

ECONOMIC IMPACT OF SURGICAL CASTRATION IN THE SUCKLING PERIOD

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INTRODUCTION

Available evidence shows that surgical castration has a detrimental influence on health, resulting in an economic impact. This study evaluated the economic impact of surgical castration with pain relief in the suckling period.

MATERIALS AND METHODS

A total of 3696 male pigs from 721 litters were included in the study. Within each litter, half of the males were kept as entire males (EM) and half were surgically castrated (SM), using a non-steroidal anti-inflammatory drug before castration and a topical antibiotic spray immediately after the surgical procedure.

Economic calculations were done based on difference between treatments in number of piglets weaned per sow per year (WSY) and cost of castration (cost of medications used during castration and labour cost). 1.5 h time was assumed as time required to castrate 100 piglets, and cost of worker was 25 EUR/h. Comparison of weaned pig production cost of EM vs SM was done assuming cost per sow (677 EUR; SIP Consultors, 2015) and WSY production in Spanish farms in 2015 (26.2 WSY; PigCHAMP Pro Europa dataset).

RESULTS

Productivity of swine farms has progressively increased in last years from 22.5 WSY in 2006 up to 26.2 WSY in 2015 (PigCHAMP Pro Europa dataset). In the present study, pre-weaning mortality (figure 1) was higher in CM than in SM (8.4% vs 5.9%; $P < 0.001$), but in this study percentage of pigs treated with antibiotics was not affected by castration. Therefore, a higher number of weaned pigs will be obtained where entire males are reared instead of castrated males.

Figure 1. Pre-weaning mortality by reason of death.

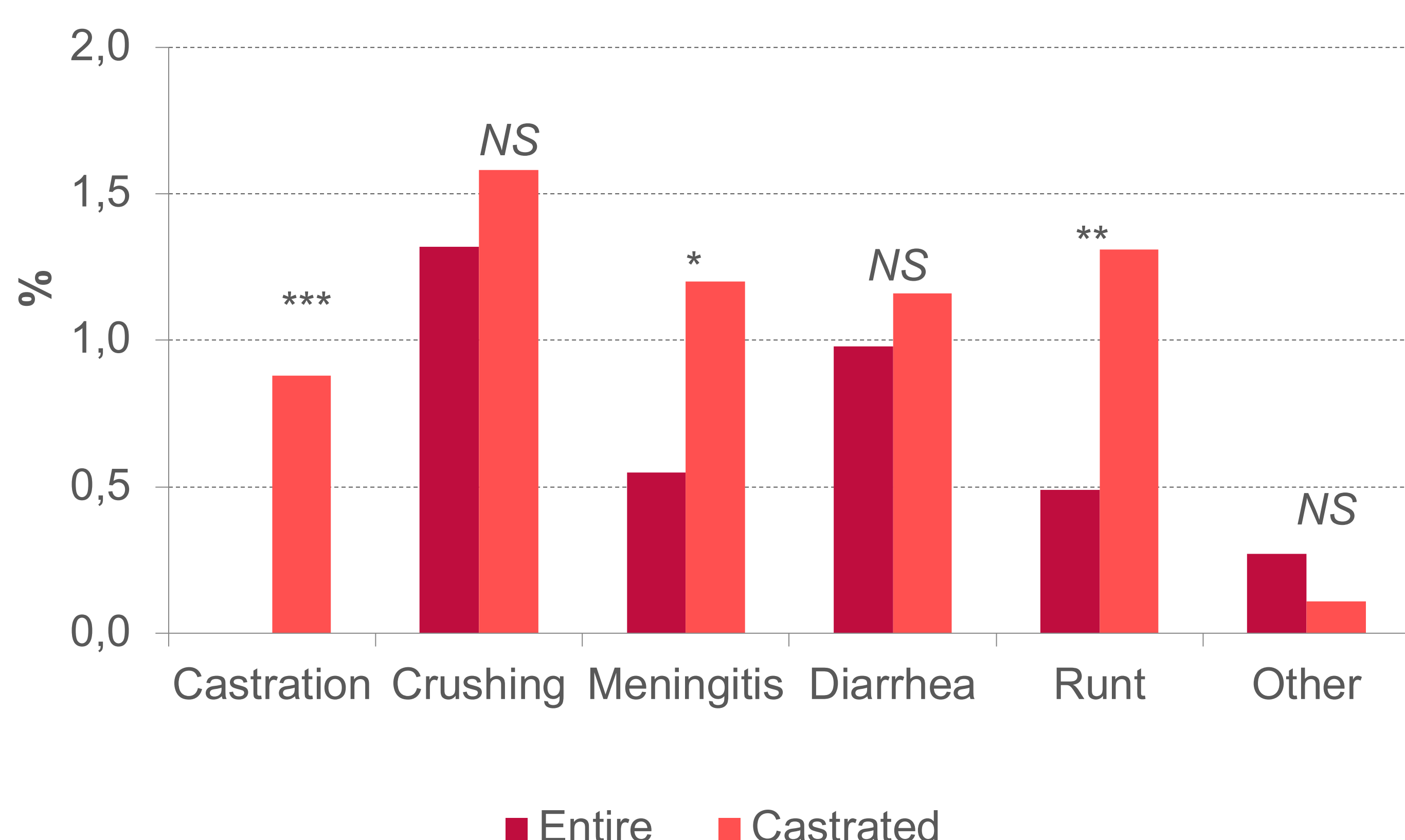


Table 1 shows an example of weaned pig cost comparing production of entire vs castrated males assuming current cost per sow in Spanish condition (677 €; table 12) and WSY production in Spanish farms in 2015 (26.2 WSY). In addition, the cost of castration was calculated as the sum of the cost of meloxicam (when this study was conducted it was 15.68 € / 100 ml and 0.04 ml were administered per piglet), cost of topical antibiotic spray (in this case 5.38 € / 200 ml and about 1 ml administered per piglet), and the labor cost (in the experimental farms it was estimated as 25 € / h worker). Although it is highly variable and dependent on many factors, we assumed that a trained worker needs about 1.5 h to castrate 100 piglets, including the meloxicam administration (30 min before conducting the surgical procedure).

Table 1. Difference of weaned pig cost between entire and castrated pigs production

| | WSY ¹ | WSY Males | %PWW | Weaned pigs less | Cost Sow (€) | Castration cost (€/pig) ² | Cost weaned pig (€) |
|-------------------|------------------|-----------|--------------|------------------|--------------|--------------------------------------|---------------------|
| ENTIRE | 26.2 | 13.1 | 5.90 | 0.773 | 677 | - | 25.84 |
| CASTRATED | 26.2 | 13.1 | 8.44 | 1.106 | 677 | 0.19 | 26.36 |
| Difference | | | 2.54% | 0.333 | | | 0.52 |

Number of weaned pigs per sow per year would be reduced when surgical castration is applied. In particular, based Spanish farms data in 2015, 0.333 male pigs less would be weaned in farms rearing surgically castrated males compared with farms rearing entire males (assuming half of WSY are male pigs). Therefore, the cost of one weaned pig per sow per year is 0.52 € higher in sows where surgical castration is applied in 3-6 days old male pigs; this means, cost of one male weaned pig is 1.04 € higher in castrated compare with entire pigs. Taking into account that prolificacy of sows is progressively increasing and hence the average birth weight of pigs is decreasing, the net result is an increase in the cost per castrated weaned piglet, because the pre-weaning mortality increases sharply in the in castrated group with percentile lightest piglets.

CONCLUSIONS

Surgical castration promotes productive losses in the suckling period because it causes an increase in PWM. This implies an economic cost in the suckling period, worsening in later productive phases by a higher feeding cost.

