Slaughter traits of hybrid pigs as influenced by terminal sire line and gender

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Introduction

If the production is aimed for animal products, e.g. dry-cured products or sausages, meat processors require meat with specific quality traits.

All economically important traits (daily gain, feed conversion, carcass weight, leanness, intramuscular fat content, pH, meat color etc.), do not correlate.

Objective

To analyze carcass and meat quality traits of widely used PIC (Pig Improvement Company) synthetic breeds in Croatia and to evaluate their suitability for processing into dry-cured products.

Material and methods

Animals

× 90 pig carcasses

× 2 terminal sire lines

  (PIC337 and PIC410)

× 2 genders

Carcass traits

× Carcass length „a" – *os pubis – atlas*

× Carcass length „b" – *os pubis* – 1st rib

× Ham length and circumference

× Muscle and fat thickness according to „two points method" approved in Croatia

Meat quality traits

× pH_{45} and pH_{24}

× Meat colour (CIE-L*, a*, b*)

× Drip loss by bag method

× Cooking loss

× WBSF

Statistical analysis

× Factorial ANOVA

× Terminal sire (S),

× Gender (G),

× Terminal sire x gender (S x G)

Results

Table 1. Means and standard deviations (in brackets) for carcass traits of investigated pigs according to terminal sire line and gender

Carcass traits	PIC 337		PIC 410		SE	Significance		
	Gilts (n=20)	Barrows (n=22)	Gilts (n=24)	Barrows (n=24)		G	S	G x S
Carcass weight (kg)	43,17 (1,17)	42,52[a] (1,74)	44,42 (2,89)	45,852[b] (8,01)	20,44	*	N.S	N.S
Backfat thickness (TP), (cm)	13,55[a] (4,07)	16,95[b] (3,05)	12,29[a] (3,10)	17,96[bc] (4,69)	14,39	N.S	**	N.S
Muscle thickness (TP), (cm)	76,80[a] (4,93)	70,64[b] (5,31)	75,50[ac] (4,94)	73,38[bc] (4,76)	24,84	N.S	**	N.S
Lean meat percentage (%)	59,68[a] (3,06)	56,01[bd] (2,41)	60,26[ac] (3,03)	56,36[d] (3,20)	8,68	N.S	**	N.S
Carcass length –"os pubis - atlas" (cm)	92,60[a] (1,79)	90,77[bc] (3,05)	91,29 (2,39)	90,13[c] (2,07)	5,65	N.S	**	N.S
Carcass length – "os pubis – first rib" (cm)	107,45[a] (2,33)	105,64[b] (2,90)	104,50[bc] (2,65)	102,79[d] (3,01)	7,55	**	**	N.S
Ham length (cm)	34,50[abd] (0,89)	33,95[ab] (1,05)	35,38[c] (0,97)	34,67[d] (1,20)	1,08	**	**	N.S
Ham circumference (cm)	74,30[acd] (1,59)	72,18[b] (2,42)	75,42[acd] (1,98)	74,42[d] (1,56)	3,69	**	**	N.S

Table 2. Means and standard deviations (in brackets) for meat quality traits of investigated pigs according to different terminal sire and gender

Meat quality traits	PIC 337		PIC 410		SE	Significance		
	Gilts (n=20)	Barrows (n=22)	Gilts (n=24)	Barrows (n=24)		G	S	G x S
pH_{45} ham	6,31 (0,21)	6,28 (0,21)	6,33 (0,18)	6,33 (0,19)	0,04	N.S	N.S	N.S
pH_{45} MLD	6,33 (0,25)	6,31 (0,17)	6,31 (0,19)	6,37 (0,18)	0,04	N.S	N.S	N.S
pH_{24} ham	5,84 (0,26)	5,86 (0,31)	5,86 (0,21)	5,94 (0,20)	0,06	N.S	N.S	N.S
pH_{24} MLD	5,69[a] (0,14)	5,71[a] (0,13)	5,75[a] (0,13)	5,84[b] (0,17)	0,02	**	N.S	N.S
drip loss, %	4,52 (2,49)	4,52 (2,55)	4,12 (1,73)	3,64 (2,19)	5,05	N.S	N.S	N.S
CIE L*	49,46 (3,07)	50,65 (3,71)	50,74 (2,98)	50,19 (3,78)	11,65	N.S	N.S	N.S
CIE a*	7,38[a] (1,42)	7,41[a] (1,37)	6,70 (1,20)	6,54[b] (1,27)	1,72	**	N.S	N.S
CIE b*	2,97 (1,23)	2,60 (1,12)	2,99 (1,06)	2,44 (1,02)	1,22	N.S	N.S	N.S
Cooking loss, (%)	33,14 (1,87)	31,16[a] (4,44)	33,21[bc] (1,99)	33,82[c] (3,95)	10,83	N.S	N.S	N.S
WBSF, (N)	49,15[ac] (7,99)	44,03[b] (6,40)	49,51[c] (5,90)	47,73 (8,59)	53,14	N.S	*	N.S