

Michael Undi, Ph. D.
Animal Scientist

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Biography

I grew up in Kadoma, a small mining- and agriculture-based town in central Zimbabwe. Agriculture in rural areas of Kadoma was mainly integrated crop/livestock, with corn, millets and sorghum as the dominant crops, and cattle and goats as the dominant livestock. Conflicts in integrated crop/livestock systems usually arise from livestock straying onto crop fields and grazing field crops. Consequently, allowing cattle to stray onto crop fields has serious repercussions. As young men whose responsibility it was to keep livestock away from crop fields, we quickly learnt the value of good cattle herding practices. With whole days spent looking after cattle on communal pastures, we had ample opportunity to engage in activities such as hunting, collecting honey, trapping birds, and collecting wild fruits. I have fond memories for these times, and this is probably what directed me towards a career in animal science. I have recently joined NDSU/CGREC as an Animal Scientist and I am looking forward to settling down in Streeter, North Dakota. Having been raised in a small town, I see myself integrating fully into life in Streeter.

Training/Education

Ph.D., Ruminant Nutrition/Forage Utilization, University of Manitoba, Canada – 1995
M.Sc., Ruminant Nutrition/Forage Utilization, University of Saskatchewan, Canada – 1988
B.S.A., Animal Science Major, University of Zambia, Lusaka, Zambia - 1984

Associations

Canadian Society of Animal Science
American Dairy Science Association

Research Interests

Research interests lie mainly in investigating methods to improve livestock performance in grassland-based livestock production systems. Main areas include methods to estimate forage intake by grazing cattle, forage evaluation, and investigating cost-effective supplement delivery methods to grazing animals. Reducing winter feed costs by keeping livestock on pasture during winter is emerging as an important area of research in North Dakota. I intend to investigate innovative methods of reducing winter feed costs.

Research Proposals

Undi, M. et al. Strategic supplementation of beef cows winter grazing corn residues in south central North Dakota.

Undi, M. et al. Estimating animal dry matter intake of baled-grazed, swath-grazed, and stockpiled forage in south central North Dakota.

Reviewer

Canadian Journal of Animal Science; South African Journal of Animal Science; African Journal of Agricultural Research

Recent Publications

Rey, M. R., Rodriguez-Lecompte, J. C., **Undi, M.**, Joseph, T., Morrison, J., Yitbarek, A., Wittenberg, K. M., Tremblay R. and Ominski, K. H. 2015. Efficacy of needle-free injection on antibody production against *Clostridium chauvoei* in beef calves under field conditions. *Can. Vet. J.* 56 (4): 405-407.

Manafiazar, G., Basarab, J., Baron, V., McKeown, L., Rodríguez Doce, R., Swift, M. L., **Undi, M.**, Wittenberg, K. M. and Ominski, K. H. 2015. Effect of post-weaning residual feed intake classification on grazed grass intake and performance in pregnant beef heifers. *Can. J. Anim. Sci.* Published on the web. May 2015. Doi: 10.4141/CJAS-2014-184.

Bernier, J.N., **Undi, M.**, Ominski, K.H., Donohoe, G., Tenuta, M., Flaten, D., Plaizier, J.C., Wittenberg, K.M. 2014. Nitrogen and phosphorus utilization and excretion by beef cows fed a low quality forage diet supplemented with dried distillers' grains with solubles under thermal neutral and prolonged cold conditions. *Anim. Feed Sci. Technol.* 193: 9-20.

Brewin, D. G., **Undi, M.**, Kulshreshtha, S., Wittenberg, K. M., Tenuta, M., Ominski, K. H. 2014. Integration of forage, beef, and hog production systems in Western Canada: An economic assessment. *Agric. Systems.* 127: 1-8.

Rey, M. R., **Undi, M.**, Rodriguez-Lecompte, J. C., Joseph, T., Morrison, J., Yitbarek, A., Wittenberg, K. M., Tremblay, R., Crow, G. H. and Ominski, K. H. 2013. A study of the effectiveness of a needle-free injection device compared with a needle and

syringe used to vaccinate calves against bovine viral diarrhea and infectious bovine rhinotracheitis viruses. *The Vet. J.* 198: 235-238.

Bernier, J. N., **Undi, M.**, Plaizier, J. C., Wittenberg, K. M., Donohoe, G. R. and Ominski, K. H. 2012. Impact of prolonged cold exposure on dry matter intake and enteric methane emissions of beef cows overwintered on low-quality forage diets with and without supplemented wheat and corn dried distillers' grain with solubles. *Can. J. Anim. Sci.* 92: 493-500.

Wilson, C., **Undi, M.**, Tenuta, M., Tremorin, D., Coppi, L., Flaten, D., Wittenberg, K. M., Ominski, K. H. 2011. Utilization of liquid hog manure to fertilize grasslands in southeast Manitoba: Impact of manure application timing and forage harvest strategy on nutrient utilization and accumulation. *Nutr. Cycl. Agroecosyst.* 91: 155-171.

Wilson, C., **Undi, M.**, Tenuta, M., Wittenberg, K. M., Flaten, D., Krause, D. O., Entz, M. H., Holley, R., Ominski, K. H. 2010. Pasture productivity, cattle productivity and metabolic status following fertilization of grassland with liquid hog manure: A three-year study. *Can. J. Anim. Sci.* 90: 233-243.

Undi, M., Ominski, K. H., Wilson, C. and Wittenberg, K. M. 2008. Comparison of techniques for estimation of forage dry matter intake by grazing beef cattle. *Can. J. Anim. Sci.* 88: 693-701.

Stewart, A. A., **Undi, M.**, Ominski, K. H., Wilson, C and Wittenberg, K. M. 2008. Estimation of carbon dioxide production and energy expenditure of grazing cattle by the sulphur hexafluoride (SF₆) tracer gas technique. *Can. J. Anim. Sci.* 88: 651-658.