Ready-to-eat roasted suckling piglet (Porcheddu): an innovative process for a Sardinian traditional dish

Porcu, S.¹,²; Battacone, G.²; Diaferia, C.³; Riu, G.² and Piredda, G.²

¹Agenzia Forestas. Cagliari. Italy.
²Agris Sardegna. Loc. Bonassai. Sassari. Italy.
³Dipartimento di Agraria. Sezione di Scienze Zootecniche. Università degli Studi di Sassari. Sardegna. Italy.
⁴Stazione Sperimentale per l’Industria delle Conserve Alimentari. Parma. Italy.

SUMMARY

Roasted piglet (Porcheddu) is one of the most appreciated traditional Sardinian dishes obtained from suckling animals slaughtered at 8-12 kg of body weight (BW). The traditional cooking method is time-consuming; this dish is eaten only when there is enough time for its preparation (cooking time of about 2 h). The Porcheddu is appreciated by both local and foreign consumers and there is also an increasing interest, for this traditional dish, by extra regional consumers and markets. Actually, since the occurrence of African swine fever (ASF), the trade of pigs and pig meat products is not permitted from Sardinia. The Council Directive 2002/99/EC provided a derogation for states member to authorize the production, processing and distribution of products of animal origin when a Heat treatment at a minimum temperature of 80°C, which must be reached throughout the meat is applied. The overall framework of this study was to evaluate an innovative process to obtain a traditional dish the Porcheddu suitable to achieve extra-regional markets and meet the demand of modern consumers and to assess the effect of carcass weight on the processing yield of suckling piglets, thermally treated, to obtain a ready-to-eat roast dish.

Un processo innovativo per la produzione di un piatto tradizionale della Sardegna: il maialetto (Porcheddu) arrosto

RESUMEN

El suinetto arrosto (Porcheddu) es uno de los platos tradicionales de Sardegna más apreciados, este se obtiene a través de animales sacrificados entre 8-12 kg de peso vivo. La modalidad tradicional de cocción requiere costumbres de preparación largas y el consumo se limita a las ocasiones en que se dispone de tiempos adecuados (la cocción dura cerca de 2 h). El Porcheddu es apreciado tanto por los consumidores locales como los turistas, y existe un interés creciente en este plato tradicional para el mercado extrarregional. Actualmente, debido a la aparición de la fiebre porcina africana (FPA), la comercialización de cerdos y productos de cerdo no está permitida en Sardenia. La Directiva 2002/99/EC proporcionó una derogación para los estados miembros para autorizar la producción, procesamiento y distribución de productos de origen animal cuando se aplican tratamientos térmicos con una temperatura mínima de 80°C, que debe alcanzarse a lo largo de todo el producto. El marco general de este estudio fue evaluar un proceso innovativo para obtener un plato tradicional el Porcheddu apto para alcanzar mercados extrarregionales y satisfacer las solicitudes del consumidor moderno y cumplir las garantías de calidad. Además, se evaluó el efecto del peso de la res en el rendimiento del proceso de cocción de suinetos, térmicamente tratados, para obtener un suinetto arrosto precocido.

INTRODUCTION

Swine presence in Sardinia since the early Neolithic is clearly documented by several zoo-archaeological studies (Wilkens 2003; Albarella et al. 2006). At this time the structural data of swine farming in Sardinia is represented by about 170,000 pigs, of which about 62,000 are breeding sows, reared in about 15,000 farms. A very relevant output of swine farms in Sardinia is the suckling piglet (Porcheddu) that is slaughtered to obtain meat used to be roasted and prepare one of the most representative dish of regional cuisine (La Mar- mora 1826; Porcu 2014). These piglets are sacrificed when they are about a month old and have reached a body weight of 7-12 kg. The traditional preparation of roasted suckling piglet is relatively long (cooking time of about 2 h) and its consumption is appreciated by both local and foreign consumers and takes place in

Arch. Zootec. PROCEEDINGS IX Simposio Internacional sobre el Cerdo Mediterráneo: 181-183. 2018
agritourisms, restaurants of local specialties or during family lunches. However, there is also an increasing interest, for this traditional dish, by extra regional consumers and markets.

Actually, since the occurrence of African swine fever (ASF), the trade of pigs and pig meat products is not permitted from Sardinia; the Council of the European Union (Council Directive 2002/99/EC) provided a derogation for states member to authorise the production, processing and distribution of products of animal origin when a "Heat treatment at a minimum temperature of 80 °C, which must be reached throughout the meat" is applied as treatment to eliminate ASF risks. This precooking heat treatment is implemented in the extraordinary eradication program of the ASF 2015-2017, issued by the Regional Government (Regione Autonoma della Sardegna 2016) in order to export pork products. Thermal processing of Ready-to-Eat meat products is an innovative technology adopted to reach new markets with local foods and to comply with modern consumer choices.

The overall framework of this study was to evaluate an innovative process to obtain a traditional dish (Porcheddu) suitable to achieve extra-regional markets and to meet the demand of modern consumers. The specific objective of this paper is determine the effect and to meet the demand of modern consumers. The positive results of the study on the shelf life of this product (Comunian et al. 2016) lead us to further research to improve and standardize a ready-to-eat roasted piglet.

MATERIAL AND METHODS

Thirty male piglets at 30±2 days of age were chosen from litters of (Large White x Landrace) sows, artificially inseminated with semen of Piétrain boars, reared in a commercial farm. Piglets were individually weighed and sorted in two groups (15 animals/ each) according to their body weight (L = 7 to 9.5 kg and H=10 to 12.5 kg, respectively). All animals were sacrificed by exsanguination following electrical stunning.

Hot carcass weight was recorded and muscle pH and temperatures were measured in the *Longissimus dorsi* muscle at 45 min (pH1) and at 24 h (pH2) postmortem. Carcasses were chilled in the refrigerator, for 24 h at 4 °C temperature, and the measures were repeated before their split into left and right side.

All right sides of carcass were weighed, flavored with salts and spices, and aged in cold room at about 4°C for 24 h then re-weighed to evaluate the salting loss. Each half carcass was put in a ventilated oven until the temperature reached 80°C (figure 1) at bone level (femur). Each half carcass was immediately cooled placing them in a chiller at 3-4°C for 24 h, then vacuum packed and immersed in a water bath at 90°C for about 5 sec, and finally stored at 4°C for the shelf-life evaluation (Comunian et al. 2016).

The analysis of variance (ANOVA) was performed considering the effects of body weight on all measures.

RESULTS AND DISCUSSION

Results (Table I) showed a negative effect of BW on hot (76.9 and 82.7% for H and L, respectively) and cold (73.9 and 79.7% for H and L, respectively) carcass dressing percentages. The decrease of carcass dressing percentage with BW implies that the carcass components of H piglets had a lower increase than the gut components. Weight losses due to flavoring and cooking processes were higher for H carcasses. The total process yield of the ready-to-eat product was higher (p=0.008) in L than in H carcasses (84.1 vs 81.2%, respectively). The higher weight loss observed in Porcheddu of the H carcasses is probably due to a greater amount of fused fat during cooking technique.

This preliminary study on the production of the Porcheddu, and the positive results of the study on the shelf life of this product (Comunian et al. 2016) lead us to further research to improve and standardize a ready-to-eat dish for the regional and extra-regional market, in order to increase the profitability of a traditional dish by using innovative processes.

ACKNOWLEDGMENTS


READY-TO-EAT ROASTED SUCKLING PIGLET (PORCHEDDU): AN INNOVATIVE PROCESS FOR A SARDINIAN TRADITIONAL DISH

GENUINA” (Ploaghe, SS, Italy) for their precious contribution.

BIBLIOGRAPHY


La Marmora, A. 1826, Voyage en Sardaigne, de 1819 a 1825. Description Statistique, Phisique et Politique de cette ile, avec recerches sur ses productions naturelles et ses antiquités, Ed. Archivio Fotografico Sardo

Porcu, S. 2014, Indagine sulle caratteristiche di qualità della carne fresca e dei prodotti a base di carne ottenuti dal suino di razza Sarda autotona, Tesi di Dottorato di Ricerca in Produzione e Sicurezza degli Alimenti di Origine Animale (XVI ciclo), Università degli Studi di Sassari, Dipartimento di Medicina Veterinaria (21 Febbraio 2014– Sassari – Italy)
