

## Completion Report for BSAS Scholarships

**Name and affiliation:** Cameron Craigie

**Award Name and value of the award:** Murray Black award £750

**Was any additional funding secured to support the activity?**

(If yes, please state the value and source of funding): No

**Start/end date of the award:** 24<sup>th</sup> June – 24<sup>th</sup> July 2012

**Summary of the award (Briefly describe the objectives and how was it undertaken):**

(approximately 300 words)

The Murray Black award was used to support a trip to New Zealand to attend the Second joint conference of the New Zealand and Australian Societies of Animal Production held at Lincoln University, New Zealand from the 2<sup>nd</sup> till the 5<sup>th</sup> of July 2012. I presented the following paper as a talk: Craigie CR, Lambe NR, Richardson RI, Haresign W, Maltin CA, Rehfeldt C, Roehe R, Morris ST, Bungler L (2012) The effect of sex on some carcass and meat quality traits in Texel ewe and ram lambs. *Animal Production Science* **52**, 601-607.

Whilst in New Zealand, I also visited Silver Fern Farms in Christchurch and discussed their experiences of predicting lamb meat quality with near infrared spectroscopy (NIRS) under abattoir conditions. I was invited to a meeting where the researchers undertaking the work presented their interim results. The novel aspect of their approach was that they were using NIRS technology on-line under commercial conditions. The time constraints due to the processing speed meant only a single scan could be taken per lamb as opposed to the 10 replicates usually taken under experimental conditions.

I also visited Venison Packers Feilding Limited, a venison processing plant in the Manawatu and received an up-date on their experience of measuring saleable meat yield on individual deer carcasses. As part of their feedback to producers, the plant provides a "value-sheet" that contains meat yields from the shoulders, middles and hinds of the carcasses. There is also a scoring system for parasite burden and Johne's disease to inform farmers of any problems detected by the meat inspectors. The whole system is linked to on-farm performance data by electronic ID.

The final visit was to a fellmonger in Timaru, South Canterbury to learn about the processing of farm animal skins.

### **Benefits of the Award:**

This is the main part of the report and the two sections below should be approximately 1000 words in total. You may focus on benefits to yourself, to the animal science community, or both – depending on the nature of the activity undertaken.

### **Benefit of the award to you (e.g. new knowledge or skills, new contacts and collaborations):**

The Murray Black award enabled me to attend the conference and present my PhD research. The paper was peer reviewed and published as a journal article. It was a good learning experience to go through the peer review process and my scientific writing skills improved as a result. I caught up with several people that I had met at other conferences and researchers from New Zealand and Australia that have visited SAC over the years. I was also able to gain an appreciation of the animal science research being undertaken in Australia and New Zealand and make connections with researchers working in a variety of areas related to animal science. At the conference I attended sessions on: Reproductive performance – survival and growth, Pastures, feed quality and forage, Ruminant physiology – Cattle, Precision livestock management and modelling, Reproductive performance – The maternal environment and of course Meat science and products where I was speaking. One of the days we went on a field trip to North bank Station and Mt Somers Station. The two properties are deer finishers and in the case of Mt Somers, breeder-finishers. This trip was a good opportunity to learn more about deer production and pasture management. The evening culminated in a dinner hosted by the local PTA committee.

The visit to Silver Fern Farms following the conference was very informative and it was good to discuss the merits and shortcomings of NIRS technology and see some unpublished results from projects being undertaken by New Zealand meat companies. They tend to be more innovative than their EU counterparts because they have a much higher throughput and the average cost of innovations (like NIRS) per unit is spread over a much larger number of carcasses. Linking up with Silver Fern Farms has lead to them visiting us in Scotland to share information about a range of other projects they are currently undertaking, and we have also seen them attending the recent FAIM I meeting held in Dublin to share their experiences on traceability through the abattoir.

The visit to Venison Packers Feilding was to see how the routine measurement of lean meat yield was being achieved and to see what information was being fed back to farmers for performance comparison and breeding purposes. This visit was especially interesting because I started the development of the system as part of my PhD project in early 2010 and everything was recorded on clipboards. The project has progressed and now is fully integrated and data is automatically captured and assigned to an individual animal ID.

The visit to the Fellmonger was also very interesting and I made a new contact who is interested in ways we can work together in the future, particularly in relation to Scottish deer skins.

### **Benefit of the award to the animal science community, academic and industrial:**

The results presented with assistance from the Murray Black award found there was a small but statistically significant sex effect on tenderness (objectively assessed by shear force) but that the impact of the difference in terms of consumer acceptability is likely to be low in light of the threshold values for tenderness acceptability published in previous reports. Animal welfare is gaining importance as an extrinsic quality cue influencing the consumers' decision to purchase lamb meat. Castration of male lambs has a negative impact on animal welfare and the Farmer's financial gain from castration is highly variable. Despite this, the majority of farmers still opt to castrate male lambs. In terms of the effects on meat quality (which is an often-cited reason for castration) conclusions of experimental reports published in the last five years have yielded contradictory findings as to difference in tenderness between ewe and ram lambs. The chance to showcase some UK sheep research to Australian and New Zealand researchers was a key benefit of this award. Usually the direction of knowledge transfer in sheep research is reversed where UK institutions often look down-under for new ideas.

An important part of the proposal was to investigate how the New Zealand Society of Animal Production (NZSAP) and the Australian Society of Animal Production (ASAP) engage with young members. Engagement of early-career scientists contributes positively to BSAS conferences and workshops, new ideas could enable BSAS to offer more to the early-career scientists, adding extra benefits to becoming a society member. The theory was that an evaluation of how NZSAP and ASAP engage with early career scientists could potentially provide useful ideas for the BSAS student council and the academic association. Whilst at the joint conference, I made some enquiries as to how the societies engage with early career scientists and tried to address the following points:

- The involvement/representation of students in NZSAP/ASAP
- The role of students in the society
- Strategies for encouraging student participation and membership
- The type/number of events catering to students
- Ideas both NZSAP and ASAP use to engage students

The key findings were:

Neither NZSAP or ASAP has a dedicated student council or ran events dedicated to students in the way that BSAS does; however they offer half price subscription to student members and had a session in the conference dedicated to young members. There was no clear role of students in the societies and the recruitment tended to be through the need to be a member to be eligible to apply for funding such as travel grants. The prize for the best presenter at the joint conference was a \$500 book voucher from CSIRO publishing. The Australian society of animal production is in financial difficulty so it was not possible to get any clear consensus as to what they currently offer young members; however I was able to find out more about NZSAP. About 10-15% of the NZSAP membership is early stage researchers or students.

Like BSAS, presenting at NZSAP conferences is a friendly environment where early stage researchers and students can refine their presenting skills. The first session of the annual NZSAP meeting is always the

young member's session. The society offers a young members award for \$500 that is open to members under the age of 35 and within 2 years post PhD. The award of best young member is seen as the most prestigious of NZSAP awards. This award is sponsored by AGMARDT which is an external organization that funds animal science research.

Another approach that NZSAP uses to engage young members is to sponsor school science competitions; apparently this has gained traction only in the Dunedin region! Nobody is quite sure why it the uptake was strong only in Dunedin, but there was a theory that the large concentration of animal scientists working at Agresearch Invermay may have played a role!

It was clear that BSAS is a much more progressive society in the way that it engages with early stage researchers, and with all the additional activities BSAS almost plays a different role to either ASAP or NZSAP which are very much focused on the annual conference and production of occasional publications.

**Other supporting information:**

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