

Transport and logistics of broilers and poultry meat

April 2016, Henny Reimert



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The five freedoms:

1. Freedom from hunger or thirst
2. Freedom from discomfort
3. Freedom from pain, injury or disease
4. Freedom to express normal behaviour
5. Freedom from fear and distress

based on research by Prof Brambell (University of Bristol U.K)

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2

What are the results of poor animal welfare?

injuries
dead animals
lower quality of meat
may lead to extra work
higher production costs
bad image
less work satisfaction



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Steps in transport of broilers:

- Preparation of birds (timely removal of feed)
- Chicken crates (clean, wide opening, not broken)
- Catching (two by two method)
- Density in crates
- Transport time (less than ?? hours)
- Ventilation and temperature control
- Waiting time at slaughter plant (roof to protect from sun radiation, ventilation)
- Unloading and shackling

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Preparation of birds before transport:

timely removal of feed



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Fasting, Why?

Filled crop/stomach
Contamination
Weight prior to slaughter

How long fasting?

Duration of transport
Feeding schedule

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Catching, crates and density

Important for animal welfare and quality of birds:

- Dead On Arrival related to catching and transport
- 2 birds per hand
- No throwing, short walking



Loading: Preferably at night

Consequences of rough handling:

- Bone fractures
- Bruisings
- Dislocations
- Unnecessary animal suffering



Density in the crates:

- Weight of chickens
- Outdoor temperature



Transport and temperature:

- Smooth/calm driving
- Less than 8 hours
- Ventilation and temperature control in the lorry, temperature is higher in the middle of the lorry and lower on the outside.



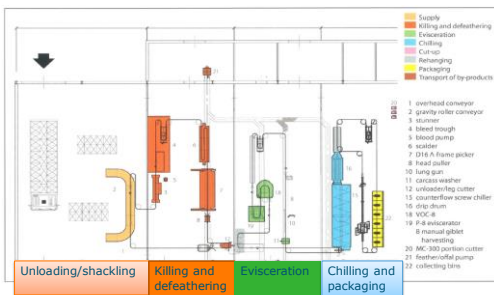
Waiting time at slaughter plant before unloading:

protection against sun radiation



Ventilation

Layout slaughter plant:



Unloading and shackling:

- Dead on arrival are well recognizable.
- Shackling prior to stunning is stressful and painful.
- Duration of shackling up to 45 seconds maximum.



Good work facility



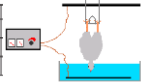
Transit to small?

Stunning and Bleeding:

Stunning:

- electrical stunning
- Gas stunning

Fregeerle #10	Eggen
< 200 Hz	100 mA
Van 200 tot 400 Hz	150 mA
Van 400 tot 1 500 Hz	200 mA



Bleeding:

- Sharp knife
- Cut carotid arteries and both jugular veins
- Bleeding time 2 minutes
- Blood should be collected



From unloading till plucking:

to achieve a easy and good plucking result



Tools for bleeding and evisceration:



Tools for manual evisceration

- A Killing knife For application of bleeding cut
- B Neck skin slicer For application of a longitudinal neck skin slit in order to facilitate removal of crops, gullet and windpipe
- C Butcher's tongs For knife sharpening
- D Opening scissors To cut open abdominal cavity after insertion of ball point in vent in order to avoid damage to the large intestine
- E Vent knife Pre-opening of product, cutting loose of vent and bursa fibricut
- F Eviscerating fork For easy removal of intestines from abdominal cavity
- G Bent gizzard trimmer Separation of intestines from gizzard and opening of gizzard
- H Neck shears Breaking and separation of necks
- I Lung picker Removal of the lungs
- J Leg scissors Cutting off legs, including tendons

Evisceration shackle:



Good position of the birds and less chance of contamination

Eviscerated chickens:

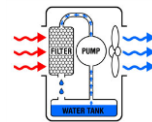
- rinse the in- and outside
- drain the chickens
- cool them to < 4 °C



Chilling:

Chilling the chickens from approximately 30 °C to 4 °C

- Air chilling
- Water chilling
- Air and water chilling
- Evaporative air chilling



Chilling time depends on:

- Weight of chicken
- Temperature of chiller
- Humidity during chilling
- Desired final temperature
- Air speed
- Belt speed

Packaging:



Manel Compact Grader

Steps in storage and transport of poultry products

- Cooling of carcasses after slaughter as quickly as possible to $< 4^{\circ}\text{C}$
- Storage in cool environment $< 4^{\circ}\text{C}$ for sales of fresh poultry
 - Cooled transport essential
- Blast freezing (or other freezing method) as quickly as possible to $< -18^{\circ}\text{C}$
- Storage in freezer $< -18^{\circ}\text{C}$
- Cooled transport

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