P.1

Nov. 3, 15

United States Department of Agriculture

FSIS Docket Clerk, Department of Agriculture, Food Safety and Inspection Service, Room 2534, South Building,

1400 Independence Ave, SW., Washington, DC 20250-3700

Petition to use inert gases for gas stunning swine for slaughter.

Submitted by Lorna Moffat –Petitioner

[redacted]

Tel: [redacted]

Scope and Purpose.

This is petition request to the FSIS to allow for the use of inert gases such as nitrogen and, argon to be used as a humane method of slaughter for swine.

The purpose of this petition is as follows:

a) too make available a more humane gas for the slaughter for swine:

b) too allow the use of inert gases for slaughtering swine so that hog processors have the option and choice to use these gas options if they so choose.

Inert gases are recognized as the more humane method of slaughter for swine as is mentioned in the new European Rules for Humane Slaughter 2013

Article 1,

Official Journal of the European Union Page 2 (6) sentence 16 underlined,)

I quote directly from that submission here below:

'Recommendation to phase out the use of carbon dioxide for pigs and the use of water bath stunners for poultry are not included in this Regulation because the impact assessment revealed that such recommendations were not economically

viable at present in the EU. However it is important to continue this discussion in the future. ' End of quote.

We must note that economy must not super cede humane methods of slaughter or change for the better will never come about. However this petition is only requesting that hog processors can have a choice in what gases they wish to use.

Nitrogen/argon gases are an allowed use under the EU rules however and should also be allowed in the USDA Rules since it is a more humane method of slaughter and has been proven as such with pig preference tests done by Dr. Mohan Raj, as is exemplified and demonstrated in the documentary "How to Kill a Human Being Part Five as can be viewed on www.You Tube.com

Please view this documentary as part of my scientific evidence to prove that inert gases are a more humane method of euthanasia and that when a pig has the choice between entering a C02 chamber for retrieving apples or a nitrogen /argon filled chamber it readily goes into the inert gas chamber and totally avoids the C02 chamber.

REGULATIONS COUNCIL REGULATION (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing.

4 . Inert gases

Direct or progressive exposure of conscious animals to a inert gas mixture such as Argon or Nitrogen leading to anoxia. The method may be used in pits, bags, tunnels, containers or in buildings previously sealed. Simple stunning in case of the slaughter of pigs. Simple stunning for poultry if the duration of exposure to anoxia is of less than 3 minutes. Pigs and poultry. Slaughter, depopulation and other situations. Oxygen concentration. Duration of exposure. Quality of the gas. Maximum stun-to-stick/kill interval(s) in case of simple stunning. Temperature of the gas. Point 8.

Nitrogen/argon gases are an allowed use under the EU rules and the AVMA rules.

AVMA Guidelines for the Euthanasia of Animals: 2013 Edition M1.5 NITROGEN, ARGON Hypoxia produced by N2 and Ar appears to reduce, but not eliminate, aversive responses in pigs.

(I would like to interject here that all research tests done in the AVMA referral of this study include C02 mixtures which cause a suffocating response in the brain and therefore could cause aversion. Only Dr. Mohan's study kept inert gases free of C02).

Pigs chose to place their head in a hypoxic (< 2% O2, 90%Ar) chamber containing a food reward, remained with their head in the chamber until they became ataxic, and freely returned to the chamber once they regained posture.206 In contrast, exposure to 90% Ar, 70% N2/30%

CO2, and 85% N2/15% CO2 all resulted in signs of aversion, defined by the authors as escape attempts and gasping; however, the proportion of pigs showing these behaviors was lowest with Ar.207 Early removal from the stunning atmosphere results in rapid regaining of consciousness, such that exposure times > 7 minutes are needed to ensure killing with these gases.208 Nitrogen and Ar are odorless, colorless and tasteless gases that are inert, nonflammable, and nonexplosive. Nitrogen normally comprises 78% of atmospheric air, whereas AR comprises less than 1%. These gases function in the current context by displacing air (and the O2 it contains), causing anoxia led to EEG suppression in 41 seconds, loss of SEP in 44seconds, and isoelectric EEG in 101 seconds, leading the authors to conclude exposure times > 3 minutes. Hypoxia produced by N2 and Ar appears to reduce, but not eliminate, aversive responses in pigs. Pigs chose to place their head in a hypoxic (< 2% O2 , 90% Ar) chamber containing a food reward, remained with their head in the chamber until they became ataxic, and freely returned to the chamber once they regained posture.206 In contrast, exposure to 90% Ar, 70% N2 /30% CO2 , and 85% N2 /15% CO2 all resulted in signs of aversion, defined by the authors as escape attempts and gasping; however, the proportion of pigs showing these behaviors was lowest with Ar.207 Early removal from the stunning atmosphere results in rapid regaining of consciousness, such that exposure times > 7 minutes are needed to ensure killing with these gases.

Advantages—(1)

gas mixtures do not appear to be directly aversive to

pigs and appear to reduce, but not eliminate, the behavioral

responses to hypoxia. (2) Nitrogen and Ar are

nonflammable, nonexplosive, and readily available as

compressed gases. (3) Hazards to personnel are minimal

when used with properly designed equipment.

Argon and N2

-CO2

gas mixtures are heavier than air

207 24 AVMA Guidelines for the Euthanasia of Animals: 2013 Edition

(ie, 6% or greater) in the chamber

before death will allow immediate recovery.206,208,210

(4) Exposure times > 7 minutes are needed to ensure

killing of pigs.

I also present an explanation from Dr. Mojan Raj, (see article 3 below), highly respected research food and animal welfare scientist at University of Bristol as to why inert gases are much more humane than C02.

Briefly, C02 cannot be humane because it causes a suffocating response to the brain so the body will be triggered into a breathing response. Inert gases do not affect the brain in the same way as is explained in the BBC documentary in very scientific terms. It is also explained below in an e-mail sent to me from Dr. Mohan himself.

Article3.

P.5

From: [redacted]

Sent: Wed, September 22, 2010 3:15:33 AM

Subject: RE: nitrogen gas stunning

To: [redacted]

Dear Lorna,

Biologists have clearly established that all vertebrates, including animals used for human food, have peripheral and central chemoreceptors to detect elevated carbon dioxide levels and, given a free choice, they avoid an atmosphere containing high concentrations of carbon dioxide. The European Commission has not banned carbon dioxide stunning for economic reasons. Research has shown that poultry and pigs do not avoid anoxic atmospheres created using inert gases and they voluntarily enter the anoxic chamber> and get killed. Owing to this unique welfare advantage, over 95% of> turkeys and 25% broilers slaughtered in the UK for human consumption are> stunned using inert gas mixtures.

In the UK, all animals exposed to gas mixtures must be irreversibly stunned and they should not regain consciousness during bleeding. The incidence of recovery

of consciousness, for example spontaneous breathing, should be recorded and action taken immediately. This is an objective and progressive measure intended to promoting animal welfare at slaughter and I hope you agree.

With kind regards

Mohan

Dr. Mohan Raj was instrumental for the allowance of nitrogen and argon gases in the EU Rules for humane slaughter as a result of his fine research and I hope the FSIS will include those gases for the US Rules and regulation.

(Refer to Article 1)

In this Regulation, you will see nitrogen /argon being approved for stunning of pigs and poultry under Annex I,

Chapter 1, Table 3 - Gas methods. I hope you find this useful.

I provide further proof of the humane aspects of using argon/nitrogen gases as a humane method of slaughter with the links below.

1). This YouTube presentation shows the pig preference test used by Dr. Raj to prove the point that when a pig was given the choice to enter a bin with C02 or nitrogen gas the pig chose the nitrogen gas bin and avoided the C02 bin.

www. You TubePart 4 of 5 - How to Kill a Human Being - BBC Horizon

Former Conservative MP, Michael Portillo pushes his body to the brink of death in an investigation into the science of execution.

2).YouTube link shows pigs being slaughtered with C02.Search YouTube/ Pigs slaughtered with C02 gas.

3) YouTube link shows a pig being slaughtered with inert gas such as helium. Pig Euthanasia with Inert Gas Helium in Germany

Assisted Suicide / Euthanasia / Right to Die

Assisted Suicide / Euthanasia / Right to Die

Subscribe892

16:57

Pig slaughter- Comparison of different stunning methods used

by EyesonAnimalsinspectHD

I also submit (Article 5) an e-mail sent from Professor Zimmerman, University of Maryland on his views on using C02.

Article5.

Nick Zimmermann Sep 24, 2010

To

mof >> Lorna Moffat--

Nickolas G. Zimmermann, Ph.D.

Associate Professor & Poultry Specialist

Department of Animal and Avian Sciences

3151 Animal Sciences Building

University of Maryland College Park

College Park, MD 20742-2311

[redacted] Fax

[redacted]

http://www.ansc.umd.edu/faculty/Zimmermann/

KillingMethodsForPoultry[1].pdf

Sent By: nick Zimmermann

I thought you would find this useful on ScienceDirect. I am certain that it is a matter of time before CO2 will not be allowed for killing animals.

1. Effect of flow rate on aversion to gradual-fill carbon dioxide exposure in rats Original Research Article

Article 5 continued,

Applied Animal Behavior Science, Volume 109, Issue 1, January 2008, Pages 77-84

Lee Niel, Sarah A. Stewart, Daniel M. Weary Source

Applied Animal Behavior Science > 2008 > 109 > 1 > 77-84

Abstract

Laboratory rats are commonly killed by a gradually increasing concentration of carbon dioxide (CO 2), but an optimal flow rate for minimizing distress during this procedure has not yet been identified. While fast flow rates minimize time to unconsciousness, slow flow rates may allow an animal to lose consciousness before CO 2 concentrations become sufficient to cause pain and dyspnoea. We used an approach-avoidance test, where access to a food reward was contingent on entering a chamber that was gradually filling with CO 2 , in order to determine whether rats' aversion to gradual-fill CO 2 exposure varies with flow rate. During testing, the exposure chamber was filled with either air or CO 2 , and we examined CO 2 flow rates ranging from 3% to 27% of the chamber volume/min. The rats left the chamber before loss of consciousness at all flow rates, and at higher flow rates they left the chamber more quickly. The maximum CO 2 concentrations tolerated were at intermediate flow rates, but even at the optimal flow rate of 14%/min rats left the chamber once the CO 2 concentration reached just 15.9%, and no rats remained in the chamber until they lost consciousness. Rats tolerated even lower concentrations when flow rates were higher and lower, but this response function was not steep. For example, at the highest flow rate of 27%/min rats left the chamber at a CO 2 concentration of 13%. In conclusion rats are sensitive to CO 2 flow rate and are most tolerant of CO 2 when introduced at a flow rate of around 15%. Despite this modest effect of flow rate, gradual-fill CO 2 exposure is still aversive to rats over all flow rates tested and research into alternative methods of euthanasia is now urgently required.

Further proof of the inhumane aspects of C02 .

Article 6 submitted here is another example of the preference using inert gases versus C02.

U.S. National Library of Medicine

National Institutes of Health

Vet J. 1997 May;153(3):329-39.

Article 6

Welfare implications of gas stunning pigs: 3. the time to loss of somatosensory evoked potentials and spontaneous electrocorticogram of pigs during exposure to gases.

Raj AB, Johnson SP, Wotton SB, McInstry JL.

Department of Clinical Veterinary Science, University of Bristol, Langford, UK.

Abstract

Changes in the spontaneous electrocorticogram (ECoG) and somatosensory evoked potentials (SEPs) were recorded in 12 pigs in each of three gas killing treatments. The treatments were 90% argon in air with 2% residual oxygen; a mixture of 30% carbon dioxide and 60% argon in air with 2% residual oxygen; or 80-90% carbon dioxide in air. The mean times to loss of SEPs were 15, 17 and 21 s, respectively. The mean time to loss of SEPs recorded during killing with a high concentration of carbon dioxide was significantly longer than those recorded for the other two gas killing treatments ($P < 0.05$). Slow waves (high amplitude and low frequency) appeared on average 15 s after exposure to argon. In some pigs killed with the carbon dioxide-argon mixture, a decrease in the frequency of electrical activity was apparent, although slow waves did not appear during killing with a higher concentration of carbon dioxide. A suppressed ECoG (reduction in amplitude of signals) was recorded at 22 and 20 s respectively, during exposure to the carbon dioxide-argon mixture and 80-90% carbon dioxide in air, but the onset of ECoG suppression could not be determined exactly during exposure to 90% argon in air. The time to onset of an isoelectric ECoG was 54, 39d and 32 s after exposure to argon, carbon dioxide-argon mixture and a high concentration of carbon dioxide, respectively. The mean time to the onset of an isoelectric ECoG during exposure to argon was significantly longer than that recorded for the other

two gas killing treatments ($P < 0.05$). Based on the time to loss of SEPs, it is concluded that during killing with a high concentration of carbon dioxide, pigs would have to endure a moderate to severe respiratory distress induced with this gas for a considerable period of time prior to the loss of brain responsiveness. Argon-induced anoxia appears to be the first choice from a welfare point of view for killing pigs, based on its lack of aversive properties and its effectiveness in rapidly abolishing brain responsiveness. A mixture of 30% carbon dioxide and 60% argon in air is considered to be more humane than using a high concentration of carbon dioxide, as the time to loss of brain responsiveness is similar to that using 90% argon in air.

Article 7. Proof of aversion of C02 as a humane slaughter gas.

PMID: 9232122 [PubMed - indexed for MEDLINE] Aversion to carbon dioxide stunning in pigs: effect of carbon dioxide concentration and halothane genotype

Authors: Velarde, A; Cruz, J; Gispert, M; Carrión, D; Torre, Ruiz de la JL; Diestre, A; Manteca, X

Source: Animal Welfare, Volume 16, Number 4, November 2007, pp. 513-522(10)

Publisher: Universities Federation for Animal Welfare

Abstract:

Aversion to the dip-lift stunning system and to the inhalation of 70 and 90% carbon dioxide was assessed in 18 halothane-free (NN) and 14 heterozygous halothane (Nn) slaughter weight pigs using aversion learning techniques and behavioral studies in an experimental slaughterhouse. Pigs were subjected to the treatments individually. When the dip lift system contained atmospheric air, the proportion of pigs that entered the crate voluntarily increased on subsequent days, indicating that pigs habituate to the stunning system. Based on the number of attempted retreats, for the first descent into the well with atmospheric air, Nn pigs were more reactive than NN pigs. On repeating the descent, Nn pigs showed greater habituation to the procedure. When the pit contained (either 70 or 90%)

carbon dioxide, the time taken to enter the crate and the incidence of pigs that attempted to retreat increased on subsequent days, indicating aversion to the carbon dioxide concentrations. The aversion was higher when the stunning system contained 90 as opposed to 70% carbon dioxide due possibly to increased irritation of the nasal mucosal membranes and more severe hyperventilation. Conversely, a decrease in the concentration of carbon dioxide increased the time to loss of posture and, therefore, lengthened the perception of the aversive stimulus till the animal lost consciousness. These results suggest that stunning with carbon dioxide is not free from pain or distress. The degree of aversion depends on the carbon dioxide concentration. Therefore, if higher concentrations of carbon dioxide are recommended for rapid induction of anesthesia, it needs to be assumed that this may be more aversive to pigs. 4

PDF]New developments to improve animal welfare during ...

ai.gov.tw/.../New%20developments%20to%20improve%20animal%20w...

Large-scale euthanasia or depopulation of animals may apply to; ... development of EU welfare policy. EU's Treaty of Lisbon, ... NEW EU REGULATION 1099/2009 (law) TO. PROTECT .... Exposure of poultry to inert gases such as nitrogen.Gas mixtures are mainly used for stunning or stun/killing pigs and poultry.

A potential animal welfare benefit of using gas mixtures is that they could be administered to small groups of animals contained in cages or crates without the need for restraint. Under this situation, killing with gas mixtures is better than stunning because the interval between the end of exposure togas mixture and bleeding would be considerably long for the last animal in a group to be shackled, hoisted and sever blood vessels in the neck or chest. Carbon dioxide in air, carbon dioxide plus oxygen, anoxia induced with argon and / or nitrogen and mixtures of carbon dioxide and argon or nitrogen are being used. However, since exposure to gas mixtures do not lead to immediate loss of consciousness and sensibility, it is thought that the induction of unconsciousness with gas mixtures should not be distressing to animals.

Research evidence suggests that pigs and poultry, given a free choice, avoid an atmosphere containing high concentrations of carbon dioxide in air (e. g. 40% or more) that would be required for stunning. In addition, exposure of pigs and poultry to a high concentration of carbon dioxide induces gasping (oral breathing) and head shaking, and some pigs show escape attempts to avoid inhaling this gas. By contrast, pigs and poultry do not avoid an anoxic atmosphere (2% or less oxygen) created using inert gases (argon).

X.d) Problem dimension

The Directive itself does not specify nor give any guidance as to the most appropriate methods

of killing per type of species. According to the latest research, CO2 is aversive to all

vertebrates, some species find even low (10-20% by volume in air) concentrations aversive.

The Panel on Animal Health and Animal Welfare of the European Food Safety Agency has in

its opinion recommended to use CO2 only when animal is first rendered unconscious via

another method. Banning the use of CO2 as the sole agent would, however, have significant

economical impacts due to its wide use.

Article 7.

Nitrogen Foam as a more humane method of swine slaughter.

Humane Euthanizing Using Nitrogen Foam

03 January 2013

THE NETHERLANDS - The most humane method to euthanize animals that are in severe pain or suffer severely seems to be the use of nitrogen gas foam, according to N2GF.

By this method, the company says, the animals will be unconscious within a short time through an abundance of nitrogen. The animals die in a short time, without regaining consciousness. This novel method will be extensively tested at the Swine Research Centre of Wageningen University, the Netherlands.

Pigs or poultry (and other animals) that are in severe pain or that suffer severely have to be euthanized, if there is no practical and economical way to alleviate this pain or suffering. This is clearly defined in Council Regulation (EC) No 1099/2009, which comes into force as 1 January 2013. This EU-regulation states that the euthanasia of the animal has to be as quickly as possible, in order not to prolong the period of suffering. The animal should be spared of avoidable pain, distress or suffering by the euthanasia. Therefore stunning of the animal prior to killing is necessary, except when the stunning and killing is done at the same time. At all times it is necessary that the animal stays unconscious until death enters.

Nitrogen foam

With a new method, nitrogen gas foam, all the demands of the Council Regulation are fulfilled. The method of nitrogen foam has been developed for young piglets and poultry, a group of animals for which the acceptable methods prescribed in the Council Regulation are not suitable.

The method of nitrogen foam uses a barrel, filled up with a layer of high expansion foam (big bubbles) completely filled with pure nitrogen. The animal will be placed into the foam and covered with a layer of foam of at least 60

centimeters. The animal will breathe 98 per cent nitrogen. Blood oxygen diminishes very quickly and the animal will very soon become unconscious. Because of the extreme oxygen deficiency (anoxia) the animal dies within 1.5-2 minutes. The animal will not regain consciousness and won't notice that it dies. The animal will be unaware that it breathes in pure nitrogen. It will not be harmful or painful for the animal because the normal air an animal breathes consists already of 80 per cent nitrogen. Inhalation of nitrogen is therefore not stressful, whereas for example with high concentrations of carbon dioxide the animal will try not to breathe.

No physical load

The method of nitrogen foam is also not physically demanding on the farmer and his employees. The animal almost instantly loses consciousness after being dipped through the foam. Fixation of the animal to avoid them to hurt themselves during stunning is not needed, as necessary in most other methods.

Because of the thick nitrogen foam layer and the amount of 98 per cent nitrogen it is certain that the animal will die. The chance that the method fails and the animal regain consciousness and does not die, is almost zero.

Capture nitrogen

The advantage of the use of high expansion foam is that the nitrogen gas is captured in the bubbles. Nitrogen is lighter than the surrounding air and would normally mix quickly with ambient air. To be sure that the nitrogen doesn't escape during the procedure there will be always a layer of 60 centimetres of foam above the animal.

Safe

The thick layer of foam avoids that the nitrogen escapes. The method therefore is safe to use for the operator. After a longer period the foam will disappear and the nitrogen will mix with the surrounding air, without any risks.

Working with nitrogen gas foam is also hygienic. The animals will stay in the barrel were they are euthanized. No body fluids will be released.

Research

Extensive research with the method of nitrogen foam with piglets will start on the 1st of January 2013 at the Swine Research Centre of Wageningen University, the Netherlands. This research has to prove that the animals are unconscious in a short time and die because of the lack of oxygen. And the animals should not suffer from stress or pain from the method. An exploratory survey with poultry already showed that this is achievable.

Next to the effects on the animals the reliability of the equipment will be tested, and a standard operating procedure will be developed. Possible risks for het operators or the environment will be examined. In half a year the equipment will be tested, ready to use and will become available commercially.

Training

For the operators, training will be an integral part of this new method. During a theoretical online training, the operator will learn to recognize whether animals are suffering. He will also be able to avoid stress for the animals and will know how to perform the process of euthanasia. The second part of the training is a practical exercise under the supervision of a certified veterinarian, concluded with an assessment and certification.

More background information about nitrogen foam, euthanasia and the EU Council Regulation can be found at www.n2gf.com.

REGULATIONS COUNCIL REGULATION (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing (Text with EEA relevance)

4

Inert gases

Direct or progressive exposure of conscious animals to a inert gas mixture such as Argon or Nitrogen leading to anoxia. The method may be used in pits, bags, tunnels, containers or in buildings previously sealed. Simple stunning in case of the slaughter of pigs. Simple stunning for poultry if the duration of exposure to anoxia is of less than 3 minutes.

Pigs and poultry. Slaughter, depopulation and other situations.

Oxygen concentration. Duration of exposure. Quality of the gas. Maximum stun-to-stick/kill interval(s) in case of simple stunning. Temperature of the gas.

Point 8.

GOD, (and I presume we are still a nation under God), has given us a very humane method of putting animals to sleep during their terrifying ordeal of slaughter. It is the inert gases. Nitrogen comprises 78% of our atmospheric gases.

(a). Atmospheric Composition

Gas Name	Chemical Formula	Percent Volume

Nitrogen	N2	78.08%
Oxygen	O2	20.95%
*Water	H2O	0 to 4%
Argon Ar	0.93%	

7 more rows

7(a) Atmospheric Composition - Physical Geography

www.physicalgeography.net/fundamentals/7a.html

It is not a greenhouse gas. It is not flammable or explosive. And it can be mixed with an odor to protect workers from possible accidents such as Joel experienced as a wine cast worker.

I submit as Article 7 as an interesting testimony of a winery worker who succumbed to nitrogen gas while cleaning out a wine casket as further proof of its human aspects. Although it cannot be considered a science research project, its implications are just as valid.

Article 7.

Joel B's NDE

Experience description:

I was in the USAF at Castle AFB in Merced CA. I worked day shift there, then I worked swing shift at Gallo Wineries in Modesto CA. I worked as a GWW; that means a general wine worker. Part of my duties was to clean out the large tanks after the wine had been drained out. This procedure was to stop the fermentation process by purging the wine tank with nitrogen gas. This takes out the oxygen in the wine and stops the wine from fermenting. Then the tanks are supposed to be vented for many hours. The tank is checked for oxygen levels and if safe, an "OK TO ENTER" sign is posted at the entrance as it would be safe to enter.

This sign was posted at the tank, so the cleaning crew that I was part of set up to work on the tank. However, a mistake had been made and the tank next to this one was safe and this tank was not yet vented. In fact, it was full of nitrogen gas and was in a deadly situation for anyone to go inside. What this gas does to people who inhale it, is that it removes the air out of their system. It displaces the oxygen out of your lungs. I went into the tank and complained to the other two workers that the smell seemed really strong; I could tell it was an apple type of wine.

We had a fire hose set up to a high volume pump. This is what we used to spray down the internal walls of the wine tanks. I picked up the hose and went to the far side of the tank, about 30 to 40 feet away from the small opening that was also the only way out. I gave the thumbs up signal to start the water and chlorine mix, and the pressure hit the brass nozzle hard. This was normal and the force pushed me against the wall of the tank. I held on with all of my strength. I only remember seeing the water start to come out of the hose and start across the tank to the other side. I never saw it actually make it to the other side because at that point I had been inside the tank for about three minutes. This time period was long enough for the nitrogen gas to fully remove the air from my lungs.

They told me later that I just fell to the floor of the tank and let go of the hose. The hose started to fling about violently and hit my head and face hard enough to break my safety glasses in half and knocked my hardhat off of my head.

The spotter at the entrance signaled to the guy operating the pump to shut it off. About five minutes had gone by since I first went into the tank. The spotter then came into the tank to get me and he pulled me across to the opening and pushed me halfway out of the opening. He then passed out from the gas. He had only been in the tank about forty-five seconds. The other guy operating the pump saw me hanging out of the hatch and ran over to pull me out. Then he looked inside

and pulled the spotter out also. The spotter started to come to and was able to get on his feet within a few minutes.

I was still lying on the ground, not moving, not breathing, and turning blue. They began to offer CPR, pushing on my chest, applying mouth to mouth a few times and since I was not responding, they stopped and began to cry because they thought I had died.

I was having a completely different experience.

The water coming out of the hose took on a strobe like effect and it never reached the inside wall of the tank. I was then traveling through a tunnel at a very high speed. This tunnel seemed to be very long, like miles, yet it didn't seem to take any time to go through. There was a bright light. It was drawing me to it. I felt like I popped out of the tunnel and fell into this white light, yet I wasn't really falling, I was more like floating around inside of the light. It seemed like a container of light but without any end or boarders. I felt very much at peace and I liked being there in the light. I felt a presence toward the center and was drawn closer to someone there. I saw what I believe to be Jesus. He was in a white robe that was dripping in pure gold. It was so real to me then and even now I see all of the details of how he looked to me. I felt so safe, so warm and I did not want to ever leave His presence. I felt like I was home.

Then He spoke to me and told me about my life and what was yet to come. He told me that I had to go back. I argued with Him about staying but He said that it was not my time to be with Him yet and that I had many more things to do in my life. He rose up his hand and pointed back to the tunnel and I was immediately traveling back through the tunnel that I had arrived in, only a few moments before. The tunnel seemed to be the same one, same length and took the same time to travel through it back to life.

I woke up lying on my back and looking up into the eyes of the two guys that saved me, and they were indeed crying. They were shocked to see me getting up on my feet again. They took me over to medical and sat me in a chair to be seen by the nurse. Then they left and I never saw them again. The medical department

tried to say it was my fault and that I must have just passed out. They ask if I had been drinking, I replied, "No I had not". They called my wife and she drove out to pick me up. I was mad at all of the questions and their implying that it was all my fault. So I quit, and I never have been back.

The next few weeks I was in a daze, trying to figure out what had happened to me. I never shared this until many years later to my third wife; now of 19 years.

Was the kind of experience difficult to express in words? No

At the time of this experience, was there an associated life threatening event?
Yes Nitrogen gas poisoning

At what time during the experience were you at your highest level of consciousness and alertness? In the white light.

How did your highest level of consciousness and alertness during the experience compare to your normal every day consciousness and alertness? More consciousness and alertness than normal

If your highest level of consciousness and alertness during the experience was different from your normal every day consciousness and alertness, please explain: It must be at a high level of consciousness because I still remember it so well. I don't remember anything else in my life in the same detail or way or feeling.

Did your vision differ in any way from your normal, everyday vision (in any aspect, such as clarity, field of vision, colors, brightness, depth perception degree of solidness/transparency of objects, etc.)? Yes More clear, more detail, more bright.

Did your hearing differ in any way from your normal, everyday hearing (in any aspect, such as clarity, ability to recognize source of sound, pitch, loudness, etc.)?

Yes Hearing but not through ears.

Did you experience a separation of your consciousness from your body? Yes

What emotions did you feel during the experience? Love peace

Did you pass into or through a tunnel or enclosure? Yes see above story. The tunnel was long, like miles, felt like 20 to 30 feet in diameter.

Did you see a light? Yes see above. The light was at the end of the tunnel and filled up a large area.

Did you meet or see any other beings? No see above

Did you experience a review of past events in your life? No

Did you observe or hear anything regarding people or events during your experience that could be verified later? Yes I had a son. 16 years later.

Did you see or visit any beautiful or otherwise distinctive locations, levels or dimensions? No

Did you have any sense of altered space or time? Yes Lost track of time.

Did you have a sense of knowing special knowledge, universal order and/or purpose? Yes That we are all connected. And that there is one source, or creator.

Did you reach a boundary or limiting physical structure? No

Did you become aware of future events? Yes

Yes, do not wish to share.

Did you have any psychic, paranormal or other special gifts following the experience you did not have prior to the experience? Yes Aware of a Creator

Have you shared this experience with others? Yes 16 years. They are not sure what to think.

Did you have any knowledge of near death experience (NDE) prior to your experience? No

How did you view the reality of your experience shortly (days to weeks) after it happened: Experience was definitely real see above

Were there one or several parts of the experience especially meaningful or significant to you? see above

How do you currently view the reality of your experience: Experience was definitely real see above

Have your relationships changed specifically as a result of your experience? Yes more caring

Have your religious beliefs/practices changed specifically as a result of your experience? Yes more in belief of a single Creator.

Following the experience, have you had any other events in your life, medications or substances which reproduced any part of the experience? No

Is there anything else you would like to add concerning the experience?

Did the questions asked and information you provided so far accurately and comprehensively describe your experience? Yes The questions help to put it in order. End.

Below is an e-mail from Chris Holbein representative from PETA (Article 8) concerning the use of C02 versus inert gases for your review?

Article 8

E-mail from PETA's representative , Chris Holbein, on their support for inert gases versus C02 .

Dec 18, 2009

To

[redacted]

Hi Lorna,

Sorry for the delay in response. I have researched the issue more, and discussed it with our leadership who has researched the issue exhaustively for 10 years (I think it's fair to say that the movements towards CAK would not be nearly as far along as they are now if it hadn't been for PETA's relentless pushing of the industry for the past decade). Our stance is that we always push companies hard to adopt nitrogen and argon killing, but if they refuse for cost reasons we will accept C02 when done in a multi-stage process with a 30% CO2 concentration initial max. We are not concerned about the USDA disallowing nitrogen stunning; Jaindl Farms, for example, is selling nitrogen-killed turkey at major US grocery chains; that said, if the USDA did appear to be considering interfering with nitrogen we would certainly step in. (We work with the USDA on so many issues we have to pick and choose what battles we fight, and we don't want to pick a fight that is likely unnecessary.) We are in complete agreement that C02 is not ideal but that it's a major improvement over the current horrific electrical immobilization method and the dumping/live shackling/scalding that goes with it. Our folks have spoken over and over again with Dr. Raj, Grandin, Rollin, and all the other experts, and read every study, and this is the stance we are going to stay with. I appreciate your input and I assure you we will continue to push diligently for the inert gases to be used, and that we will continue to work with industry and regulators to push the adoption of these technologies.

We also of course still recognize that none of these technologies are perfect and that the best way to help these birds is to keep encouraging the booming popularity of a vegan diet.

Thanks again for all you do for animals, and a wonderful holiday season.

Best,

Chris

Below is an e-mail from Sara Sheilds, representative for HSUS on the issue of inert gases versus C02.

Article 9

Dear Lorna,

The Humane Society of the United States (HSUS) supports the switch to systems that use inert gases, including argon and nitrogen, for pre-slaughter stunning of chickens, turkeys and pigs. Nitrogen and argon are tasteless and odorless, and cause anoxia when inhaled. Our review of the scientific literature finds that these inert gases induce unconsciousness with a minimum of distress. Conversely, carbon dioxide is acidic and pungent, and controlled experimental studies have shown that it is an aversive to animals at high concentration.

Sincerely,

Sara Shields

Humane Society International

I submit a petition to the FSIS in 2009 to allow for inert gases to be used for poultry which was accepted. (see article 10).

There is movement amongst certain meat producing companies to try and thwart the use of nitrogen and inert gases because inert gases are more expensive.

This is supported by the statement in the EU rules (See submitted article 1, Official Journal of the European Union Page 2 (6) sentence 16 underlined,)

I quote directly from that submission here below:

'Recommendation to phase out the use of carbon dioxide for pigs and the use of water bath stunners for poultry are not included in this Regulation because the impact assessment revealed that such recommendations were not economically

viable at present in the EU. However it is important to continue this discussion in the future.'

Economy must never subvert humane methods of slaughter and yet it is and continues to do so in every sector of the slaughter industry. Therefore it is increasingly difficult to find scientists that will come forth and state that C02 triggers a breathing response in the brain, is an air hunger gas and is not humane.

The science itself is being subverted to suit the economy.

Therefore I submit a science paper on air hunger and its causation which is C02.

Article 11

Brain responses associated with consciousness of breathlessness (air hunger). Little is known about the physiological mechanisms sub serving the experience of air hunger and the affective control of breathing in humans. Acute hunger for air after inhalation of CO2 was studied in nine healthy volunteers with positron emission tomography. Subjective breathlessness was manipulated while end-tidal CO2- was held constant. Subjects experienced a significantly greater sense of air hunger breathing through a face mask than through a mouthpiece. The statistical contrast between the two conditions delineated a distributed network of primarily limbic/paralimbic brain regions, including multiple foci in dorsal anterior and middle cingulate gyrus, insula/claustrum, amygdala/periamygdala, lingual and middle temporal gyrus, hypothalamus, pulvinar, and midbrain. This pattern of activations was confirmed by a correlational analysis with breathlessness ratings. The commonality of regions of mesencephalon, diencephalon and limbic/paralimbic areas involved in primal emotions engendered by the basic vegetative systems including hunger for air, thirst, hunger, pain, micturition, and sleep, is discussed with particular reference to the cingulate gyrus. A theory that the phylogenetic origin of consciousness came from primal emotions engendered by immediate threat to the existence of the organism is discussed along with an alternative hypothesis by Edelman that primary awareness emerged with processes of ongoing perceptual categorization giving rise to a scene [Edelman, G. M. (1992) Bright Air, Brilliant Fire (Penguin, London)].

Mario Liotti*†, Stephen Brannan*, Gary Egan‡, Robert Shade§, Lisa Madden§, Bart Abplanalp¶, Rachel Robillard*, Jack Lancaster*, Frank E. Zamarripa*, Peter T. Fox*, and Derek Denton‡ Killing of animals for disease control purposes

J.W. Galvin (1), H. Blokhuis (2), M.C. Chimbombi (3), D. Jong (4) & S. Wotton (5)

Article 12.

(1) Department of Primary Industries, Cnr Midland Highway and Taylor Street, Bendigo, Victoria 3551,

Australia

(2) Animal Sciences Group, Edelhertweg, 15, P.O. Box 65, NL-8200 AB Lelystad, the Netherlands

(3) Department of Animal Health and Production, Ministry of Agriculture, Private Bag 0032,

Gaborone, Botswana

(4) National Taiwan University, #50, Lane 155, Sec. 3, Keelung Road, Taipei, Taiwan

(5) Department of Clinical Veterinary Science, University of Bristol, Langford House, Langford,

Bristol BS40 5DU, United Kingdom

A EU Regulation Changes View on Stunning at Slaughter ...

www.thepoultrysite.com/.../eu-regulation-changes-view-on-stunning-at-s...

Jul 3, 2013 - A basic requirement for humane slaughter of animals, including poultry, is that they should be stunned before slaughter by exsanguination, ...

This exert below is from this site.

'Ar can be easily administered in gas stunning, because it is heavier than air as is carbon dioxide, tasteless and odorless. Another option is a low concentration of carbon dioxide in Ar. Both these mixtures caused a rapid loss of brain function in chickens, turkeys and pigs. Aversion to nitrogen and carbon dioxide mixtures for stunning pigs

Aversion to nitrogen and carbon dioxide mixtures for stunning pigs

Authors: Llonch, P; Dalmau, A; Rodríguez, P; Manteca, X; Velarde, A

Source: Animal Welfare, Volume 21, Number 1, February 2012, pp. 33-39(7)

Publisher: Universities Federation for Animal Welfare

Abstract:

Inhalation of concentrations greater than 30% of carbon dioxide (CO_2) by volume in atmospheric air causes aversion in pigs. The objective of this study was to assess, using aversion learning techniques and behavioural studies, the aversion to three alternative gas mixtures of nitrogen (N_2) and CO_2: 70% N_2 and 30% CO_2 (70N30C), 80% N_2 and 20% CO_2 (80N20C) and 85% N_2 and 15% CO_2 (85N15C). The experiment consisted of two trials of three groups of ten pigs each. Pigs were placed individually at the starting point of the test facility and allowed to enter the crate of a dip-lift stunning system during one control session with atmospheric air and three treatment sessions with one of the gas treatments in each group. When the pit contained any of the three gas mixtures, the time taken to cross the raceway and enter the crate did not increase compared to the control session. However, when exposed to the gas mixtures, the majority (85.80%) of pigs performed attempted retreats in the crate, 22.22% exhibited escape attempts, and 7.91% vocalized, without differences between gas mixtures. The percentage of pigs gasping was higher when exposed to 70N30C compared to 80N20C and 85N15C. The results suggest that pigs show signs of aversion to the inhalation of 15 to 30% CO_2 in nitrogen atmosphere compared to atmospheric air but the aversion response did not increase in consecutive sessions.

It seems clear that the more nitrogen used the less aversion the pigs experienced.

100% nitrogen might well have an even a more humane effect as was testified by Mikeal Portillo in the documentary How to kill a Human being part 4

WorldPoultry - Gas foam: The humane euthanasia method

www.worldpoultry.net/.../Gas-foam-The-humane-euthanasia-method-12...

Jul 1, 2013 - An abundance of nitrogen, captured in foam bubbles, ensures a stress free ... On farm euthanising or slaughtering of poultry or pigs with the use of nitrogen foam may be the way to go in the future. ... The purpose of the research is to prove that the animals are unconscious in ... more articles from this author.

Gas foam: The humane euthanasia method

Jul 1, 2013 4677 1

On farm euthanizing or slaughtering of poultry or pigs with the use of nitrogen foam may be the way to go in the future. An abundance of nitrogen, captured in foam bubbles, ensures a stress free ... On farm euthanizing or slaughtering of poultry or pigs with the use of nitrogen foam may be the way to go in the future. ... The purpose of the research is to prove that the animals are unconscious in ... more articles from this author.

Gas foam: The humane euthanasia method

Euthanizing sick poultry flocks normally involves large tankers filled with CO2 gas. Using nitrogen foam instead is easier and has no negative effects on welfare.

By Fabian Brockotter

The total absence of oxygen is the main principle of the N2GF technology. However, that is not what makes this technology unique, existing stunning methods with carbon dioxide and carbon dioxide plus argon gas, do exactly the same. The big difference is in the actual 'medical cause' of death of the animal. With the use of carbon dioxide the animal perishes due to hypoxia, but with the

use of nitrogen, death is through anoxia. Unlike hypoxia, the animals do not react by head shaking or having convulsions prior to unconsciousness. In fact, the animals do not even notice they are dying.

The initial investment and operating costs are very low for the farm. The equipment necessary at farm level are; a pressure tank of nitrogen or a nitrogen generator, a pressure vessel for water and soap mix and a foam nozzle.

Method of use

A standard barrel, sufficient in size to take the animal in question, is filled with a layer of high expansion foam (big bubbles) filled completely with pure nitrogen. The animal is then immersed into the foam and covered with a layer of foam of at least 60 cm. The animal then breathes in 98% nitrogen, the blood oxygen diminishes very quickly and the animal loses consciousness.

Because of the extreme oxygen deficiency (anoxia) the animal dies within 1.5-2 minutes and at no time regains consciousness. Due to the fact that an animal generally inhales air that is 80% nitrogen they do not notice the extra 18%. And because they do not realize they are dying they do not fight the procedure, thus experience no stress or pain. Unlike with high concentrations of carbon dioxide, then the animal tries to breathe. The chance that the method fails and the animal regains consciousness and does not die, is virtually zero.

Defra - Department for Environment, Food and Rural Affairs.

Development of an on-farm anoxic gas foam delivery system; prototype development and testing - MH0151

Description

DEFRA and AHVLA have a requirement for in-situ emergency killing of poultry flocks in the event of a notifiable disease outbreak. Whole House Gassing (WHG) with carbon dioxide, where birds are killed in their production housing, is the currently preferred option, particularly when there is a risk to human health. However not all poultry buildings are suitable for WHG due to the fact they cannot be adequately sealed.

An innovative alternative system of whole house gassing has been developed which uses high expansion water based foam to deliver an anoxic gas (nitrogen) into poultry sheds. In previous projects (MH0143 and MH0144), a small scale system was constructed to allow laboratory studies to be conducted to assess the efficacy of anoxic high expansion gas filled foam as a humane method for whole house killing of poultry. The findings showed that gas delivery with high expansion nitrogen filled foam is a humane method for the emergency killing of broilers and hens, and a report on parallel work conducted by the WUR Animal Science Group in the Netherlands confirmed that it was also suitable for ducks and turkeys. In further work a larger system was developed to successfully apply gas filled foam to groups of broilers. This work determined the behavior of the foam in larger areas and resulted in an operational protocol.

The aim of this project is to design, assemble and field test a mobile, full scale, on farm system to deliver anoxic gas foam. The work will involve the design and assembly of a system capable of working at a commercial scale, based on detailed information on the required flow rates, distribution and operational protocols generated in previous work.

The system will be subject to a series of detailed engineering tests to determine its performance under commercially relevant conditions including deployment into different types of poultry housing systems. The trials will provide evidence to the poultry industry and AHVLA that the system will reliably deliver gas filled foam at full scale. Throughout the project, ad-hoc meetings with stakeholder will be held to involve key poultry industry partners and the project outcomes will be disseminated fully to the industry. Successful completion of this work will

therefore extend the capabilities of containing disease outbreaks as rapidly as possible.

The project will also help to determine the feasibility of gas foam as a method of humane killing of poultry for commercial or other veterinary reasons in their poultry houses, which may have welfare advantages over current techniques.

Objective

The aim of the project is to design, assemble and test a mobile, full scale, on farm system to deliver anoxic gas foam. The system then will be subject to a series of detailed engineering tests to determine its performance under commercially relevant conditions including different types of poultry housing systems.

Throughout the project, meetings will be held to involve key poultry industry partners and the project outcomes will be disseminated fully to the industry. Successful completion of this work will therefore extend the capabilities of containing disease outbreaks as rapidly as possible and provide a forum to discuss how to make system available for rapid deployment in the event of a disease outbreak. Linked to this, the project will also determine the feasibility of gas delivery by high expansion foam as a routine method of humane killing of birds in their housing, which will be permitted under the new European Council regulation 1099/2009 to be implemented in January 2013 and potentially earlier under an proposed amendment to the Welfare of Animals (slaughter or Killing) Regulations) 1995.

Objective 1 –

Assemble a prototype system and perform a series of trials to demonstrate its capability in the field.

Feedback from poultry industry representatives showed that there was considerable interest in the system, but needed evidence that it would work at full scale. Specifically, relating to foam distribution;

- Evidence that it would be capable of filling a commercial broiler shed, up to 100 m in length.
- Evidence that it would run over slats and fill a commercial breeder shed.
- Evidence that it would fill a naturally ventilated, multi-tiered free range laying shed, with semi open sides and would run over slats and around the equipment found inside the shed.

In order to achieve this, it is proposed to assemble a full scale prototype system and run a series of experiments and trials to demonstrate that the system will work in practice. In order to minimize the investment costs, we have negotiated with a number of equipment suppliers for the extended loan, at reduced cost, of certain key elements that are commercially available. We will also have technical input from fire equipment specialists and gas engineers to assist in the integration of their equipment into the system. Specialist parts and instrumentation required for the system will be built by Livetec Systems and Solutions For Research. All members of the team will be involved in the field trials.

Time-Scale and Cost

There is no language in the USDA regulations that allows for the use of inert gases even though the use of inert gases is allowed in the EU rules and regulations of 2013 as well as recommendations of the AVMA 2013.

However both human and video proof through the pig preference test done by Dr. Raj confirm without a doubt that pigs prefer, if given a choice, to enter a chamber with nitrogen gas as opposed to C02. No one can refute this evidence. The truth remains and the pigs themselves are proof of the humanity of inert gases.

However, science is being subverted to accommodate economy. C02 is a cheaper gas than nitrogen because companies that expel C02 and receive fines for doing so have found a venue for their dispersal and it is to sell their gas to the slaughter industries at a lower cost than nitrogen. In the market place, nitrogen gas is equal in expense to C02.

Please refer to the disturbing press C02 is now getting from the Daily Mail.

www.dailymail.co.uk/.../Disturbing-footage-pigs-struggling-br...

Daily Mail

Feb 17, 2015 - Most British supermarkets are buying in pigs stunned with carbon dioxide; It is ... Panic: CO2 stunning has been deemed humane because the pigs are moved in groups.... The slaughter method has been previously criticized by the Farm Animal....

The wave of the future is nitrogen gas foam. The sooner the USDA can give a green light to this gas usage the sooner we arrive at a time in history where our animals need not suffer the terrors of slaughter.

Nitrogen gas is God's answer to humane slaughter.

The USDA needs to move forward, if not lead the way with this alternative.

Please allow inert gases as an alternative humane method of slaughter for swine so companies wishing to use this gas may be able to do so.

Thank you,

Sincerely, Lorna Moffat 11/3/15

Lorna Moffat

[redacted]

Tel: [redacted]