
2
3
4
5
6
7
8
9
10
11

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Statistical analysis

- Univariate linear mixed binomial models for parameters
- 0/1 = negative/positive for boar taint
- Farm, slaughterhouse and slaughter batch as random factors

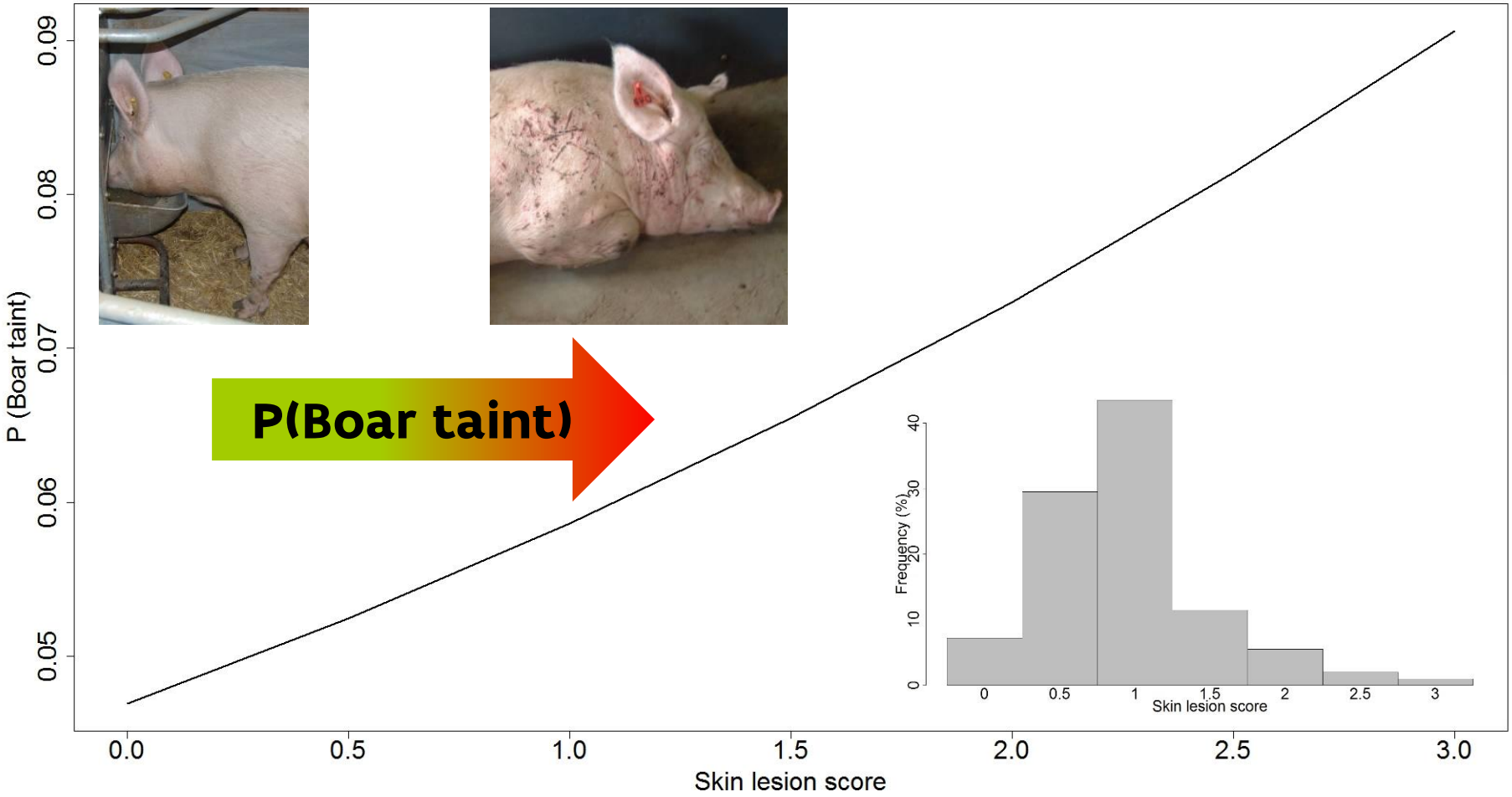
$$Log\left(\frac{p}{1-p}\right) = \alpha + \beta.X + \varepsilon \quad \text{p} = P(boar\ taint)$$

Odds ratio = P(boar taint) / P(no taint)

Results

Variable	P-value
Skin lesions	0.017
Lean meat %	<0.001
Season	n.s.
Carcass weight	n.s.
Time of transport	n.s
Time in lairage	0.051

?


P (Boar taint)
0.05
0.06
0.07
0.08
0.09
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Skin lesion score
P(Boar taint)
Frequency (%)
0
10
20
30
40
0
0.5
1
1.5
2
2.5
3
Skin lesion score

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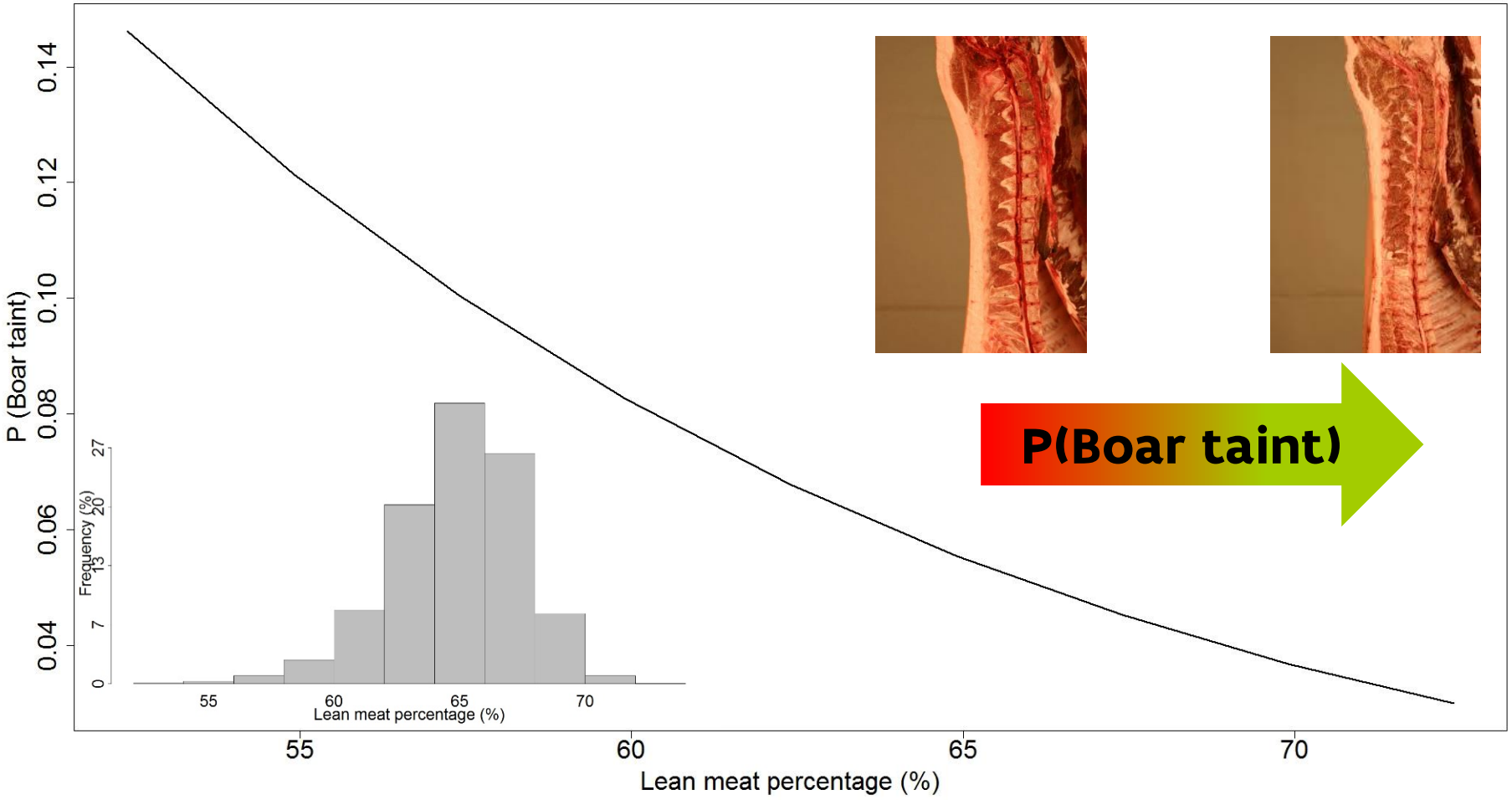
P (Boar taint)
0.04
0.06
0.08
0.10
0.12
0.14
55
60
65
70
Lean meat percentage (%)
Frequency (%)
0
7
13
20
27
55
60
65
70
Lean meat percentage (%)
P(Boar taint)

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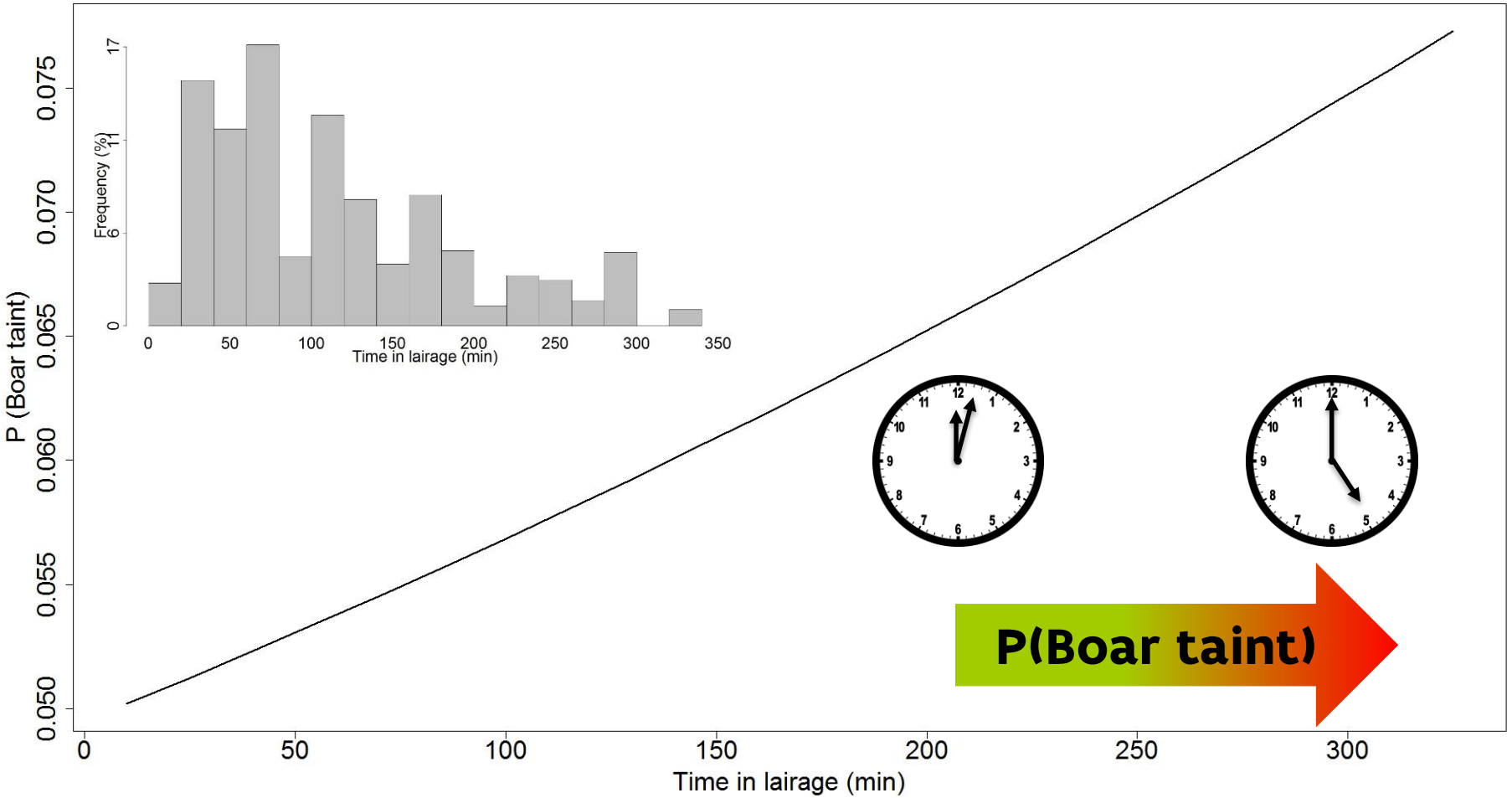
P (Boar taint)
0.050
0.055
0.060
0.065
0.070
0.075
0
50
100
150
200
250
300
Time in lairage (min)
Frequency (%)
0
6
11
17
0
50
100
150
200
250
300
350
Time in lairage (min)
P(Boar taint)

Discussion

- Skin lesions linked with SKA and IND concentrations (gut function)[1]
- Lean meat percentage has been linked with boar taint compounds[2]
- Pre-unloading time and duration of transport have been linked with AND, SKA and IND[1]

1 Wesoly et. al. 2015

2 Mörlein et. al. 2015

Conclusions

- Factors associated with slaughter moment at least partly related to boar taint prevalence
- (Undergoing) aggression (**more skin lesions**) during transport or in lairage is linked with **higher** chance of a tainted carcass
- **Leaner carcasses** have a **lower** chance of being tainted
- **Longer in lairage** linked with **higher** chance for boar taint

Questions ?

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