

Dr Engelbrecht who gave feedback on the approach, process and the way forward.

Dr Engelbrecht explained the scars found at slaughter age on the skin of ostriches, which was related to the toenails:

- Damage persists from a very early age
- Scratches and deeper wounds left permanent scars that persisted to slaughter age
- Presence of toenails directly related to skin damage -kick and scratch marks

She explained the reasons for the clipping of the toenails that prevented injuries when chicks were small:

- nails are very sharp
- the skin is thin and sensitive
- behaviour: huddle together & climb over each other
- quick regrowth of the nail

She explained the anatomy of the bird. She said that the trial that had been done was to determine whether the process of clipping the toenail had been beneficial or detrimental to ostriches. They used the standard machine and method that was recommended and approved by SAVA.

- Electrical debeaker
- With safety attachment with holes for safeguarding and protection of toes
- Sharp blade
- Electrical cauterization

She explained the whole trial and results briefly. She said that another trial was done to look at the use of analgesics and topical analgesic.

- NSAID: Metacam oral suspension (meloxicam), dosed 30 minutes before clipping
- Topical anaesthetic: Emla 5% cream (lidocaine + prilocaine), applied after clipping

She explained the process and the results according to:

- Heterophil: lymphocyte ratio (H/L ratio) Before and 48 hours after treatment
- Feed intake
- Growth
- Mortalities

She added that the trial will have to be repeated for final results. The research continued, in consultation with:

- Dr Kenneth Joubert - Specialist Anaesthetist
- Dr Adriaan Olivier – Industry Research Veterinarian

She added that the assessment of pain was difficult but they assumed that toenail clipping was painful, especially due to the withdrawal reaction during clipping. She explained the options of an alternative practice or method or to address the welfare concerns by blocking, reducing and preventing pain. For the alternative of infra-red/microwave claw treatment, SAOBC has contacted Nova-Tech, but they felt that the current technology was not suitable for ostriches although they were in the process of developing new technology. Nova-Tech indicated that it would be a long process but they were looking at developments and have made progress.

For the addressing of pain she explained the two types of pain and how it would be addressed.

Primary pain:

- sharp, intense, well defined

- difficult to control
- general or local anaesthesia to block the nerves
- technically challenging
- cold spray (ethyl chloride)
- numb the toe & reduce nerve conduction

Secondary pain:

- poorly localised, dull aching type pain
- controlled with NSAID and / or analgesics
- Meloxicam (previous trial)
- Most of the suffering component of pain comes from secondary pain

She explained the workplans:

Work plan 1: Determine point of application of local anaesthesia

- Determine nerve innervation of ostrich chick toe
- Dissect out the nerve supply in chicks
- Document nerve supply for the bone
- Anatomical description
- Determine most appropriate spot for effective blocking
- Project with UP student needed

Work plan 2: Assessing pain

- Find methods of pain assessment that are appropriate
 - validated response measure
 - pain-specific behaviours for assessment
 - withdrawal response
 - general lethargy
 - vocalisations
- Find positive test for evaluation of effectiveness of analgesics and anaesthesia
- Develop appropriate welfare index for ostriches

- Need to be able to assess if treatment is working

Work plan 3: Determine dosage and timing

- Non-steroidal anti-inflammatory drug (NSAID)
 - Meloxicam
 - test different time schedules (10 / 20 / 30 / 40 minutes before clipping)
- Cold spray
 - Ethyl chloride
 - test application method and timing
- Local anaesthetic
 - Lignocaine
 - test various dosages
 - test different time schedules (5 / 10 / 15 / 20 minutes before clipping)

Work plan 4: Use of anaesthesia (cold spray) and analgesics

- Treatments:
 - Not clipped
 - Clipped
 - Clip + cold spray (ethyl chloride)
 - Clip + cold spray + NSAID
- Individual chicks = experimental unit
- 20 or more per treatment, depending on size of hatch batch
- Repeat twice
- Measure:
 - Reaction (withdraw / pull away?)
 - Wellness score
 - Survival & Growth

Work plan 5: Use of local anaesthesia and analgesics

- Treatments:

- Not clipped
- Clipped
- Clip + local anaesthesia (lignocaine)
- Clip + local anaesthesia + NSAID
- Individual chicks = experimental unit
- 20 or more per treatment, depending on size of hatch batch
- Repeat twice
- Measure:
 - Reaction (withdrawal of limb)
 - Wellness score
 - Survival & Growth

Dates:

Current / running

Trial to test effect of analgesics

- Slaughtered September 2016
- Repeat of trial to test effect of analgesics
 - Start December 2016
 - Slaughtered November 2017
 - Results March 2018

Dates:

Planned research trials

- Work plan 1: Determine nerve innervation of toe for correct application of anaesthesia
 - 2016 chick season
- Work plan 2: Finding methods of assessing pain / welfare
 - 2016 chick season
- Work plan 3: Determine dosage and timing for analgesics
 - 2016 & 2017 chick seasons
- Work plan 4: Use of cold spray + NSAID

- Done 2016
- Results March 2017
- Work plan 5: Use of local anaesthesia + NSAID
 - Done 2017
 - Results March 2018

Mr Kleyn explained the toenail-related injuries according to statistics of abattoir data over a period of a year:

~65% of post mortems at abattoir involved toenail-related injuries

~70% of incidents of extensive bruising involved toenail-related injuries

He summarised that toenail clipping was considered an essential practice by the ostrich industry to limit injuries to ostriches and workers on farms. He proposed that SAOBC continue with the current strict SAVA-approved protocol (no evidence of long-term suffering) while continuing with research. Mr Tomlinson thanked them for the effort of bringing the matter to the attention of the meeting. The Chairman said that the progress report on ostrich toenail clipping was open for discussion, comments, suggestions, queries and questions. Dr Marock wanted to know what the reason was for Nova-Tech's opinion that infra-red would not work on chicks. Dr Olivier explained that they were working in the turkey industry and they were not sure if existing machines would be able to accommodate the size of the chicks. He explained that machines are leased from them and then shipped overseas, and the risk was too high that it would not work. Dr Marock said that most of the tests were outcome-based methods and wanted to know if they were looking at input tests and what type of test they had in mind. Dr Marock explained that outcome-based measures referred to the weight of the animal, mortalities, etc. Dr Engelbrecht explained that this was why they used the heterophil:lymphocyte ratio because it is difficult to get enough blood from the small chicks to do tests like cortisol and asked Dr Marock to please suggest any suitable tests that he may know of. Dr Leask said that the infra-red machine has got the potential to assist with data. Mr Kleyn said that one disadvantage of the use of infra-red was that it would take time before the toenail was removed. Damage could occur during that time and in contrast the current method had an instant effect. Mr Tomlinson requested that they look at the graph on injuries and commented that scratches were doubled if toenails were not clipped. He was of the opinion that those scratches should also be an animal welfare issue, by stopping the clipping it would also be an issue that needed to be discussed - it showed that there was an advantage to clipping the toenail. Ms Y Steyn mentioned that the safety of the workers was also a welfare issue. She wanted to know whether more workers were injured when the nails were not clipped. Dr

Engelbrecht said that research had not been done on that aspect, but that farmers indicated that their workers were much more relaxed working with the birds when they knew that the nails had been clipped. She added that even the behaviour of the birds tended to be less aggressive. She said that it definitely had an occupational health and safety benefit as well. Ms Y Steyn added that this needed to be kept in mind. Mr Mdluli said that he was not positive that there would be scientific research according to Work plan 2 (Finding methods of assessing pain / welfare). He added that it was exciting if scientific research provided proof, not being only emotional about the situation. Mr Mdluli wanted to know how long the research on methods of assessing the pain would take. Dr Engelbrecht said that they were not sure but it was in the development stage. Dr Engelbrecht said that even the hatching process was stressful for the chicks and it overshadowed the clipping. Dr Malan added that there would be even more stress within injecting before clipping. Ms G de Lange wanted to know what consideration was given to husbandry where the birds were kept, especially while small and huddling. She wanted to know whether the environment was right and temperatures were correct. Dr Olivier said that the trial was done on 120 000 birds from the best to the worst farms. He added that the chicks were environmentally controlled at 25 – 28 degrees and the birds were already starting to pant. He assured members that they were not getting cold. Dr Engelbrecht said that they were flock animals and although there was enough space, they want to huddle. Ms G de Lange said that she had only referred in general to husbandry practices. Dr Olivier said that they could get feedback to see if there was a difference in the different farms. Mr Kleyn said that there was no doubt in his mind that the toenail clipping was beneficial to the ostriches with less damage to the chicks. Mr Ford said that the ostrich industry should be commended for going to such lengths to research and try to improve on their methods. He added that it must be looked at more globally and that was that the modern farming techniques and practices generally have aspects that were on the borderline of whether it was affecting the animals. He said that in the cattle industry disbudding had been painful for little calves, but it was a necessity when working with those animals later, and having a lot of animals in pens with long horns that could do more damage to each other than the little discomfort in the beginning. He said that with castration, you did not want 120 000 little (young) bulls walking around. He said that with some practices we had to try to do them as humanely as possible, but the fact remained, that with the modernisation of farming, those issues had to be addressed. He thought that there were other issues in the livestock production industry that needed more attention because there were larger populations involved. He wanted to commend the ostrich industry on how they progressed and it was an example for all to continue to improve and modernise practices. Dr Marock wanted to know from Dr Olivier with regards to cold spray, how thick the skin of the claws was. Dr Olivier responded that the baby chick's skins were thin. Dr Marock said that the cold

spray would then easily be absorbed. Dr Olivier responded that it would not be absorbed but it had a numbing effect. He added that it was something that would be easily applicable to farming enterprises systems, while the use of anaesthetics would be difficult for handlers that were not veterinarians or animal health technicians. Mr Kleyn commented that he was sceptical about trying to find an indicator that it was painful, because he believed that it was such a small procedure and was not as painful as an injection. He said that they had to continue with the research but that realistically it had been a really small procedure. The Chairman said that the meeting could join Mr Ford in thanking the SAOBC for providing the presentation. He added that SAOBC have warned the meeting that the research would be seasonal. The Chairman proposed that the report be accepted with thanks and request the SAOBC to take into account the ideas and questions raised, in order to continue to refine their research in providing the best possible answers. Mr Ford said that it could be a challenge for the geneticist to start breeding ostriches without toenails. The Chairman said it should be something that could be put to animal scientists to breed blunt nails. Dr Marock said that docile birds could be looked at. Mr Kleyn added that research was being done on the human interaction with the birds. Mr Klein requested the meeting permission to continue with the current procedure until a better solution could be found. Dr Engelbrecht explained the financial implications. Farmers could receive up to R5800 for premium grade skin (skin without any damage), if the skin gets damaged and downgraded to a 3rd grade skin (not badly damaged) the farmer receives R1900. It had a big impact on the economics of the industry.