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Death & prolonged survival in non-stunned poultry: A case study

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4
5 Abstract

6 EC Regulation 1099/2009, On the Protection of Animals at Killing Regulations (PATOK), requires the
7 severance of “the two carotid arteries” to ensure each animal dies rapidly (Annex 3,3.2.). This
8 requirement applies to stunned, non-stunned, manual and automated methods of killing.

9
10 I observed the severance of carotid arteries in non-stunned, religious slaughter in a study of 250 non-
11 stunned chickens. The birds were checked for aversive /anger type behaviors at 10 and 30 seconds and
12 for the absence of corneal reflexes at 60 seconds post incision. Prolonged survivors were observed at
13 90,120,150 and 180 seconds post incision Spontaneous behaviors in non-stunned birds surviving over 90
14 seconds were recorded on a digital videocamera. At post mortem, neck wounds were inspected for
15 severance of blood vessels and the findings were photographed.

16
17 The studies were carried out by observing single birds, on a line running at less than 400 birds per hour,
18 where meticulous technique was used. Of these non-stunned birds, 225 of 250 died at or before 60
19 seconds and 25 of 250 showed behaviors prolonged for more than 90 seconds post incision. These 25
20 birds had one or more intact carotid, as follows: 11 birds had two intact carotids, 2 birds had two
21 carotids and 1 jugular intact, 5 birds had one carotid and 1 jugular intact, and 7 birds showed a single
22 intact carotid. This failure to sever the brain’s blood supply may be linked to prolonged or resurgent,
23 aversive or anger type behaviors. Aversive / anger type behavior was found in all checked birds from 10
24 seconds to over 40 seconds after the incision of both carotids and both jugulars, before death at 60
25 seconds. The prolonged fear/anger type behavior over 90 seconds, indicated a risk of consciousness and
26 sensibility. I offered individual instruction on improved carotid severance techniques to religious
27 slaughterers to avoid these risks to bird welfare. This welfare at slaughter study was compared to cattle
28 and sheep work previously undertaken.

29
30
31 Introduction

32 As a veterinarian involved in neural scientific research interspersed with periods of supervision of
33 welfare at slaughter over four decades, one develops an awareness of risks of consciousness in cattle,
34 sheep, and birds while dying (Cranley 2011, 2012, 2014). Non-stunned calf slaughter captured my
35 interest when I observed the disquieting survival for 300 seconds post cut in 3/100 animals. Anger in
36 calves was not discernible, however fear or sensibility, particularly where prolonged survivors were
37 standing, could not be discounted. Prolongation of life may have been due to false aneurysm formation
38 (Gregory, 2011), which I had found from 40 seconds post carotid severance in calves. In sheep, corneal
39 reflex duration was the measure used to assess the survival of signs of life. Corneal reflexes took up to
40 70 seconds to disappear (Cranley, 2012, 2014), however, the sheep’s carotids remained patent, bleeding
41 freely. This clinical picture of corneal reflex activity was also reported in an experimental study of
42 assessment of unconsciousness during slaughter without stunning in lambs using EEG electrodes to
43 assess brain function and corneal reflexes. CNS reflexes were found to survive from 80-160 seconds
44 post sticking, with brain wave activity lasting up to 82 seconds.(Rodriguez et al., 2012).

45
46 The non-stunned broilers were conscious at incision, when both carotids must be severed. Initial
47 behavior appeared to be tonic immobility from 0 to 10 seconds as described by Jones (1987), followed
48 by aversive behavior from 10 seconds. By 30 seconds aggressive pecking behavior was found
49 (unpublished data). Death occurred by 60 seconds post incision. However, there were a significant

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