

Killing of „surplus“ piglets – ethical questions, possible methods



Claudia Meier¹, Ernst Lücker², Karen von Holleben¹

bsi Schwarzenbek

Applied animal welfare at transport & slaughter

Introduction

Staff on farm is allowed to kill piglets if indicated and performed correctly. EU Regulation 1099/2009 defines “emergency killing” as “the killing of animals which are injured or have a disease associated with severe pain or suffering and where there is no other practical possibility to alleviate this pain or suffering”. The term “practical possibility” is difficult. Some measures of care would be practical if more staff was available. Is “lack of staff” an ethical correct reason to kill a piglet?

Stunning/killing methods for piglets at farm - Pros & Cons

- Non-penetrative captive bolt is not allowed for emergency killing of pigs it works as a one-stage killing method (WOODS, 2012).
- Electrical current as a one-stage killing method does not work for piglets smaller 4 kg because it is not possible to trigger heart fibrillation.
- For the CO₂-chamber questions remain, whether the induction phase is according to welfare.
- Blow on the head or manually applied blunt force trauma remains a cheap and practicable stunning method but is disregarded for aesthetical reasons (AVMA, 2013).
- Penetrative captive bolt with current apparatuses is unsafe in small piglets. According to German legislation it is a stunning method and requires a second step for killing. As farmers are reluctant to bleeding, we are testing penetrative captive bolt as one-stage killing method for piglets up to 30 kg. At the same time we try to get information on the reasons for killing.

Pretests

Restraining methods were developed which allow piglets of different weight to be calmly placed and to provide easy access to the optimum shooting position.

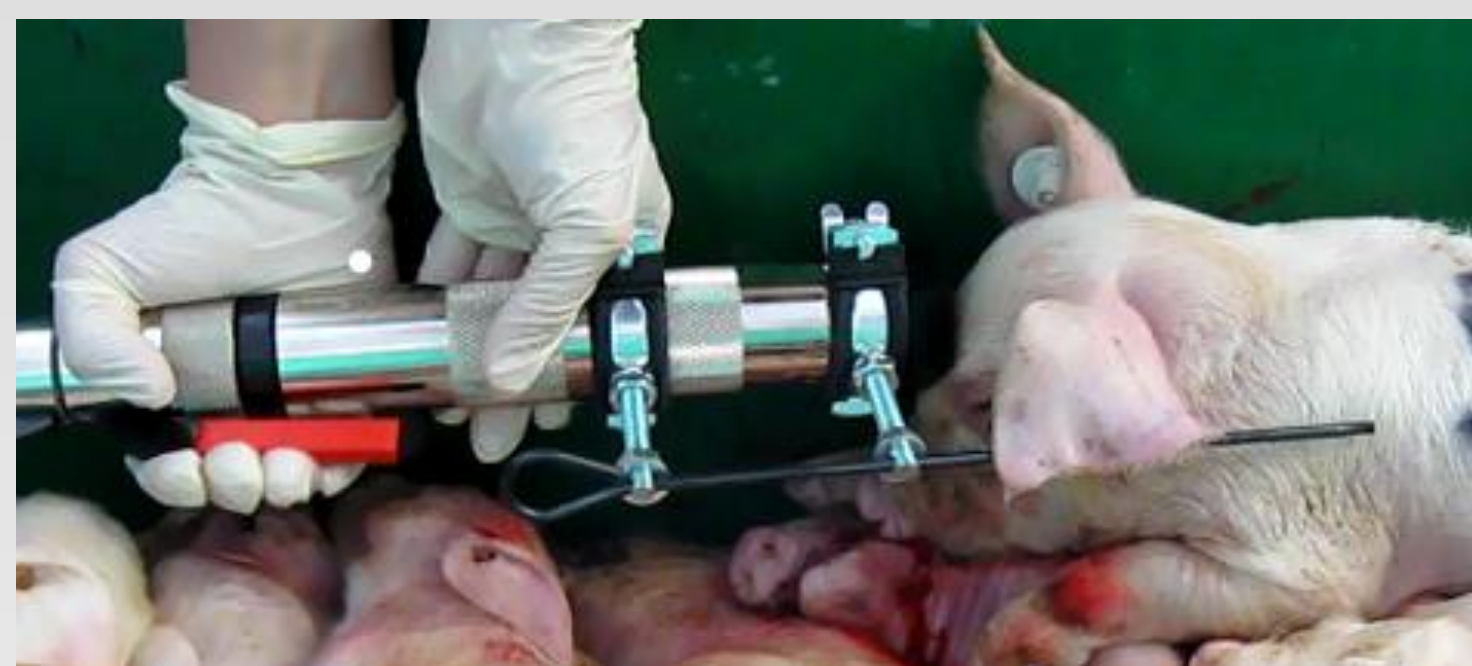


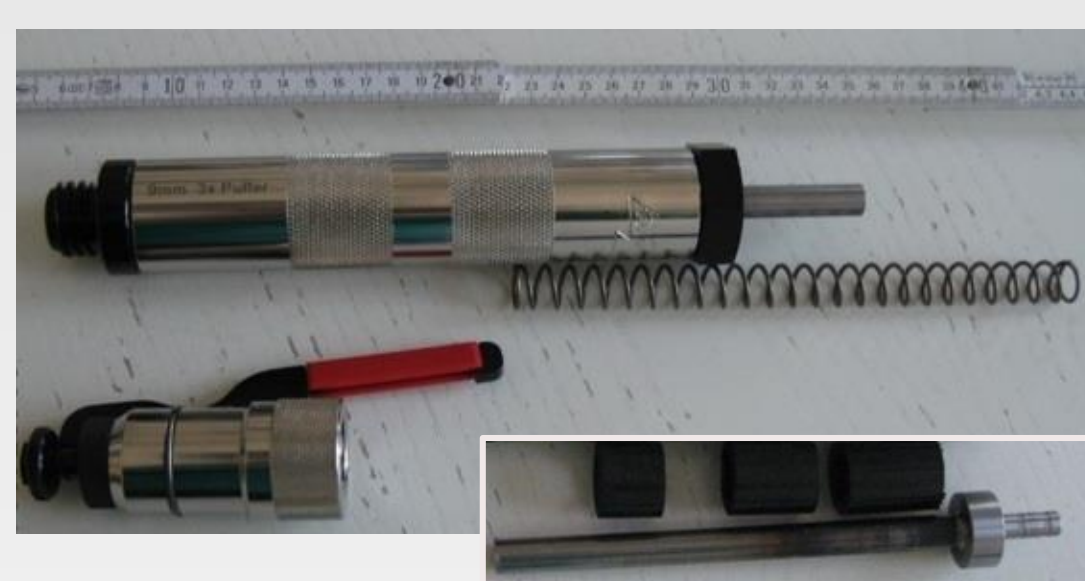
Fig 1: restraining piglets up to 2.5 kg

Fig 2: test shot on dead piglet

Fig 3: pathological examination



Fig 4: modified captive bolt for small piglets <5kg (extension length 5.3 cm with green cartridge instead of 7.3 cm)



With the help of the manufacturer (turbocut Jopp GmbH, Bad Neustadt, Germany) the captive bolt apparatus was modified for smaller piglets by shortening the bolt extension length. Optimum shooting position and bolt length according to weight class were determined by shooting dead piglets and pathological examination with regard to brain stem damage.



Fig 5: Restraining of piglets (2.5-30 kg), shooting position for newborn piglets is in the middle of the forehead, for elder pigs we shoot 2 cm above the connection line of the eyes, aiming at the tail

Materials and methods

So far data for 48 piglets have been analysed (table 1). Piglets selected by the staff of a commercial farm (~ 5000 sows) were first clinically examined and then shot without subsequent bleeding. Then vital functions were tested (brain stem and pain reflexes, respiration, movements) and video taped. If signs were still present after 10 minutes, piglets were killed by pithing. Heart activity and heartrate were recorded by stethoscope and ECG (Pulsovet 3000DS, Pulsonic, Zurich, Switzerland).

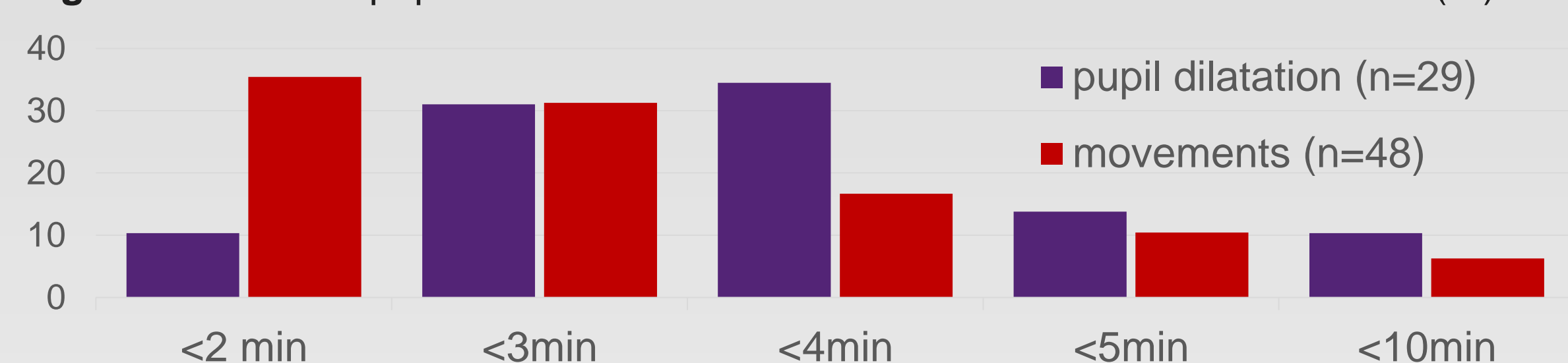
Table 1: Number of pigs shot and datal analysed by weight classes

	<1.3 kg	1.3-2,0 kg	2-5 kg	<10 kg	<20 kg	<30 kg	total
shot	21	10	27	30	5	3	96
analysed	21	8	7	7	2	3	48

Results

All piglets except one showed neither return of breathing nor brainstem reflexes. This one was reshot because of respiration activity restarted as it had been shot in deviated position. Nose prick was negative in all piglets. Time to final pupil dilatation and cessation of movements is shown in figure 6. Heart activity in some pigs still continued even longer (up to 10 minutes in 6% / 50% (stethoscope/ ECG)).

Fig 6: Time to final pupil dilatation / final cessation of movements – distribution (%)



Conclusions

- Killing of piglets is a very difficult subject and people involved must have the necessary knowledge and skills regarding the killing operation as well as the preceding decisions.
- From the ethical point of view it has to be questioned whether modern breeding lines and keeping systems provide sufficient resources to prevent piglets to be killed predominantly for economic reasons.
- Our preliminary results indicate that captive bolt may be a suitable one-stage-killing method for piglets up to 30 kg, if the shooting position is carefully met and if piglets are monitored until movements have finally stopped.

Acknowledgments: The thesis project is funded by the ministry of agriculture of the lands Mecklenburg-Vorpommern and Schleswig-Holstein

¹ Training and consultancy institute for animal welfare at transport and slaughter, bsi Schwarzenbek, Schwarzenbek, Germany, info@bsi-schwarzenbek.de

² Institute of Food Hygiene, Leipzig University, Leipzig, Germany