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Some "typical traditional" products obtained from *Casertana* pig autochthonous ancient genetic type (AAGT): Ripening loss[1]

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SUMMARY – The study was carried out on some "typical traditional products" obtained from the *Casertana* pig, an AAGT mostly reared in Campania (Italy), in order to point out possible differences between genders during the ripening period. The products were obtained from 35 castrated males and 22 entire females reared in multiple boxes at ConSDABI experimental farm and slaughtered at 160 kg of live weight. Within the limits of the field of observations, by comparing castrated males and entire females we observe that the difference in ripening loss percentage in the *salsiccia sannita* is not significant, and in the *fiocco sannita*, *pancetta* (*tesa* and *arrotolata*) *sannita* and *prosciutto* (dry cured ham) *sannita* are significant ($P < 0.05$). The weight ripening loss difference in *lardo sannita, soppressata sannita* and *capocollo sannita* are normally significant ($P < 0.05$).

Key words: Casertana, autochthonous ancient genetic type, ripening loss.

RESUME – *"Quelques produits traditionnels typiques issus de porcins de l'ancien type génétique autochtone (TGAA)* Casertana *: Pertes à la maturation". L'étude a été conduite sur quelques produits "traditionnels typiques" obtenus à partir du TGAA* Casertana*, élevé surtout en Campanie (Italie), pour mettre en évidence l'effet du facteur sexe sur les pertes à la maturation. Les produits ont été issus de 35 mâles castrés et 22 femelles entières, élevés dans des box multiples près de la structure expérimentale du ConSDABI et abattus à un poids moyen proche de 160 kg. Dans le domaine d'observation, la comparaison mâle castré et femelle entière a mis en évidence que la différence en perte pourcentuelle lors de la maturation n'a aucune signification pour la* salsiccia sannita*, et est significative (P < 0,05) pour le* fiocco sannita*, le* pancetta *(*tesa *et* arrotolata*)* sannita *et le* prosciutto sannita*. La différence de diminution pondérale de la maturation était normalement significative (P < 0,05) pour le* lardo sannita*, le* soppressata sannita *et le* capocollo sannita*.*

Mots-clés : *Casertana, type génétique autochtone ancien, diminution de la maturation.*

Introduction

Salami production is an ancient technique to preserve and make pig meat available for a long time from slaughtering too. In the past years some products were strictly linked to geographical area and the presence, in Italy, of different pig autochthonous genetic types (AAGT) allowed a wide diversification of salami. Currently, the technological innovation allows the production for the whole year of "standardized" salami obtained from cosmopolite breeds.

The reduction and/or the extinction of some autochthonous genetic types and the abandonment of agriculture may be considered as responsible for the loss or deep decrease of some "typical traditional products".

The rediscovery of local traditions and the rescue of AGTT are concretizing in the possibility to give an impulse to a sustainable development of the agri-ecosystem favoring the local economy

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according to the optimal use of autochthonous resource (Matassino, 2001). The present study is a part of a wide project aimed at the valorization and productive use of *Casertana* AGTT through quanti-qualitative evaluation of some "traditional typical products".

Material and methods

The study was carried out on the following "traditional typical products": *capocollo sannita*, *fiocco sannita*, *lardo sannita*, *pancetta* (*tesa* and *arrotolata*) *sannita*, *prosciutto sannita, salsiccia sannita* and *soppressata sannita*, obtained from 57 subjects (35 castrated males and 22 entire females) belonging to *Casertana* pig AAGT, reared in multiple boxes at ConSDABI experimental farm and manufactured at a salami factory in Circello (BN).

The half carcasses, kept in a refrigerated room at 2-4°C for about 72 hours, were dissected separating the lean cuts from fatty cuts.

Each product, obtained from meat manufacturing of the single animal, without preservatives (nitrites and nitrates), was periodically (daily, weekly or monthly; Table 1) monitored for weight loss during the whole ripening period.

Table 1. Monitoring sequence distinctly for single product

Product	Ripening period								
	0 d	6 d	15 d	20 d	30 d	40 d	90 d	180 d	360 d
Capocollo	X	X	X		X		X	X	
Fiocco	X				X		X	X	X
Lardo	X							X	
Pancetta arrotolata	X		X		X		X	X	
Pancetta tesa	X		X		X		X	X	
Prosciutto	X				X		X	X	X
Salsiccia	X		X		X				
Soppressata	X			X	X	X			

Experimental data for *fiocco sannita*, *pancetta* (*tesa* and *arrotolata*) *sannita* and *prosciutto sannita* were corrected for the animal live weight, while those obtained for *capocollo sannita*, *lardo sannita*, *salsiccia sannita* and *soppressata sannita* were corrected for the initial weight of the respective product.

The significance of the differences between means was evaluated by Students' t test.

Results and discussion

From data reported on Table 2 it is possible to evidence a quite similar behaviour between sexes during ripening of *salsiccia sannita* with an apparently higher loss in the castrated male in comparison with entire female (51% *vs* 46%).

Table 2. *Salsiccia sannita*. % loss in some ripening periods, distinctly by sex

Subjects (n)	Sex	Loss (%)	
		15 d	30 d
35	Castrated male	39.65	51.36
22	Entire female	30.92	46.11

Capocollo sannita (Table 3 and Fig. 1) which, at beginning of ripening showed a mean weight of 3.13 kg and 2.88 kg in the castrated male and entire female, respectively, after six months displays a loss of 46% and 40% respectively, with a significant difference ($P < 0.05$) only in the first month (2.35 *vs* 2.34).

Table 3. *Capocollo sannita*. Corrected weight loss, expressed in kilograms (kg), during ripening period, distinctly by sex

Sex	Ripening period (d)					
	0	6	14	30	90	180
Castrated male	3.130	3.050	2.630	2.350[a]	1.870	1.680
Entire female	2.880	2.840	2.530	2.340[b]	1.980	1.720

[a,b]$P < 0.05$.

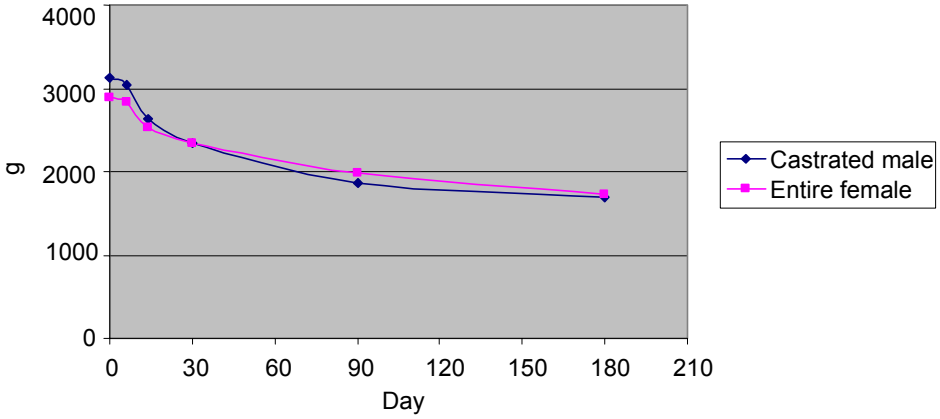

Fig. 1. *Capocollo sannita*. Variation of corrected weight loss, expressed in grams (g), during the ripening period, distinctly by sex.

As regards the other considered products, Tables 4 to 7 and Fig. 2 show that the percentage loss of *fiocco sannita*, *prosciutto sannita*, *pancetta* (*tesa* and *arrotolata*) *sannita,* and weight loss of *lardo sannita* and *soppressata sannita* are higher ($P < 0.05$) in the castrated male in comparison with entire female, at any time considered.

In particular, comparing data concerning fiocco and dry cured ham (Table 4), after one year of ripening, it evinced that the former shows, apparently, an higher percentage loss than the latter, both in castrated male (39.7 *vs* 30.5) and entire female (33.5 *vs* 21.4), likely due to the different preparation procedure, as the two products, derived from leg, are composed by exclusively (or nearly) the same muscles: *Semimembranosus*, *Biceps femoris* and *Semitendinosus*.

Table 4. *Fiocco* and *prosciutto sannita*. % loss in some ripening periods, distinctly by sex

Subject (n)	Sex	Product	Loss (%)			
			30 d	90 d	180 d	360 d
35	Castrated male	*Fiocco*	14.4[a]	20.6[a]	33.1[a]	39.7[a]
		Prosciutto	0.42[a]	20.9[a]	27.0[a]	30.5[a]
22	Entire female	*Fiocco*	12.5[b]	17.1[b]	26.9[b]	33.5[b]
		Prosciutto	0.5[b]	13.8[b]	18.7[b]	21.4[b]

[a,b]$P < 0.05$.

At the end of ripening, *soppressata sannita* (Table 5 and Fig. 2), obtained from partial trimming of ham and *Longissimus dorsi* with addition of lumbar subcutaneous fat in the proportion of 2-3% out of the total meat weight employed, had a percentage loss equal to 49.5% in castrated male and 44.7% in entire female and the difference was not significant.

Table 5. *Soppressata sannita*. Corrected weight loss, expressed in grams (g), during the ripening period, distinctly by sex

Sex	Ripening period (d)				
	0	10	20	30	40
Castrated male	488[a]	354[a]	299[a]	264[a]	246[a]
Entire female	473[b]	363[b]	314[b]	280[b]	262[b]

[a,b]$P < 0.05$.

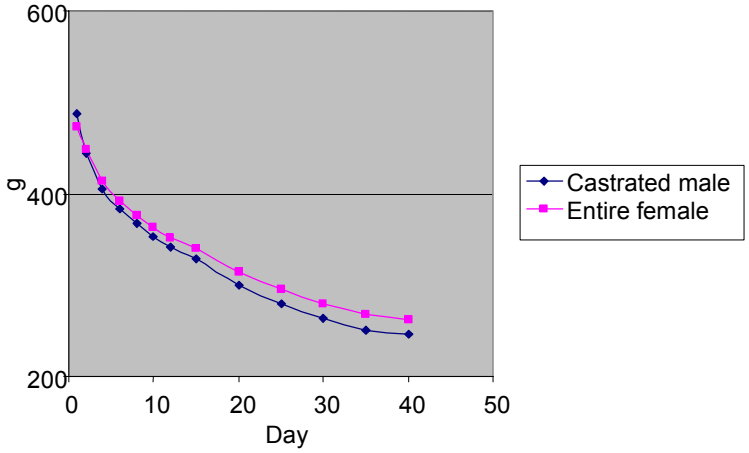

Fig. 2. *Soppressata sannita*. Variation of corrected weight loss, expressed in grams (g), during the ripening period, distinctly by sex.

Pancetta tesa and *arrotolata* (Table 6) had a percentage loss at any considered period and at the end of ripening (after six months) apparently higher in the former than the latter in both castrated male (34.3 *vs* 32.1) and entire female (26.2 *vs* 25.2).

Table 6. *Pancetta tesa* and *arrotolata sannita*. % loss in several ripening periods, distinctly by sex

Product	Subjects (n)	Sex	Loss (%)			
			15 d	30 d	90 d	180 d
Pancetta tesa	26	Castrated male	19.9[a]	25.8[a]	32.4[a]	34.3[a]
	22	Entire female	15.2[b]	18.5[b]	23.7[b]	26.2[b]
Pancetta arrotolata	32	Castrated male	15.8[a]	19.6[a]	26.8[a]	32.1[a]
	22	Entire female	13.3[b]	15.8[b]	21.4[b]	25.2[b]

[a,b]$P < 0.05$.

At the end of ripening (five months), *lardo sannita* (Table 7), obtained from dorsal fat collected from

6th thoracic vertebra to 1st lumbar vertebra (including the latter) had a percentage loss equal to 10.8% in the castrated male and to 6.4% in the entire female; this difference was not significant.

Table 7. *Lardo sannita*. Corrected weight loss, expressed in kilograms (kg), during ripening period, distinctly by sex

Sex	Ripening period (d)	
	0	150
Castrated male	5.300	4.730[a]
Entire female	6.850	6.410[b]

[a,b] $P < 0.05$.

Conclusions

The results evidenced that for all considered typical traditional products castrated male, shows a higher loss in both percentage and in weight, according to a previous research (Barone *et al.*, 2003). Such difference could be due to different texture of adipose tissue (a good saturated fatty acid content) as well as to a higher intramuscular fat content in females (data not published).

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