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Results of the dissection of ripened *prosciutto* (dry cured ham) obtained from *Casertana* pig autochthonous ancient genetic type (AAGT)[1]

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SUMMARY – The study was carried out on 26 *prosciutti* (dry-cured hams) obtained from the *Casertana* pig, an AAGT mostly reared in Campania (Italy), with the aim to point out some possible differences due to the sex in linear size and weight parameters detected at the dissection in *pera*, *falsa pera* and *gambo*. The results showed, within the limits of the observation field, that the maximum thickness is higher in the females ($P < 0.05$), as well as the weight of *pera* ($P < 0.05$) and *falsa pera* ($P < 0.05$).

Key words: *Casertana*, autochthonous ancient genetic type, dissection of *prosciutto*.

RESUME – *"Résultats de la dissection de* prosciutto *(jambon sec) affiné obtenu à partir de porcs de l'ancien type génétique autochtone* Casertana *(TGAA)". L'étude a été conduite sur 26 jambons issus de TGAA* Casertana*, élevés principalement en Campanie (Italie), afin de vérifier les éventuelles différences dues au sexe dans les mesures linéaires et dans les paramètres pondéraux décelables à la dissection sur* pera*,* falsa pera *et* gambo*. Les résultats mettent en évidence, dans le domaine d'observation, que l'épaisseur maximale est plus grande chez les femelles ($P < 0,05$), comme le poids de la* pera *et de la* falsa pera*.*

Mots-clés : Casertana*, type génétique autochtone ancien, dissection du* prosciutto*.*

Introduction

In the Italian pig-breeding, *prosciutto* (dry cured ham) represents the product of greater value that covers more than 60% of the commercial value of the side of heavy pork. Even if knowledge from previous studies (Bergonzini and Ferrari, 1980; Baldini, 1986; Zappa *et al.*, 1991) about some factors influencing the quality of "flow diagram" for "typical" *prosciutto* production may be transferred to *sannita* production, the specificity of some phases of the "flow diagram" needs *ad hoc* research.

The traditional processing of the *prosciutto* has very ancient roots, probably going back to the Etrurian who salted the pig hams with a technique increasingly improved up to now. It's known that the *prosciutto* "salting technique" was used, for the first time, by ancient Romans who named the full pig leg, dried by salt and ripened, *perexsuccus* (very dried) from which the current word *prosciutto* derives (Matassino, 2001).

The aim of the present paper is to study the influence of sex within the genetic type in relation to the parameters detected at the dissection of the *prosciutto* obtained by *Casertana* pig AAGT, seasoned for at least 24 months.

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Materials and methods

The study was carried out on 26 *prosciutti* manufactured in a salami making factory in Circello (BN), obtained from 21 castrated males and 5 entire females, belonging to *Casertana* AAGT, reared in multiple boxes at ConSDABI experimental farm, slaughtered at 160 kg of live weight.

After 72 hours of aging, each ham, isolated from the side of pork, was trimmed according to *Napoli* cutting model (Montemurro *et al*., 1974), in order to give at *prosciutto* the characteristic roundish shape known as "chicken leg".

After trimming, the *prosciutto* was subjected to salting process with coarse dry salt (for the lean parts) and wet damped salt (for the pigskin) for a month; during this period *prosciutto* was subjected to massages. In the ripening phase (about 9 months), after the salting, *prosciutto* underwent to *stuccatura* (plastering), process that allows to keep tender the *prosciutto* and to give meat flavour. At the 20th month, the *prosciutto* was subjected to the *puntatura* to verify the development of ripening.

The values of the experimental data were corrected for the net live weight of the animal.

The significance of the differences between the estimated mean values was tested by Student's t test.

Results and discussion

Data reported in Table 1 show a greater development of the *prosciutto* obtained from the entire female in comparison with that derived from castrated male ($P < 0.05$), in both maximum thickness (12.90 *vs* 11.04) and in the incidence of the two portions: *pera* (4.96 *vs* 4.04) and *falsa pera* (2.21 *vs* 1.61).

Table 1. *Prosciutto sannita*. Some linear size and same corrected weight parameters obtained during the dissection, distinctly by sex

Parameters	Sex	
	Castrated male	Entire female
	$\bar{x} \pm \sigma$	$\bar{x} \pm \sigma$
Linear		
Maximum length (cm)	56.00 ± 3.21	56.20 ± 4.78
Maximum breadth (cm)	29.98 ± 2.54	31.66 ± 1.67
Maximum circumference (cm)	72.06 ± 6.44	76.64 ± 3.34
Maximum thickness (cm)	11.03^{a} ± 1.52	12.90^{b} ± 1.34
Weight		
Fresh weight (iw) (kg)	12.1 ± 2.2	13.7 ± 2.3
Final weight (fw) (kg)	8.6 ± 2.2	10.3 ± 1.7
Trimmed weight (tw) (kg)	7.7 ± 1.9	9.3 ± 1.4
Pera (kg)	4.04^{a} ± 1.1	4.96^{b} ± 0.7
Falsa pera (kg)	1.61^{a} ± 0.6	2.21^{b} ± 0.3
Gambo (kg)	1.13 ± 0.5	1.37 ± 0.5
% loss		
fw/iw	28.9	24.8
tw/iw	36.3	32.1
tw/fw	10.5	9.7

$^{a,b}P < 0.05$.

There are no significant differences between sexes for:

(i) The length, the breadth and maximum circumference of the *prosciutto*, even if, certainly, these parameters are influenced by the weight class of *prosciutto*; indeed, a study carried out by Fabbri *et al.* (1983), examining data obtained from 504 dry cured hams, pointed out that the length parameter is less noticeable in the "heavy" classes as the weight and adiposity of *prosciutto* oppose to the natural twitch during drying process, while the breadth and the thickness parameters are similar for any weight class.

(ii) Some weight traits done on the *prosciutto*, in agreement with other studies (Quadri *et al.*, 1981; Fabbri *et al.*, 1983; Bittante *et al.*, 1991; Gallo *et al.*, 1994).

After 24 months of ripening, the castrated male has an apparent higher per cent loss (28.9%) if compared with entire female (24.8%).

On the *prosciutto*, the entire female has an apparent higher per cent incidence of *pera* (53.63 *vs* 52.24), *falsa pera* (23.88 *vs* 20.79) and *gambo* (14.76 *vs* 14.58), respect to the castrated male.

Conclusions

The results, valid within the limits of the observation field, point out that the entire female has a higher incidence of the noble parts (*pera* and *falsa pera*) in which *prosciutto* is divided, when it is boned.

References

Baldini, P. (1986). Influenza della materia prima e delle tecniche di stagionatura sulla qualità del prosciutto stagionato. In: *Atti della Tavola Rotonda "Qualità delle Carni suine Destinate alla Trasformazione nei Prodotti Tipici*", Reggio Emilia (Italy), 3 May 1986.

Bergonzini, E. and Ferrari, R. (1980). Andamento del calo di stagionatura dei prosciutti. *Ann. Ist. Sper. Zootec*., 13: 129-141.

Bittante, G., Gallo, L. and Montobbio, P. (1991). L'incrocio di scrofe Large White con verri Landrace Belga, Duroc e Spotted Polland: Effetto sulle caratteristiche quantitative e qualitative dei prosciutti stagionati. *Zoot. Nutr. Anim.*, 17: 239-253.

Fabbri, R., Bergonzini, E. and Rosi, M.A. (1983). Andamento della stagionatura dei prosciutti in relazione al peso, alla qualità e al periodo: Variazioni del peso nei primi 180 giorni, misure lineari sul fresco e sullo stagionato. In: *Atti V Congresso Nazionale ASPA*, pp. 411-421.

Gallo, L., Montobbio, P., Carnier, P. and Bittante, G. (1994). Breed and crossbreeding effects on weight, yield and quality of heavy Italian dry-cured hams. *Livestock Production Science*, 40: 197-205.

Matassino, D. (2001). Biodiversità e territorio. Giornata di studio su "Zootecnia sostenibile. Presunzione e consapevolezza!". *I Georgofili – Quaderni*, II: 11.

Montemurro, N., Casentino, E., Bordi, A. and Matassino, D. (1974). Alcuni aspetti anatomici e annonari del teglio "napoletano". *Prod. Anim*., 13: 187.

Quadri, G., Bergonzini, E., Zullo, A., Cosentino, E. and Matassino, D. (1981). Studio di alcuni tipi genetici di suino da salumificio allevati con un piano alimentare medio. Aspetti quanti-qualitativi ed economici del prosciutto stagionato. *Suinicoltura*, 22: 21-49.

Zappa, A., Franco, O., Poli, B.M., Campodoni, G., Parisi, G. and Geri, G. (1991). Influenza dell'alimentazione e del sesso sulle caratteristiche del prosciutto stagionato. In: *Atti IX Congresso Nazionale ASPA*, pp. 831-842.