

ANIMAL PRODUCTION SCIENCE

CONTENTS Volume 52, Issues 6–7, 2012, 383–679

ANIMAL PRODUCTION IN AUSTRALIA

29th Proceedings of the Australian Society of Animal Production

BRIDGING THE GAP – AUSTRALIAN AND NEW ZEALAND ANIMAL PRODUCTION RESEARCH

Preliminary Material i–xi

McClymont Lecture

Food and feed, mycotoxins and the perpetual pentagram in a changing animal production environment

Wayne L. Bryden 383–397

John Barnett Lecture

The importance of pre-laying behaviour and nest boxes for laying hen welfare: a review

Greg M. Cronin, the late John L. Barnett and Paul H. Hemsworth 398–405

Underwood Lecture

Livestock nutrition – a perspective on future needs in a resource-challenged planet

R. S. Hegarty 406–415

Stobbs Lecture

Diurnal grazing pattern: its physiological basis and strategic management

P. Gregorini 416–430

Fibre Production

Production, properties and processing of American bison (*Bison bison*) wool grown in southern Australia

B. A. McGregor 431–435

Variation in the whiteness and brightness of white Australian cashmere associated with farm of origin and fibre attributes

B. A. McGregor 436–441

Relationships between skin follicle characteristics and fibre properties of Suri and Huacaya alpacas and Peppin Merino sheep

M. B. Ferguson, B. A. McGregor and R. Behrendt 442–447

Wool staple tenacity in New Zealand Romney sheep: heritability estimates, correlated traits, and direct response to selection

D. R. Scobie, A. R. Bray, M. C. Smith, J. L. Woods, C. A. Morris and S. M. Hickey 448–455

Selection for yearling fleece weight and its effect on fleece shedding in New Zealand Wiltshire sheep

D. O'Connell, D. R. Scobie, S. M. Hickey, R. M. W. Sumner and A. J. Pearson 456–462

Genetic variation in sulfur, calcium, magnesium, manganese and trace metal content of Merino wool and correlations with brightness, yellowness and photostability

S. Hatcher, A. L. King and K. R. Millington 463–470

Reproductive Performance

Effect of timing of exposure to vasectomised rams and ewe lamb body condition score on the breeding performance of ewe lambs

L. M. Cave, P. R. Kenyon and S. T. Morris 471–477

Postpartum anoestrous interval in first-lactation beef and dairy-beef crossbred cows

R. E. Hickson, R. L. Laven, N. Lopez-Villalobos, P. R. Kenyon and S. T. Morris 478–482

Effect of twin-bearing ewe body condition score and late pregnancy nutrition on lamb performance

P. R. Kenyon, R. E. Hickson, P. G. Hutton, S. T. Morris, K. J. Stafford and D. M. West 483–490

continued on next page

The effect of liveweight and liveweight gain of ewes immediately post-weaning on the liveweight and survival of subsequent lambs

R. E. Hickson, P. R. Kenyon, H. T. Blair, J. E. Harding, M. H. Oliver, A. L. Jaquiere, G. B. Nicoll and K. G. Burt 491–496

The survival of lambs in shelter declines at high stocking intensities

S. M. Robertson, B. J. King, J. C. Broster and M. A. Friend 497–501

Ewe movement and ewe-lamb contact levels in shelter are greater at higher stocking rates

J. C. Broster, D. P. Rathbone, S. M. Robertson, B. J. King and M. A. Friend 502–506

Pre-weaning growth of red deer calves is not determined by ability of hinds to produce milk

G. K. Barrell, M. Wellby, M. J. Ridgway, G. W. Asher and J. A. Archer 507–515

Managing the weaning transition of Merino lambs by promoting positive growth rates and increasing survival – is yard weaning a viable option?

S. Gabb, S. Hatcher, J. Eppleston, B. Watt and K. J. Thornberry 516–523

Effects of maternal nutrition during pregnancy on fetal growth and maternal constraint in sheep

C. M. C. Jenkinson, A. K. Earl, P. R. Kenyon and H. T. Blair 524–532

Ewe nutrition in early and mid- to late pregnancy has few effects on fetal development

N. P. Martin, P. R. Kenyon, P. C. H. Morel, S. J. Pain, C. M. C. Jenkinson, P. G. Hutton, S. T. Morris, S. W. Peterson, E. C. Firth and H. T. Blair 533–539

Meta-analysis to establish the response of having heavier mature ewes during gestation on the birthweight of the lamb and the weaning weight of the ewe and lamb

N. M. Schreurs, P. R. Kenyon, P. C. H. Morel and S. T. Morris 540–545

Does dam pre-breeding nutrition and/or birth rank affect the glucose and fat metabolism of 18-month-old female offspring?

S. J. Pain, D. S. van der Linden, P. R. Kenyon and H. T. Blair 546–551

Single female offspring born to primiparous ewe-lambs are lighter than those born to adult multiparous ewes but their reproduction and milk production are unaffected

M. F. P. Loureiro, S. J. Pain, P. R. Kenyon, S. W. Peterson and H. T. Blair 552–556

Dairy

The impact of system changes to a dairy farm in south-west Victoria: risk and increasing profitability

J. W. Heard, C. M. Leddin, D. P. Armstrong, C. K. M. Ho, K. A. Tarrant, B. Malcolm and W. J. Wales 557–565

Pastures, Feed Quality and Forage

Genotypic variation in *in sacco* dry matter degradation kinetics in perennial ryegrass (*Lolium perenne* L.)

X. Z. Sun, G. C. Waghorn, J.-H. B. Hatier and H. S. Easton 566–571

Triiodothyronine influences digesta kinetics and methane yield in sheep

M. C. Barnett, J. P. Goopy, J. R. McFarlane, I. R. Godwin, J. V. Nolan and R. S. Hegarty 572–577

The effect of sucrose addition on intake of a tropical grass hay by sheep

A. de Vega and D. P. Poppi 578–583

Meat Science and Products

The prediction of meat yield in lamb carcasses using primal cut weights, carcass measures and the Hennessy Grading Probe

J. Siddell, B. M. McLeod, E. S. Toohey, R. van de Ven and D. L. Hopkins 584–590

Discovery and trait association of single nucleotide polymorphisms from gene regions of influence on meat tenderness and long-chain omega-3 fatty acid content in Australian lamb

M. I. Knight, H. D. Daetwyler, B. J. Hayes, M. J. Hayden, A. J. Ball, D. W. Pethick and M. B. McDonagh 591–600

The effect of sex on some carcass and meat quality traits in Texel ewe and ram lambs

C. R. Craigie, N. R. Lambe, R. I. Richardson, W. Haresign, C. A. Maltin, C. Rehfeldt, R. Roehe, S. T. Morris and L. Bunger 601–607

Genetics

Using genes differentially expressed in bulls to classify steers divergently selected for high and low residual feed intake

Y. Chen, P. F. Arthur, R. M. Herd, K. Quinn and I. M. Barchia 608–612

continued on next page

Precision Livestock Management and Modelling

Mob-based walk-over weights: similar to the average of individual static weights?

D. J. Brown, D. B. Savage, G. N. Hinch and S. J. Semple 613–618

Ruminant Physiology

The liveweight gain response of heifers to supplements of molasses or maize while grazing irrigated

Leucaena leucocephala/*Digitaria eriantha* pastures in north-west Australia

S. R. Petty and D. P. Poppi 619–623

Effect of monensin inclusion in supplements for cattle consuming low quality tropical forage

S. R. McLennan, M. J. Callaghan, A. J. Swain and J. F. Kidd 624–629

Liveweight gain and feed intake of weaned Bali cattle fed a range of diets in Central Sulawesi, Indonesia

Marsetyo, Damry, S. P. Quigley, S. R. McLennan and D. P. Poppi 630–635

Phosphorus and calcium retention in steers fed a roughage diet is influenced by dietary 25OH-vitamin D

J. J. McGrath, D. B. Savage, J. V. Nolan and R. Elliott 636–640

The level of tree legumes required to meet the maintenance energy requirements of Ongole (*Bos indicus*) cows fed rice straw in Indonesia

T. M. Syahnar, R. Antari, D. Pamungkas, Marsetyo, D. E. Mayberry and D. P. Poppi 641–646

Liquid-phase denaturant gradient gel electrophoresis profiles of rumen bacteria from Brahman cross steers selected into two groups on the basis of post-weaning liveweight gain on low crude protein pasture

E. D. Martínez, K. E. Turnbull, S. P. Quigley, S. J. Streeter, A. Swain, A. V. Klieve, D. Ouwerkerk and D. P. Poppi 647–652

An initial investigation on rumen fermentation pattern and methane emission of sheep offered diets containing urea or nitrate as the nitrogen source

L. Li, J. Davis, J. Nolan and R. Hegarty 653–658

Disease, Animal Health and Welfare

The prevalence of lice (*Bovicola ovis*) in sheep flocks on the central and southern Tablelands of New South Wales

S. Popp, J. Eppleston, B. R. Watt, S. Mansfield and R. D. Bush 659–664

Improving sheep production and welfare in extensive systems through precision sheep management

Jessica E. Morris, Greg M. Cronin and Russell D. Bush 665–670

An investigation into the efficacy of the Te Pari Patesco knife in providing a bare tip and the relationship between tail length and dag score in unmulesed Merino lambs

J. E. Smith, R. G. Woodgate, C. A. Curnow, D. L. Michael and A. J. Van Burgel 671–674

Using abattoir surveillance and producer surveys to investigate the prevalence and current preventative management of Caseous lymphadenitis in Merino flocks in Australia

R. D. Bush, R. Barnett, I. J. Links and P. A. Windsor 675–679