# Why are most EU pigs tail docked? Economic and ethical analysis of four housing and management scenarios in the light of EU legislation and animal welfare outcomes

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***Supplementary Table*** *Details of the costs included to estimate the total costs of the victims of tail biting* ***1.***

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| --- | --- | --- | --- |
| Cost item | | Value (€/victim pig) | Assumptions |
| Vet and medicine | | 6.00 | Pig treated for 5 days3: (0.4 €/day medicine + 0.35 €/day vet work2)× 1.6 |
| Extra labour effort by farm workers | | 6.85 | Extra time/victim: 27 minutes 4, Duration of treatment 5 days, time spent in hospital 14 days, and proportion of victims moved to hospital pen 14.8% based on Niemi *et al*. (2012a). Price of labour 15€/hour5. |
| Materials |  | 0.30 | An extra enrichment of 0.5 kg/day/victim is provided in the original pen for 5 days and for two weeks in the hospital pen. |
| Disposal |  | 2.80 | The same percentage of victims (2.12%) to be destroyed as reported by Zonderland *et al*. (2011). |
| Loss of condemned meat | | 1.22 | 0.8 kg condemned/victim based on Niemi *et al*. (2012a), price €1.52/kg pigmeat. |
| Reduced daily gain and consequent increased feed use to finishing6 | | 1.80 | Simulated based on Niemi *et al*. (2012b) and Sinisalo *et al*. (2012) |

1 Numbers based on authors’ calculations, literature and data from an experimental farm. The fixed costs of hospital pens are not included as the farm is assumed to have a fixed hospital pen capacity and the costs are included in the fixed costs.

2 Estimated after consultation with Professor Mari Heinonen, University of Helsinki and University Pharmacy.

3 1.6 is a multiplier for secondary infections for each victim based on Niemi *et al*., 2012a.

4 Including: 2 minutes/day/victim for medication (including secondary infections) for five days for 1/3 of victims + 2.55 minutes/victim for moving the animal to hospital pen for 14.8% of victims + 1 minute/day/victim for providing extra enrichments and extra cleaning for two weeks after tail biting (except 2.9 minutes in a hospital pen).

5 Assumptions concerning the amount and cost of labour based on authors’ calculations and Mäki-Mattila (1998), Parviainen (2001) and Niemi *et al*. (2012a).

6 In our model, average daily weight gain in bitten pigs was reduced by 1-3% compared with unaffected pigs, which results in a longer finishing period and a greater use of feed, meaning that feed efficiency is also affected due to longer fattening time requiring more feed for body maintenance (Sinisalo et al., 2012). We have assumed that there are no separate direct effects on feed conversion efficiency itself. Of the €1.80 reported here, the effect of increased feed consumption due to the decreased average weight gain accounts for €1.39 per pig in extra costs whereas the direct impact of reduced weight gain in terms of reduced throughput of pigs per unit of time was €0.41 per pig.

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