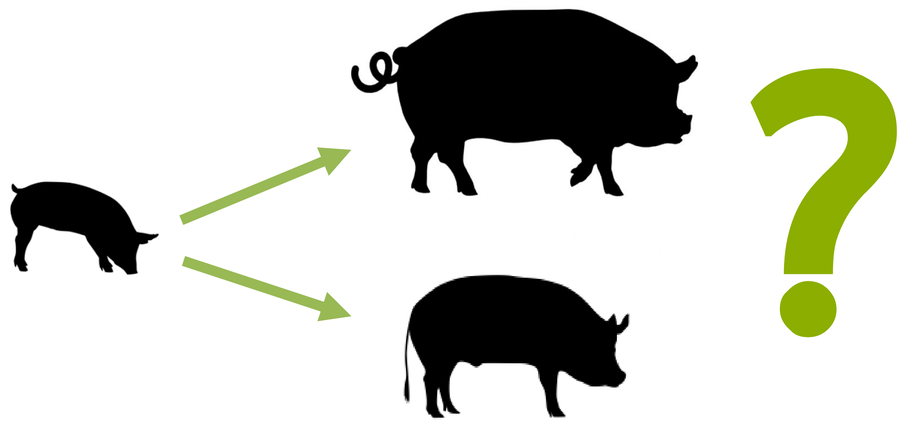
Do small pigs stay small or can they catch up?

Chari VANDENBUSSCHE [1], Sam MILLET [1], Jarissa MASELYNE [1]

[1] *ILVO (Flanders research institute for agriculture, fisheries and food), Burg. Van Gansberghelaan 92 bus 1, 9820 Merelbeke, Belgium*

INTRODUCTION

Varying growth rates between pigs are a major challenge in the fattening pig sector. Several strategies exist to limit variation within groups, often based on start weight of pigs. But is this funded? Can end weight classes be predicted based on start weight classes or can small pigs catch up?



MATERIAL AND METHODS

Weight data from 1116 pigs, fed ad libitum:

- 5 fattening rounds
  - Mixed sex groups (gilts and barrows)
  - Groups of 35, 38 or 59
- 1 fattening round
  - Same sex groups (gilts and boars)
  - Groups of 15

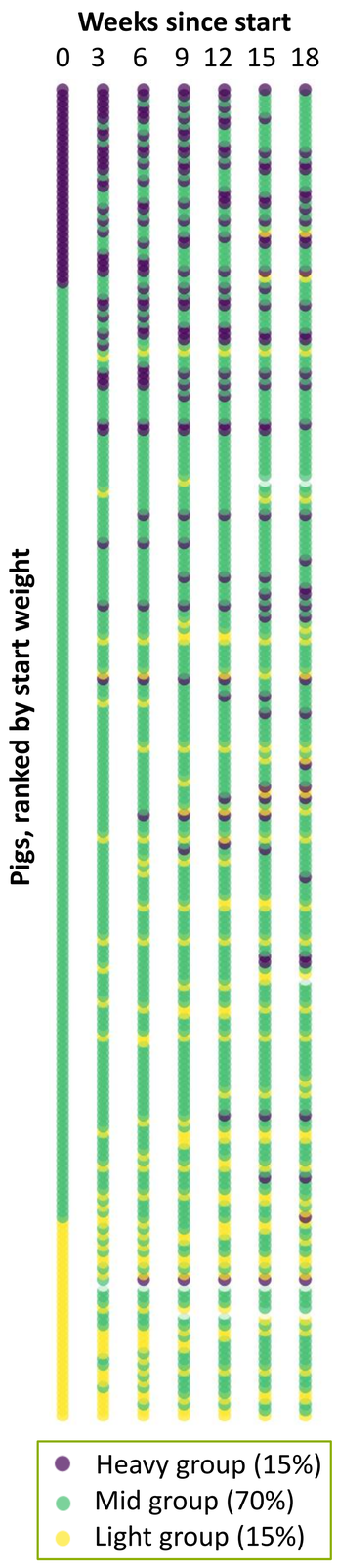


Figure 1. Overview of how the initial weight groups evolve over time during a fattening round. Example for round 1 (n= 235).

Housing groups were created with equal mean weight and standard deviation over all groups at the start of a fattening round.

For analysis, the pigs were classified post-hoc based on their start weight. This was done once for all pigs and once separately for each sex.

- **Heavy group**: 15% heaviest pigs
- **Light group**: 15% lightest pigs
- **Mid group:** remaining 70% of pigs

RESULTS

Table 1. Mean uniformity (percentage of population within 15% weight range from mean) and variation coefficient of all pigs and of the initially heavy and light groups at start-up and at the end.

	All		Heavy		Light	
	Start	End	Start	End	Start	End
Uniformity (%)						
All	73,9	80,7	97,8	80,9	98,3	76,5
Gilts	77,2	84,5	97,7	89,2	97,7	79,6
Barrows [1]	72,0	81,9	97,8	78,5	100,0	79,7
Var. Coef. (%)						
All	13,2	12,4	5,5	12,1	5,9	13,8
Gilts	12,4	11,6	5,5	9,9	5,9	13,0
Barrows [1]	13,5	12,3	5,4	14,6	5,4	13,3

[1] Calculated without boars of last fattening round

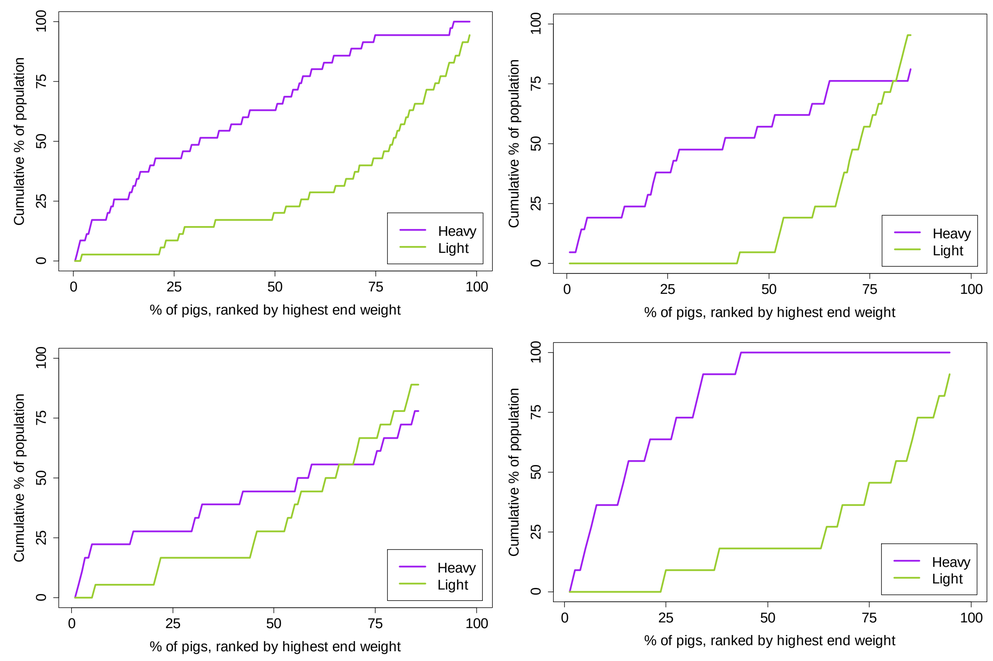


Figure 2. Cumulative distributions of pigs from the initial heavy and light groups in function of the weight ranking at the end of the fattening round.

Table 2. Distribution of initial heaviest and lightest pigs at the end of the fattening round.

	All	Barrows [1]	Gilts
Heavy remains heavy	30,1 ± 6,2 %	27,2 ± 12,5 %	36,1 ± 9,1 %
Heavy becomes mid	51,2 ± 9,0 %	51,1 ± 12,7 %	49,0 ± 14,6 %
Heavy becomes light	7,8 ± 5,2 %	8,9 ± 5,0 %	6,9 ± 6,5 %
Light remains light	37,3 ± 10,2 %	36,1 ± 14,7 %	38,0 ± 13,2 %
Light becomes mid	53,9 ± 5,2 %	50,6 ± 10,8 %	54,2 ± 17,2 %
Light becomes heavy	1,9 ± 2,3 %	4,4 ± 4,6 %	0,9 ± 2,3 %
Heavy dies	10,8 ± 6,3 %	12,8 ± 9,5 %	7,9 ± 6,7 %
Light dies	6,8 ± 5,8 %	8,9 ± 6,3 %	6,9 ± 8,2 %

[1] Calculated without boars of last fattening round

CONCLUSIONS

- Initial weight groups diffuse with time (**Figure 1**).
- Only one third of the pigs in the light (resp. heavy) class at the beginning of the round are still amongst the 15% lightest (heaviest) at the end of the round (**Table 2**).
- Small pigs tend to stay smaller than average (**Figure 2**).
- In the light and heavy group, variation between pigs increases over time and uniformity decreases (**Table 1**).
- Over all pigs, relative variation is stable over time and uniformity increases (**Table 1**).

Contact: *chari.vandenbussche@ilvo.vlaanderen.be*

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