What is Low Atmospheric Pressure Stunning (LAPS)?

Low atmospheric pressure stunning (LAPS) is a new method of inducing unconsciousness (i.e. stunning) poultry prior to slaughter, where birds are placed in a sealed chamber, and the atmospheric pressure is reduced using controlled slow decompression with a vacuum pump[1]. This results in non-recoverable unconsciousness[2].

Research suggests that LAPS may offer a more humane, and potentially painless, method of stunning if decompression occurs at a rate at which the body cavities can adjust (i.e. no air is trapped within the body cavities)[3].

Potential benefits of LAPS for bird welfare include:

- Uniformity of process – all birds are exposed to the same pressure at the same time. This is a benefit over both gas stunning and electric stunning methods.
- Eliminates live bird handling and shackling which cause stress – similar to gas stunning.
- No aversive gases – there is debate over which are the most humane gases to use. Birds may experience pain during gas stunning if high concentrations of carbon dioxide are used.
- The birds are able to be placed into the LAPS in their transport containers and are in darkness, which reduces the stressfulness of the stunning procedure.

To date, not enough research has been conducted to determine whether LAPS does in fact offer a painless method of stunning for poultry, and it is not approved for use in the European Union[2], or by the American Veterinary Medical Association[4] for this reason.

Although it appears that birds perform similar behaviours during LAPS stunning as they do during gas stunning (an accepted method of stunning)[5], the LAPS takes a longer period of time to induce unconsciousness, and more research is required to:

- Determine whether decompression causes pain or distress in poultry.
- Establish and standardise an appropriate rate of decompression.
- Examine the humidity and temperature during the procedure. Since oxygen density is higher at lower temperatures, there must be different pressure reduction rates to account for this[5].
Low atmospheric pressure stunning may offer welfare benefits over other systems of stunning. However, more research is required in order to determine the full effect on birds’ welfare.

- Develop appropriate and reliable protocols for system failure.


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