

WELFARE MONITORING AT SLAUGHTER PLANTS IN STYRIA (AUSTRIA)

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Animal welfare in slaughterhouses is a very sensible subject. It depends either on technical arrangements or handling practices. Requirements for the unloading area, lairage and lining up are described by WARRIS (1995) and GRANDIN (1998). Good stunning depends on low preliminary factors of strain, good restraining, precise electrode or captive bolt placement, suitable current parameters, optimal functional state of the stunning facilities, quick and effective bleeding and skilled personnel. The welfare of poultry awaiting and during slaughter depends on informed and experienced handling and the use of proper facilities for humane stunning and slaughter. Detailed specifications concerning the application of the various stunning methods are still under discussion (SCHÜTT-ABRAHAM, 1998, NICOL and SAVAILLE-WEEKS, 1993).

Objectives:

The aim of this study was either to get a general view of the welfare standard in all of the plants and to assess the enforcement of the European community welfare regulations at slaughter (Council Directive 93/ 119/ EC) but also to give consultations to each company, how to improve constructional arrangements as well as devices and animal handling.

Methods:

26 Styrian slaughter plants were monitored regarding welfare aspects between august and november 1998. All the plants had permission for the European community market (Council Directive 64/433 EEC and 92/116 EEC). 15 plants were 'smaller plants' with maximum line speed of 100 pigs, 10 cattle/ calves and/ or 15 sheep per hour (in one plant horses were slaughtered as well). 7 plants were 'larger plants' with line speeds from 150 to 230 pigs per hour or 15 to 20 cattle per hour. 4 plants slaughtered chicken with line speeds from 2.000 to 8.000 animals per hour. To perform an objective survey the Styrian veterinary authorities chose the training- and consultancy institute for careful handling of breeding- and slaughter animals, an independent german institute experienced with welfare at slaughter. Each plant was visited by two persons for 4 to 6 hours (pigs) and for 2 to 4 hours (cattle or poultry) respectively. In the unloading area transport vehicles (especially injury risks and ventilation facilities) and loading density were regarded and measured as well as ramp slope, slippery floors, design of driveways, sidewalls, gates, lightning and the manner of handling, taking also into account how the personnel was dealing with injured animals. In the lairage examinations included space per animal and group composition (separation of strange or hostile animals), noise-level, lightning, temperature and ventilation, risk of injury (walls and floors), possibility to drink, spraying facilities for pigs, prevention of mounting with cattle and handling practice of the personnel. Concerning the driving and lining up towards the stunning area, design of races was judged as well as unnecessary distractions or other impediments of the animals (sound, poor lightning, contrasts and shadows, personnel or movements ahead), injury risk and necessity for excessive driving or use of electric prodders or sticks. Restrainers or stunning boxes were estimated, whether they allowed easy entering, restraint without stress, quick and effective stunning and instantaneous delivery towards bleeding. The stunning facilities were examined concerning function and maintainance. The performance of the stunn was regarded. Current flow was measured with a Fluke scopemeter 60 Mhz (Fluke, Eindhoven, NL). Captive bolt stunners were taken into pieces. CO₂-concentrations (external infrared measuring device, Butina APS, Denmark) and exposure-time were measured. The stunn-stick-intervals were recorded and stunning effectiveness was evaluated 40 to 60 seconds after stunning by reflex testing (eye-reflexes and nose-pinch) and/ or return of regular breathing. The surface of the carcass was examined for lesions resulting from poor handling. With poultry slaughter handling of the crates, handling during taking out of the crates and shackling, performance of the water bath stunning, current flow, stunn-stick-intervall and stunning effectiveness were investigated. In each plant the results were discussed with the management and a detailed report including also necessary measures for improvements were given.

Results:

Table 1: Lacks of animal welfare in the unloading area	Frequency in the 15 'smaller' plants	Frequency in the 7 'larger' plants
Transport vehicles with risk of injury	1	3
Transport vehicles with deficient ventilation	1	2
Loading-density too high (less than 0,45 m ² for pigs of 110-120 kg lifeweight)	1	3
Mixing of hostile animals	2	-
Cattle waiting for unloading for more than 2 hours	2	-
Deficient side walls, risk of falling down the ramps	2	3
Slippery floor	3	6
Steep ramp (> 20°)	2	1
Poor handling (tail-/ear-/fleece-tearing, driving groups too large, painful tail-turning (cattle))	5	3
No solid side-walls of alleys leading into the stable, no clear driving direction	3	2
Poor or irregular lightning, shiny reflections	4	1

Table 2: Lacks of animal welfare in the lairage	Frequency in the 15 'smaller' plants	Frequency in the 7 'larger' plants
Insufficient space (<0,6m ² /pig (110-120kg), <2m ² /cattle (500-700kg), <0,4m ² /sheep (40kg)	7	2
Mixing of hostile animals	5	5
Risk of injury	6	4
No (not enough) drinking facilities	9 (4)	4 (2)
No spraying facilities for pigs (Excessive spraying: too long, too much water)	3 (3)	- (4)
Deficient ventilation (pig)	4	1
Poor lightning	3	3
Too much noise	4	4

Table 3: Lacks of animal welfare during driving towards stunning and lining up	Frequency in the 15 'smaller' plants	Frequency in the 7 'larger' plants
Poor handling (tail-/ear-/fleece-tearing, driving groups too large, painful tail-turning (cattle))	9	6
Pigs: deficient alley-desing (too many curves, gates opening in wrong direction, funnel chutes)	8 of 13	3
Pigs: impediments (slippery or irregular flooring/ distraction/ noise in front / poor lightning)	8 / 3/ 6/ 2 of 13	3/ 4/ 4/ 1
Pigs: no use of driving boards	6 of 13	2
Cattle: risk of injury	3 of 12	5 of 6
Cattle: impediments (slippery or irregular flooring/ distraction/ noise in front / poor lightning)	4/ 3/ 1 of 12	4/ 3/ 1/ 2 of 6

Table 4: Lacks of animal welfare concerning stunning	Frequency in the 15 'smaller' plants	Frequency in the 7 'larger' plants
Further slaughter procedures while the animal is still moving	2	4
Electrical stunning:		
Wrong design of stunning pen	5 of 11	-
Position of the tongs often not correct (pigs: base of the ears, sheep: temporal both)	9 of 14	7
Bad maintainance of stunning-tongs	11 of 14	5
Sticking too late (pigs: > 20s after beginning of the stunn, hanging (10s recumbent bleeding)	8 of 13	3
No restunning of insufficiently stunned pigs	3 of 13	1
Captive bolt stunning:		
Wrong design of stunning box	3	-
Position of the captive bolt often not correct	2	1 of 6
Bad maintainance of captive bolt	9 of 15	2 of 6
Sticking or destruction of the spine too late (> 60s after stunn) cattle / sheep	5 of 12 / 1	4 of 6

Reactions of animals to reflex testing were 33 % at the most for electric stunning and 28% for captive bolt-stunning.

In the 4 plants with CO₂-stunning of pigs the main defaults were (number of plants in brackets): no recording of the CO₂-concentration (3), wrong measurement of the CO₂-concentration (3), exposure-time less than 70s in 70% CO₂ (1), obstacles at the entrance of the chamber (2), risk of injury (1), sticking later than 20 s after leaving the chamber (2 plants) and no restunning of insufficiently stunned pigs.

Concerning poultry slaughtering the lacks in animal welfare were (number of plants in brackets): waiting period > 3h (1), rough handling of the crates (2), no suitable currents for stunning (e.g. < 110 mA per hen, high frequency) (3), insufficient stunning effectiveness (2), many animals outside the crates (3), shackling often at only one leg (1), pre-stunning electroshocks due to overflowing water (2), smaller animals with incomplete immersion of the head (3), no improvement of the leg to shackle contact by wetting (3), sticking more than 20 s after leaving the water bath. The percentage of poultry showing reactions to reflex-testing was, 0,8%, 3,0%, 5,3% and 7,2% respectively.

Conclusions:

The results of a monitoring in all slaughter plants in the province of styria shows, that animal welfare in the slaughterhouse not yet has the necessary attention. The requirements of the Council Directive 93/ 119/ EC are not fulfilled satisfactorily. The reasons therefore are multifactoral: The construction and layout of slaughterhouses is not well done in relation to animal welfare. Specific regulations for good handling practices and objective and reliable methods, that can easily be used under commercial conditions by official institutions still lack in Austria. The knowledge and the skills of the personnel should be increased and harmonised by regular training. A better handling should be an interest of all those, who are concerned with the slaughter of livestock and poultry.

Pertinent literature:

COUNCIL DIRECTIVE 92/ 116/EEC of 17 December 1992 amending and updating Directive 71/118/EEC on health problems affecting trade in fresh meat. COUNCIL DIRECTIVE 64/433/EEC of 26 June 1964 on health problems affecting intra community trade in fresh meat. CONCIL DIRECTIVE 93/119/EC of 22 December 1993 on the protection of animals at the time of slaughter and killing. GRANDIN, T. (1998): Objective scoring of animal handling and stunning practices at slaughter plants. JAVMA 212, 36-39. NICOL, C.; SAVAILLE-WEEKS, C. (1993): Poultry Handling and Transport. In: GRANDIN, T. [Publ.]: Livetsock Handling and Transport. Wallingford, Oxon, UK, CAB International, 229-311. SCHÜTT-ABRAHAM, I. (1998): Electrical stunning of poultry. EC Seminar "Animal Welfare", Aug. 25-Sept. 3, 1998 Dublin. WARRIS, P. (1995): Guidelines for the handling of pigs antemeortem- Interim conclusions from EC-AIR3-Project CT92-0262, Proc. EU Seminar "New information on animal welfare and meat quality of pigs as related to handling, transport and lairage conditions. June 29-30, 1995 Mariensee.