

# **CATTLE AND SMALL STOCK ASSOCIATED R & D projects and publications NOT FUNDED BY THE RMRD SA For the period 2012 to 2017**

## **PROJECTS LISTED BY INSTITUTION**

### **ARC – Irene:**

- Comparison of the effects of two levels of the beta-adrenergic agonist ractopamine and zilpaterol, over three exposure periods, on meat quality.
- Comparison of yield and quality tests using Salbutamol, Zilpaterol and no beta agonist.
- Cryo-gene banking of Indigenous Livestock germ plasma.
- Conservation of Namaqua Afrikaner Sheep.
- Prediction of fertility in SA indigenous goats using semen and phenotypic parameters (Namaqua sheep).
- Characterisation and conservation of animal genetic resource (Unimproved indigenous and Tankwa goats).
- Indigenous Livestock Data Collection (Addressing low fertility in smallholder enterprises using assisted reproduction technologies).

### **Eastern Cape** [*The list is not all inclusive. The comprehensive list is in the Minutes of the Meeting of the RPO Extended Executive Council of 23 August 2017*]:

- Improvement of the Dohne Merino by performance testing.
- The effect of different selection criteria for body weight and clean fleece weight on production parameters in the Dohne Merino stud.
- Maintenance of a biological bank for Dohne Merino sheep in SA.
- Blood and DNA bank for genomic research in sheep and goat breeds in SA.
- Establishment of a Boer Goat flock and the comparison with indigenous goats (Imbuzi) in a heartwater infested region.
- A genetic evaluation of the improved Boer Goat in the grass bush communities of the Eastern Cape.
- Studies on the detection, control by vaccination and the genetics of ovine Johne's disease (OJD).
- The development of a Nguni herd at Dohne A.D.I. where the unique reproduction and production characteristics of the Nguni breed shall be preserved and developed.
- The development of a Nguni herd under heartwater conditions at Bathurst R.C. where the unique reproduction and production characteristics of the Nguni breed shall be preserved and developed.
- Phase D Performance (test D 1 growth test) of male progeny of the Dohne Nguni Stud.
- The economic viability, reproduction, and production parameters of a beef breeding herd (Bonsmara breed) on the pastures and natural veld at the Bathurst Research Centre.
- Support to the Departmental Livestock Improvement Scheme (LIS).

- The reproduction and production potential of Nguni Cattle on *Karroid danthonia* mountain veld in the East Cape Province (Wolwehoek Research Farm).
- The development and management of an adapted farming system at Campagna in the High Rainfall sourveld areas of the Eastern Cape Region.
- Development of a flock improvement model for the Eastern Cape communal areas: A case study of Isinqumeni: Masimanyane community.
- Establishment of a sheep breeding unit on Land Redistribution and Agricultural Development (LRAD) farming areas of the Eastern Cape.
- Evaluating the production levels and income contribution of livestock to rural households: Case study of LRAD farms in the EC Province.
- The use of molecular genetics techniques to quantify offspring production from genetically superior males introduced into uncontrolled communal breeding systems.
- Effect of dietary Diatomaceous Earth on growth performance and parasite levels of lambs under a semi-intensive production system.
- The development and evaluation of an exogenous hormonal control regime for the medium- to long-term regulation of the reproductive cycle in communal sheep.
- The effect of vegetation type and structure on the species composition and geographic distribution of economically important ticks on cattle in the Eastern Cape Province.
- Longitudinal study on population dynamics of native tick, the *Rhipicephalus (Boophilus) decoloratus* and the invasive cattle tick, *Rhipicephalus (Boophilus) microplus* in the Eastern Cape Province.
- Prevalence and seasonal changes in the population of gastro-intestinal parasites and flukes of ovine and caprine spp. on three different veld types under communal farming areas of the Eastern Cape.
- The effect of *Aloe ferox* extract product to control *Haemonchus contortus* species in sheep and goats in the Eastern Cape Province, South Africa.
- Benchmarking communal livestock productivity.
- The effect of biogas slurry on yield and quality of oats and fescue planted in Macubeni, Eastern Cape, South Africa.
- Forage improvement on old lands in the Eastern Cape province of South Africa.
- National lucerne cultivar evaluation programme.
- The herbaceous yield and soil nutrient content contribution of various leguminous pastures planted in two communal areas of the Eastern Cape.
- Mixed legume pasture on old arable lands as a source of supplementary feed for sheep during winter in Döhne sourveld of the Eastern Cape.
- The effect of fertilization on Kikuyu (*Pennisetum clandestinum*) foggage for overwintering the Döhne sourveld.
- The effect of *Acacia karroo* tree density on grass species composition, forage yield and quality throughout different rainfall regimes in the Eastern Cape region.
- The control of undesirable karroid shrubs.
- Ecosystems, carbon and nitrogen responses to bush encroachment in the semi-arid areas of the Eastern Cape.
- Grazing capacity sensitivity of veld types, for example Valley Thicket: Means and norms to recover and re-establish deteriorated areas.

- The effects of seasonal burning in Döhne sourveld.
- Use of camels (*Camelus dromedaries*) to control *Acacia karroo* encroachment in the Eastern Cape Province Thornveld.
- Control of bush encroachment in the coastal areas of the Eastern Cape.

#### **EcoHealth Alliance:**

- Understanding Rift Valley Fever (RVF) in the Republic of South Africa
  - Understanding the Effects of Climate and Weather
  - Investigating Vegetation Ecology
  - Investigating Wetland Soil Properties
  - Investigating Ecological Characteristics of RVF Virus Vector Mosquito Species
  - Determining the Seroprevalence of RVF Virus Antibodies in Farm Workers
  - Baseline zero survey of Farmed and Free-Ranging Wild Ruminants and Domestic Livestock
  - Investigating the Change in RVF Virus Antibody Levels in a Sheep Cohort
  - Comparison of Cattle & Buffalo Zero status in the Free State and Limpopo
  - Laboratory Comparison of NP-based Indirect ELISA

#### **KwaZulu-Natal:**

- Evaluation of fescue for finishing beef steers
- Mineral composition of kikuyu in different environments
- Investigate the potential of *Sericea lespedeza* as summer grazing for sheep
- The effect of different management / breeding strategies on Nguni cattle performance
- An investigation into the effect of different breeding strategies on a Nguni herd's performance
- The effect of night time kraaling on cow productivity and fertility of cattle at Kokstad Research Station.
- Establish the effect an unrestricted breeding season in a system with no fencing vs a restricted breeding system for sheep on the Kokstad Research Station.
- DEMO: The grazing of Nguni and Hereford beef breeding cows on kikuyu for 12 months of the year.
- Genetic conservation and characterization of indigenous sheep.
- Determining coat colour inheritance in Nguni Cattle.
- The characterization of the indigenous Zulu sheep (Imvu) in Zululand.
- Utilization of cover crops by livestock.
- The effect of cattle to sheep ratio and stocking rate on veld condition (simulation trial) on Kokstad Research Station.
- Plant Introduction.
- Control of *Senecio* species in the Dry Highland Sourveld of KwaZulu-Natal.
- The effect of a two-camp "graze and blaze" system on veld condition, animal performance and soil loss, on Kokstad Research Station.
- Lucerne cultivar evaluation at Kokstad Research Station.

- Evaluation of the effect of round-up, soil temperature and soil moisture on the establishment of ryegrass oversown into kikuyu.
- Evaluation of medium and long duration forage cereal varieties to be grown in a mixture with forage legumes.
- Elite pasture cultivar evaluation trials.
- Manure as alternative fertilizer for pastures.
- Performance of goats supplemented with sweet potato vines.
- Germplasm introduction, conservation and screening demonstration on research stations.
- Evaluation of kikuyu cultivars for chemical composition, yield and adaptability to cold environments.
- Value of inclusions of legumes in pastures and secondary veld (old land – applicable to LRAD farms and degraded communal veld)
- Control of *Seriphium plumosum* in the Sandy sourveld.

#### **North West Province:**

- Improvement of fertility in the Afrikaner beef herd at Potchefstroom.
- Determination of animal production norms for Boer goats at Armoedsvlakte.
- The performance of Bonsmara steers finished on veld at Armoedsvlakte Livestock Improvement Centre in the North West Province.
- The performance of Nguni steers finished on cultivated pastures at Melton Livestock Improvement Centre in the North West Province.
- The role of various lick ingredients in the manifestation of knee arthrosis in beef cattle fed mineral supplements during winter and summer- Armoedsvlakte.
- The role of various lick ingredients in the manifestation of knee arthrosis in beef cattle fed protein supplement during winter and mineral supplements during summer – Potchefstroom.
- The biological and economical assessment of early mating of Bonsmara heifers in the western parts of the province – Armoedsvlakte.
- The biological and economical assessment of early mating of Nguni heifers in the arid western grasslands of the province.
- The quantification of reciprocal crossbreeding in beef cattle.
- Drought preparedness of farmers in the Nguni Cattle Development Project and the Sire Subsidy Scheme.
- Reproductive and growth performance of beef cattle herds participating in the Sire Subsidy Scheme in the Dr Ruth Segomotsi Mompati District.
- Bagasse as roughage in the finishing of lambs [partially funded by Molatek].
- The management of acidosis as a result of excessive grain consumption by ruminant animals.
- The performance of Dorper lambs finished in a feedlot.
- Evaluation of an ionophore in a winter lick.

- Comparison between a TMR and an increased level of lucerne in beef cattle in the feedlot.
- A comparison between rumensin and capsicum in beef fattening rations.
- Cafeteria system in beef fattening.
- Influence of pellet size on sheep fattening.
- The performance of SAMM lambs finished in a feedlot.
- The performance of beef weaners in the feedlot at different levels of lucerne inclusion.
- The performance of weaned beef cattle steers on irrigated rye grass pastures.
- The scientific determination of grazing capacity norms for the North West Province.
- Development of a long-term veld monitoring programme for the North West Province.
- The influence of various veld management approaches, within a weaner calf system, on veld condition and available *Cymbopogon-Themeda* veld in the Potchefstroom district.
- Determination of grazing capacity norms for the Vryburg Shrub bushveld [Armoedsvlakte] with a weaner calf production system.
- A review of seeding ratios for Rhodes and Smuts finger grass pastures.

#### A. PUBLICATIONS:

#### Animal health:

- M. G. Masango, B. Flett, C. Ellis and C.J. Botha, 2015. *Stenocarpella maydis* and its toxic metabolites: a South African perspective on diplodiosis . *World Mycotoxin Journal*, 8 (3), 341 - 350.
- L.C.R. Meyer, R. Hetem, D. Mitchell and A. Fuller, 2015. Hypoxia following etorphine administration in goats (*Capra hircus*) results more from pulmonary hypertension than from hypoventilation. *BMC Veterinary Research*, 11 (18), 1 - 9.
- M.L. Penrith, C.J. Botha and R.J. Tustin, 2015. Plant poisonings in livestock in Brazil and South Africa. *Journal of the South African Veterinary Association*, 86 (1), 1 - 3.
- A.O. Aro, J. Dzoyem, T. Hlokwe, E. Madoroba, J.N. Eloff and L.J. McGaw, 2015. Some South African Rubiaceae Tree Leaf Extracts Have Antimycobacterial Activity Against Pathogenic and Non-pathogenic *Mycobacterium* Species. *Phytotherapy Research* 29, 1004 - 1010.
- L. Odendaal, G.T. Fosgate, M. Romito, J.A.W. Coetzer and S.J. Clift, 2014. Sensitivity and specificity of real-time reverse transcription polymerase chain reaction, histopathology, and immunohistochemical labeling for the detection of Rift Valley fever virus in naturally infected cattle and sheep. *Journal of Veterinary Diagnostic Investigation*, 26 (1), 49 - 60.
- J.C. Lubinga, S.J. Clift, E. Tuppurainen, W.H. Stoltsz, S. Babiuk, J.A.W. Coetzer and E.H. Venter, 2014. Demonstration of lumpy skin disease virus infection in *Amblyomma*

*hebraeum* and *Rhipicephalus appendiculatus* ticks using immunohistochemistry. *Ticks and Tick-Borne Diseases*, 5, 113 - 120.

- M. Adamu, V. Naidoo and J.N. Eloff, 2014. The antibacterial activity, antioxidant activity and selectivity index of leaf extracts of thirteen South African tree species used in ethnoveterinary medicine to treat helminth infections. *BMC Veterinary Research*, 10 (52), 1 - 7.
- L.J. Biggs, C.A.P. Carrington and V. Naidoo V, 2014. Evaluation of medicinal turpentine used for the prevention of bovine babesiosis in southern KwaZulu-Natal and the eastern Free State. *Onderstepoort Journal of Veterinary Research*, 81 (1), 1 - 6.
- C.J. Botha, D. Lessing, M. Rosemann, E. van Wilpe and J.H. Williams, 2014. Analytical confirmation of *Xanthium strumarium* poisoning in cattle. *Journal of Veterinary Diagnostic Investigation*, 26 (5), 640 - 645.
- J. Dzoyem, L.J. McGaw and J.N. Eloff, 2014. In vitro antibacterial, antioxidant and cytotoxic activity of acetone leaf extracts of nine under-investigated *Fabaceae* tree species leads to potentially useful extracts in animal health and productivity. *BMC Complementary and Alternative Medicine*, 14 (147), 1 - 7.
- E. Pauw and J.N. Eloff, 2014. Which tree orders in southern Africa have the highest antimicrobial activity and selectivity against bacterial and fungal pathogens of animals? *BMC Complementary and Alternative Medicine*, 14 (317), 1 - 12.
- C.J. Botha, M. Truter and A. Jacobs, 2014. *Fusarium* species isolated from *Pennisetum clandestinum* collected during outbreaks of kikuyu poisoning in cattle in South Africa. *Onderstepoort Journal of Veterinary Research*, 81 (1), 1 - 8.
- C.J. Botha, M. Legg, M. Truter and M. Sulyok, 2014. Multitoxin analysis of *Aspergillus clavatus*-infected feed samples implicated in two outbreaks of neuromycotoxicosis in cattle in South Africa. *Onderstepoort Journal of Veterinary Research*, 81 (1), 1 - 6.
- O.T. Adenubi, F.O. Fasina, L.J. McGaw, J.N. Eloff and V. Naidoo, 2016. Plant extracts to control ticks of veterinary and medical importance: A review. *South African Journal of Botany*, 105, 178- 193.
- I. Elisha, J. Dzoyem, F.S. Botha and J.N. Eloff, 2016. The efficacy and safety of nine South African medicinal plants in controlling *Bacillus anthracis* Sterne vaccine strain. *BMC Complementary and Alternative Medicine*, 16 (5), 1 - 7.
- D.N. Qekwana, J. Oguttu, D.A. Venter and O. Odoi, 2016. Disparities in Beef Tapeworm Identification Rates in the Abattoirs of Gauteng Province, South Africa: A Descriptive Epidemiologic Study. *PLoS One*, 11 (3), 1 - 12.
- A. Davis and J.G. Myburgh, 2016. Investigation of stillbirths, perinatal mortality and weakness in beef calves with low-selenium whole blood concentrations. *Journal of the South African Veterinary Association*, 87 (1), 1 - 6.
- G. Fouche, B.M. Sakong, O.T. Adenubi, E. Pauw, T. Leboho, K. Wellington and J.N. Eloff, 2016. Anthelmintic activity of acetone extracts from South African plants used on egg hatching of *Haemonchus contortus*. *Onderstepoort Journal of Veterinary Research*, 83 (1), 1 - 7.
- L. Prozesky, J.A. Neser, H.H. Meissner, F.K. Botha, L. Jacobs, C.A. Shepstone, H. Viljoen, H. Koster, C. de Brouwer, J. van Zyl and G. van der Veen, 2016. Preliminary report on osteochondrosis in cattle in the northwestern parts of South Africa. *Onderstepoort Journal of Veterinary Research*, 83 (1), 1 - 7.

- A. Haw, L.C.R. Meyer and A. Fuller A, 2016. Nalbuphine and butorphanol reverse opioid-induced respiratory depression but increase arousal in etorphine-immobilized goats (*Capra hircus*). *Veterinary Anaesthesia and Analgesia*, 43, 539 - 548.
- A. Haw, L.C.R. Meyer, J. Greer and A. Fuller, 2016. Ampakine CX1942 attenuates opioid-induced respiratory depression and corrects the hypoxaemic effects of etorphine in immobilized goats (*Capra hircus*). *Veterinary Anaesthesia and Analgesia*, 43, 528 - 538.
- T. Galligan, M. Taggart, R. Cuthbert, D. Svobodova, J.K. Chipangura, D. Alderson, V. Prakash and V. Naidoo, 2016. Metabolism of aceclofenac in cattle to vulture-killing diclofenac. *Conservation Biology*, 30 (5), 1122 - 1127.
- E. Van Zyl, F.S. Botha, J.N. Eloff, P. Msuntsha, P. Oosthuizen and C. Stevens, 2017. The use of *Lespedeza cuneata* for natural control of gastrointestinal nematodes in Merino sheep. *Onderstepoort Journal of Veterinary Research*, 84 (1), 1 - 7.
- B. Mubemba, P.N. Thompson, L. Odendaal, P. Coetzee and E. Venter, 2017. Evaluation of positive Rift Valley fever virus formalin-fixed paraffin embedded samples as a source of sequence data for retrospective phylogenetic analysis. *Journal of Virological Methods*, 243, 10 - 14.
- R. Leask and J.C.A. Steyl, 2017. Mycotic rhinitis in a Mutton Merino ewe. *Journal of the South African Veterinary Association*, 88, 1 - 3.
- K. Wellington, T. Leboho, B.M. Sakong, O.T. Adenubi, J.N. Eloff and G. Fouche, 2017. Further studies on South African plants: Acaricidal activity of organic plant extracts against *Rhipicephalus (Boophilus) microplus* (Acari: Ixodidae). *Veterinary Parasitology*, 234, 10 - 12.
- C.J. Botha, 2013. Krimpsiekte in South Africa: Historical perspectives. *Journal of the South African Veterinary Association*, 84 (1), 1059, Online.
- M. Karama and C. Gyles, 2013. Virulence profiling of shiga toxin-producing *Escherichia coli* O111: NM isolates from cattle. *Applied and Environmental Microbiology*, 79 (13), 4164-4165.
- M. Adamu, V. Naidoo and J.N. Eloff, 2013. Efficacy and toxicity of thirteen plant leaf extracts used in ethnoveterinary medicine in South Africa on egg hatching and larval development of *Haemonchus contortus*. *BMC Veterinary Research* 9 (38), Online.
- A Spickett, J.F. de Villiers, J. Boomker, J.B. Githiori, G.F. Medley, M.O. Stenson, P.J. Waller and A.F. Vatta., 2012 Tactical treatment with copper oxide wire particles and symptomatic levamisole treatment using the FAMACHA© system in indigenous goats in South Africa. *Veterinary Parasitology*, 184, 48 – 58.
- Eloff JN, Adamu M, Van Zyl E, Botha F, McGaw LJ and Naidoo V., 2016. Some success at last in the use of plants to combat helminth parasites in animal production. *Planta Med.*, 81(S 01): S1-S381. DOI: 10.1055/s-0036-1596986.
- C. Antwi, E.L.K. Osafo, D.S. Fisher, H.M. Yacout, A. Donkoh, A.A. Hassan, S.M.M. Sobhy, H. Adu-Dapaah and A.Z.M. Salem, 2014. Effect of pesticides applied in cowpea production on rumen microbial fermentation of cowpea haulms as reflected in *in vitro* gas production. *South African Journal of Animal Science*, 44 (3), 215-219.
- P.A.M. Matebesi-Ranthimo, S.W.P. Cloete, J.B. van Wyk and J.J. Olivier, 2014. The relationships between faecal worm egg count and subjectively assessed wool and

conformation traits in the Tygerhoek Merino flock. *South African Journal of Animal Science*, 44 (3), 220-227.

- Z. Mpetile, S.W.P. Cloete, A.C.M. Kruger and K. Dzama, 2015. Environmental and genetic factors affecting faecal worm egg counts in Merinos divergently selected for reproduction. *South African Journal of Animal Science*, 45 (5), 510-520.

#### **Animal Production:**

- S. Maloney, L.C.R. Meyer, D. Blache and A. Fuller, 2013. Energy intake and the circadian rhythm of core body temperature in sheep. *Physiological Reports*, 1 (5), online.
- E.C. Webb, P.C. Visagie, J. van der Westhuizen and H.A. Snyman, 2017. The influence of production, environment and environmental factors on the growth, size and reproduction of Bonsmara cows. *South African Journal of Animal Science*, 47, 542-552.
- J. van Wyngaard, 2017. A profitable cross calf-rearing system - from multiple sucklings to finishing on pasture. *Red Meat*, 8 (3), 64-69.
- M.D. MacNeil, M.C. Mokolobate, M.M. Scholtz, F.J. Jordaan and F.W.C. Nesor, 2017. Alternative approaches to evaluation of cow efficiency. *South African Journal of Animal Science*, 47 (2), 118-123.
- C.Z. Roux, 2017. Basal metabolic rate scaled to body mass between species by the fractal dimension of the vascular system and body composition. *South African Journal of Animal Science*, 47 (3), 246-254.
- C.Z. Roux, 2017. Basal metabolic rate scaled to body mass within species by the fractal dimension of the vascular system and body composition. *South African Journal of Animal Science*, 47 (4), 494-504.
- S. Goni, C.J.C. Muller, B. Dube and K. Dzama, 2016. Effect of crossbreeding on beef production of Jersey herd using Fleckvieh sires maintained on a pasture based feeding system. *Open Journal of Animal Sciences*, 6, 163-168.
- J.S. Drouillard, P.H. Henning, H.H. Meissner and K-J. Leeuw, 2012. *Megasphaera elsdenii* on the performance of steers adapting to a high-concentrate diet, using three or five transition diets. *South African Journal of Animal Science*, 42 (2), 195-199.
- H.H. Meissner, 2012. Beef production and consumption: sustainability towards 2030. In: World Nutrition Forum - NutriEconomics®, Balancing Global Nutrition & Productivity. Edited by E.M. Binder. ISBN: 978-0-9573721-2-2.
- K.-J. Leeuw, H.H. Meissner, P.H. Henning, F.K. Siebrits, J.H.A. Apajalahti and A. Kettunen, 2016. Effects of virginiamycin and monensin administered alone or together with *Megasphaera elsdenii* strain NCIMB 41125 on in vitro production of lactate and VFA and the effects of monensin and *M. elsdenii* strain NCIMB 41125 on health and performance of feedlot steers. *Livestock Science*, 183, 54-62.

- H.H. Meissner, P.H. Henning, K.-J. Leeuw, F.M. Hagg, C.H. Horn, A. Kettunen and J.H.A. Apajalahti, 2014. Efficacy and mode of action of selected non-ionophore antibiotics and direct-fed microbials in relation to *Megasphaera elsdenii* NCIMB 41125 during in vitro fermentation of an acidosis-causing substrate. *Livestock Science*, 162, 115–125.
- E.C. Webb and L.J. Erasmus, 2013. The effect of production system and management practices on the quality of meat products from ruminant livestock. *South African Journal of Animal Science*, 43 (3), 415-423.
- L.E. Matjuda, M.D. MacNeil, A. Maiwashe, V.R. Leesburg and M. Malatje, 2014. Index-in-retrospect and breeding objectives characterizing genetic improvement programmes for South African Nguni cattle. *South African Journal of Animal Science*, 44 (2), 161-172.
- R.M. Moyo, W.A. van Niekerk, A. Hassen, R.J. Coertze, C.J.L du Toit and B.S. Gameda, 2016. Ensiling quality of maize as influenced by the addition of wet distillers grains with soluble. *South African Journal of Animal Science*, 46 (1), 21-28.
- B.D. Nkosi, P.V. Vadlani, K. Brijwani, A. Nanjunda and R. Meeske, 2012. Effects of bacterial inoculants and an enzyme on the fermentation quality and aerobic stability of ensiled whole-crop sweet sorghum. *South African Journal of Animal Science*, 42 (3), 232-240.
- G.H. Pienaar, O.B. Einkamerer, H.J. van der Merwe, A. Hugo, G.D.J. Scholtz and M.D. Fair, 2012. The effects of an active live yeast product on the growth performance of finishing lambs. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 464-468.
- F.W.C. Naser, J.B. van Wyk, M.D. Fair, P. Lubout and B.J. Crook, 2012. Estimation of genetic parameters for growth traits in Brangus cattle. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 469-473.
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- W.F.J. van de Vyver and B.A. Useni, 2012. Digestion and microbial protein synthesis in sheep as affected by exogenous fibrolytic enzymes. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 488-492.
- I.M. van Rooyen, P.J. Fourie and L.M.J. Schwalbach, 2012. Relationship between pelvic and linear body measurements in Dorper ewes. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 498-502.
- J.W. Steyn, F.W.C. Naser, C. Hunlun and P.C. Lubout, 2012. Preliminary report: Pedigree analysis of the Brangus cattle in South Africa. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 511-514.
- S. Terblanche, T.S. Brand, J.W. Jordaan and J.C. van der Walt, 2012. Production response of lambs receiving creep feed while grazing two different pastures. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 535-539.

- H.A. O'Neill, E.C. Webb, L. Frylinck and P. Strydom, 2012. Urinary catecholamine concentrations in three beef breeds at slaughter. *South African Journal of Animal Science*, 42 (Issue 5, Supplement 1), 545-549.
- E. van Marle-Köster, C. Visser and D.P. Berry, 2013. A review of genomic selection - Implications for the South African beef and dairy cattle industries. *South African Journal of Animal Science*, 43 (1), 1-17.
- M.D. MacNeil, M.M. Scholtz and A. Maiwashe, 2013. Estimates of variance components for postweaning feed intake and growth in Bonsmara bulls and evaluation of alternative measures of feed efficiency. *South African Journal of Animal Science*, 43 (1), 18-24.
- S.O. Qwabe<sup>1</sup>, E. van Marle-Köster, A. Maiwashe and F.C. Muchadeyi, 2013. Evaluation of the BovineSNP50 genotyping array in four South African cattle populations. *South African Journal of Animal Science*, 43 (1), 64-67.
- A. Theunissen, M.M. Scholtz, F.W.C. Naser and M.D. MacNeil, 2013. Crossbreeding to increase beef production: additive and non-additive effects on weight traits. *South African Journal of Animal Science*, 43 (2), 143-152.
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- C.Z. Roux, 2013. Use of theoretical efficiencies of protein and fat synthesis to calculate energy requirements for growth in ruminants. *South African Journal of Animal Science*, 43 (4), 435-456.
- A. Maiwashe, N.B. Nengovhela, K.A. Nephawe, J. Sebei, T. Netshilema, H.D. Mashaba, L. Nesengani and D. Norris, 2013. Estimates of lactation curve parameters for Bonsmara and Nguni cattle using the weigh-suckle-weigh technique. *South African Journal of Animal Science*, 43 (Issue 5, Supplement 1), S12-S16.
- K.E. Booyens, O.B. Einkamerer, H.J. van der Merwe, A. Hugo, S.C. Slippers and M.D. Fair, 2013. The effect of dietary lipid saturation and antioxidant source on the nutrient digestibility of lamb finishing diets. *South African Journal of Animal Science*, 43 (Issue 5, Supplement 1), S22-S26.
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