**REFERRENCES**

Afonso, J.A.B., Ciarlini, P.C., Kuchembuck, M.R.G., Kohayagawa, A., Feltrin, L.P.Z., Ciarlini, L.D.R.P., Laposy, C.B., Mendonca, C.L. and Takahira, R.K. 2002. Neutrophil oxidative metabolism of sheep treated with monensin and experimentally subjected to rumen acidosis. *Brazilian Journal of* Veterinary *Research*, 22:129-134.

Ahuja, A.K., Randhawa, S.S. and Rathor, S.S. 1990. Effect of monensin in ameliorating subacute lactic acidosis in buffalo calves. Acta Veterinaria Brono, 59:171-178.

Aslan, V., Thamsborg, S.M., Jorgensen, R.J. and Basse, A. 1995. Induced acute ruminal acidosis in goats treated with yeast (*Saccharomyces cerevisiae*) and bicarbonate. Acta Veterinaria *Scandinavica*, 36:65-77.

Baldwin, R. L. and Allison, M. J. 1983. Rumen Metabolism. *Journal of Animal Science,* 57(2): 461-477.

### Bartley, E.E. and Brent, B.E. 1984. B vitamins for ruminants. [*Minnesota Nutrient Management Conference*](http://www.google.com.bd/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CC8QFjAA&url=http%3A%2F%2Fnationalhogfarmer.com%2Fenvironmental-stewardship%2Fmanure-management%2F0210-mn-nut-mgmt-conf&ei=OiYzUd69OMLtrQeF9IDADA&usg=AFQjCNFDh5HhfaELcoYwtdQuEvvw9X1BJQ&bvm=bv.43148975,d.bmk)*,* September, 20-21.

Basak, D.N., Span, S. and Chakrabarti, A. 1993. Physicochemical and microbial changes in rumen liquor of experimentally induced lactic acidosis in goats. *Indian Journal of Animal Science*, 63:263-267.

Beauchemin, K. and Penner, G. 2009. New developments in understanding ruminal acidosis in dairy cows. *Tri-State Dairy Nutrition Conference*, pp: 1-12.

Bolton, J. R. and Pass, D.A. 1988. Clinicopathologic principles for veterinary medicine: The alimentary tract. Robinson, W. F. and Huxtable, C. R. R.,Cambridge, Cambridge University Press, pp: 99-121.

Bramley, E., Annison, E. P.F., Browning, G., Cusack, P., Farquharson, B., Little, S. and Nandapi, D. 2007. Ruminal Acidosis – understandings, prevention and treatment: A review for veterinarians and nutritional professionals. Reference Advisory Group on Fermentative Acidosis of Ruminants (RAGFAR): 12-17.

Britton, R. A., and Stock, R.A. 1987. Acidosis, rate of starch digestion and intake. *Oklahoma Agricultural Experiment Station*, pp: 125-137.

Brown, M.S., Krehbiel, C.R., Galyean, M.L., Remmenga, Peters, J.P., Hibbard, B., Robinson, J., Moseley, W.M. 2000. Evaluation of models of acute and subacute acidosis on dry matter intake, ruminal fermentation, blood chemistry, and endocrine profiles of beef steers. *Journal of Animal Science*, 78: 3155–3168.

Cao, G.R., English, P.B., Filippich, L.J. and Inglis, S. 1987. Experimentally induced lactic acidosis in the goat. *Australian Veterinary Journal*, 64: 367-370.

 Carter, R. R., and Grovum, W. L. 1990. A review of the physiological significance of hypertonic body fluids on feed intake and ruminal function: Salivation, motility and microbes. *Journal of Animal Science*, 68: 2811-2832.

Cook, N.B., Nordlund, K.V. and Oetzel, G.R. 2004. Environmental influences on claw horn lesions associated with laminitis and subacute ruminal acidosis in dairy cows. *Journal of Dairy Science*, 87(E): 36- 46.

Counotte, G. H. M., Vant Klooster, A. T., Kuilen, J.V.D and Prins, R.A. 1979. An analysis of the buffer system in the rumen of dairy cattle. *Journal of Animal Science*, 49:1536-1544.

Crichlow, E. C. and Chaplin, R. K. 1985. Ruminal lactic acidosis: Relationship of forestomach motility to nondissociated volatile fatty acids levels. *American* *Journal of Veterinary Research***,** 46(9): 1908-1911.

Department of Livestock Service 2009. Ministry of Fisheries and Livestock. Government of People’s Republic of Bangladesh, Dhaka, Bangladesh.

Divers, T.J. and Peek, S.F. 2008. Diseases of Dairy Cattle: Noninfectious diseases of the gastrointestinsl tract. 2nd ed., Missouri, Saunders, pp:130-199.

Donovan, J. 1997. Subacute acidosis is costing us millions. Hoards Dairyman, September, pp: 666.

Dougherty, R.W., Riley, J.L. and Cook, H.M. 1975. Changes in motility and pH in the digestive tract of Experimentally overfed sheep. *Journal of veterinary Research*, 36:827-829.

Duffield, T., Plaizier, J.C., Fairfield, A., Bagg R. and Vessie, G. 2004. Comparison of techniques for measurement of rumen pH in lactating dairy cows. *Journal of Dairy Science*, 87: 59-66.

Dunlop, R.H. 1972. Pathogenesis of ruminant lactic acidosis. *Advances in Veterinary Science and Comparative Medicine*, 16: 259-302.

Enemark, J.M.D. 2008. The monitoring, prevention and treatment of sub-acute ruminal acidosis (SARA): A review. *Veterinary Journal*, 176: 32-43.

Enemark, J.M.D. and Jorgensen, R.J. 2001. Subclinical rumen acidosis as a cause of reduced appetite in newly calved dairy cows in Denmark: results of a poll among Danish dairy practitioners. *Veterinary Quarterly*, (23): 206–210.

Enemark, J.M.D., Jorgensen, R.J. and Enemark, P.S. 2002. Rumen acidosis with special emphasis on diagnosis aspects of subclinical rumen acidosis: A review. *Veterinarija ir Zootechnika*, 42: 16-29.

Enjalbert, F., Videau, Y., Nicot, M.C. and Troegeler-Meynadier, A. 2008. Effects of induced subacute ruminal acidosis on milk fat content and milk fatty acid profile. *Journal of Animal Physiology and Animal Nutrition*, 92: 284-291.

Fulton, W. R., Klopfenstein, T. J. and Britton, R. A. 1979. Adaptation to high concentrate diets by beef cattle: Adaptation to corn and wheat diets. *Journal of Animal Science*, 49:775-784.

Gakhar, N., Krause, S.L.D.O., Khafipoor, E., Ominski, K. and Plaizier, J.C. 2008. Development of alternate markers for sub acute ruminal acidosis (SARA). *Proceedings of the Western Canadian Dairy Seminar*, (WCDS`08), Alberta, pp: 369-369.

Garret, E.F., Nordlund, K.V., Goodger, W.J. and Oetzel, G.R. 1997. Across-sectional field study investigating the effect of periparturient dietary management on ruminal pH in early lactation dairy cows. *Journal of Dairy Science*, 80 (1): 169.

Garza, J. D. and Owens, F.N. 1989. Quantitative origin of ruminal liquid with various diets and feed intakes. *Oklahoma Agricultural Experiment Station*, 127:84-88.

Glock, R. D. and DeGroot, B.D. 1998. Sudden death of feedlot cattle. *Journal of Animal Science*, 76: 315-319.

Goad, D.W., Goad, C.L. and Nagaraja, T.G. 1998. Ruminal microbial and fermentative changes Associated with Experimentally induced subacute acidosis in steers. *Journal of Animal Science*, 76:234-241.

Gozho, G.N., Plaizier, J.C., Krause, D.O., Kennedy, A.D. and Wittenberg, K.M. 2005. Subacute ruminal acidosis induces ruminal lipopolysaccharide endotoxin release and triggers an inflammatory response. *Journal of Dairy Science*, 88: 1399-1403.

Grove-White, D. 2004. Rumen healthcare in the dairy cow. *In Practice*, 26: 88-95.

Ha, J. K., Emerick, R.J. and Embry, L.B. 1983. In vitro effect of pH variations on rumen fermentation, and in vivo effects of buffers in lambs before and after adaptation to high concentrate diets. *Journal of Animal Science*, 56:698-706.

Hall, M. B. 2005. Ruminal acidosis: beyond the rumen. *Journal of Dairy Science*, 88 (1): 377.

Hall, M.B. and Averhoff, K.S. 2000. The real costs of digestive upset. 37th Florida Dairy Production Conference, Gainesville, pp: 99-104.

Hart, S. P. and Polan, C.E. 1984. Effect of sodium bicarbonate and disodium phosphate on animal performance, ruminal metabolism, digestion, and rate of passage in ruminating calves. *Journal of Dairy Science*, 67:2356-2368.

Horn, G. W., Gordon, J. L., Prigge, E. C. and Owens, F. N. 1979. Dietary buffers and ruminal and blood parameters of subclinical lactic acidosis in steers. *Journal of Animal Science*, 48:683-691.

Howard. J. L. 1981. Ruminal metabolic acidesis. *The Bovine Practitioner*, 16: 44·53.

Huber, T.L. 1971.Effect of acute indigestion on behavioral water volume and osmolality in sheep. *Journal of Veterinary Research*, 32:887-890.

Huntington, G. B. 1988. Acidosis. In: The ruminant animal – digestive physiology and nutrition. Editor Church, D.C., Prentice Hall, Englewood Cliffs, New Jersey, 1988. pp: 474-480.

Kaufmann and Ruhr 1979. Proportions of acids produced in the rumen when pH falls from 7.0. Reprinted from: Rosenberger, Clinical Examination of Cattle, 1979, Paul Parey Scientific Publishers, Berlin and Hamburg.

Kezar, W.W. and Church, D.C. 1979. Ruminal changes during the onset and recovery of lactic acidosis induced in sheep. *Journal of Animal Science*, 49:1161-1167.

Khafipour, E., Shucong, L., Plaizier, J.C. and Krause, D.O. 2009. Rumen microbiome composition determined using two nutritional models of subacute ruminal acidosis. *Applied and Environmental Microbiology*, 75: 7115-7124.

Kleen, J.L., Hooijer, G.A., Rehage, J. and Noordhuizen, J.P.T. 2003. Subacute ruminal acidosis (SARA): A review. *Journal of Veterinary Medicine*, 50: 406-414.

Kleen, J.L., Hooijer, G.A., Rehage, J. and Noordhuizen, J.P.T.M. 2004. Rumenocentesis (rumen puncture): a viable instrument in herd health diagnosis. *German Veterinary Weekly*, 111: 458 – 462.

Koers, W. C., Britton, R., Klopfenstein, T. J. and Woods, W. R. 1976. Ruminal histamine, lactate and animal performance. *Journal of Animal Science*, 43:684-691.

Kolver, E. S. and De Veth, M.J. 2002. Prediction of Ruminal pH from Pasture- Based Diets. *Journal of Dairy Science,* 85: 1255-1266.

 Kolver, E. S. and Muller, L. D. 1998. Evaluation and Application of the Cornell Net Carbohydrate and Protein System for Dairy Cows Fed Diets Based on Pasture. *Journal of Dairy Science,* 81: 2029-2039.

Krause, K.M. and Oetzel, G.R. 2005. Inducing subacute ruminal acidosis in lactating dairy cows. *Journal of Dairy Science*, 88: 3633-3639.

Krause, M.K. and Oetzel, G.R. 2006. Understanding and preventing subacute ruminal acidosis in dairy herds: A review. *Journal of Animal Feed Science and Technology*, 126: 215–236.

Krogh, N. 1959. Studies on Alterations in the rumen fluid of sheep, Especially Concerning the microbial composition, When readily available carbohydrates are added to the food. Acta Veterinaria Scandinavica, 1:74-97.

Lachmann, G. and Sieberth, H. 1980. The determination of the acid-base status in the Erythrocyte and in liver tissue in cattle. *Monatshefte of Veterinary Medicine*, 35, 384-388.

Lean, I. J. and Wade, L. K. 2000. New Approaches to Control of Ruminal Acidosis in Dairy Cattle. *Asian-Australasian Journal of Animal Sciences,*13 (l): 266-269.

Lee, G. J. and McManus, W.R. 1982. Changes in Rumen Fluid Composition and in the Rumen Epithelium when Wheat is introduced to the Diet of Sheep: The Influence of Wheat and Hay Consumption. *Australian Journal* *of Agricultural Research,* 33: 321-333.

Leedle, J.A.Z. 1993. Modulating ruminal fermentation in high-grain fed cattle: The role of Rumensin. In: Scientific Update on Rumensin/Tylan for the Professional Feedlot Consultant. Elanco Animal Health, Indianapolis, pp: 1-24.

Meissner, H.H., Henning, P.H., Horn, C.H., Leeuw, K.J., Hagg, F.M. and Fouche, G. 2010. Ruminal acidosis: a review with detailed reference to the controlling agent *Megasphaera elsdenii* NCIMB 41125. [*South African Journal of Animal Science*](http://www.scielo.org.za/scielo.php?script=sci_serial&pid=0375-1589&lng=en&nrm=iso), 40(2): 0375-1589.

Metkari, S.M., Salabat, A., Rajguru, D.N. and Saleem, M. 2001. Management of experimentally induced lactic acidosis in goats. *Indian Veterinary Journal*, 78:692-694.

Ministry of Fisheries and Livestock 2007. National Livestock Development Policy. Government of People’s Republic of Bangladesh, Dhaka, Bangladesh.

Mohebbi, F., Sajedianfard, M.J., Nazifi, S., Ansari-Lari, M. and Nayyeri, K. 2010. Effect of pectin in ameliorating grain induced digestive upset in sheep: Focus on cation exchange capacity. *Australian Journal of Basic and Applied Science*, 4: 3000-3004.

Mullenax, C. H., Keeler, R.F. and Allison, M.J. 1966. Physiologic Responses of Ruminants to Toxic Factors Extracted from Rumen Bacteria and Rumen Fluid. *American Journal of Veterinary Research,* 27: 857-868.

Nagaraja, T.G. and Titgemeyer, E.C. 2007. Ruminal acidosis in beef cattle: the current microbiological and nutritional outlook. *Journal of Dairy Science*, 90:17-38.

Naylor, J. M., Kronfeld, D. S., Freeman, D. E. and Richardson, D. 1984. The saturable nature of hepatic lactate metabolism in sheep. *Canadian Journal of Animal Science*, 64(1):271-272.

Nocek, J. E.1997. Bovine Acidosis: Implications on Laminitis. *Journal of Dairy Science,* 80(5): 1005-1028.

Nordlund, K.V. 2004. Investigation strategies for laminitis problem herds. *Journal of Dairy Science*, 87: 27-35.

Nordlund, K.V., Garrett, E.F. and Oetzel, G.R. 1995. Herd-based rumenocentesis-a clinical approach to the diagnosis of subacute rumen acidosis. *Compendium on Continuing Education for the Practicing Veterinarian*, 17: 48-56.

 [O'Mara, F.P](http://www.ncbi.nlm.nih.gov/pubmed?term=O%27Mara%20FP%5BAuthor%5D&cauthor=true&cauthor_uid=9361218)., [Stakelum, G.K](http://www.ncbi.nlm.nih.gov/pubmed?term=Stakelum%20GK%5BAuthor%5D&cauthor=true&cauthor_uid=9361218)., [Dillon, P](http://www.ncbi.nlm.nih.gov/pubmed?term=Dillon%20P%5BAuthor%5D&cauthor=true&cauthor_uid=9361218)., [Murphy, J.J](http://www.ncbi.nlm.nih.gov/pubmed?term=Murphy%20JJ%5BAuthor%5D&cauthor=true&cauthor_uid=9361218). and [Rath, M](http://www.ncbi.nlm.nih.gov/pubmed?term=Rath%20M%5BAuthor%5D&cauthor=true&cauthor_uid=9361218).1997. Rumen Fermentation and Nutrient Flows for Cows Fed Grass and Grass Supplemented with Molassed Beet Pulp Pellets. *Journal of Dairy Science,* 80: 2466-2474.

Oetzel, G.R. 2003. Subacute ruminal acidosis in dairy cattle. Journal of Dairy Science, 15: 307 317.

Oetzel, G.R. 2005. Applied aspects of ruminal acidosis induction and prevention. *Journal of Dairy Science*, 88: 377-377.

Owens, F.N., Secrist, D.S., Hill, W.J. and Gill, D.R. 1998. Acidosis in cattle: A review. *Journal of Animal Sciences*, 76:275-286.

Penner, G.B., Beauchemin, K.A. and Mutsvangwa, T. 2007. Severity of ruminal acidosis in primiparous Holstein cows during the periparturient period. *Journal of Dairy Science*, 90: 365-375.

Phillipson, A.l. and Reid, R.S. 1957. Thiamine in the contents of the alimentary tract of sheep. *British Journal of Nutrition*, 11: 27-29.

Phy, T. S. and Provenza, F.D. 1998. Sheep fed grain prefer foods and solutions that attenuate acidosis. *Journal of Animal Science*, 76:954-960.

Plaizier, J.C., Krause, D.O., Gozho, G.N. and McBride, B.W. 2008. Subacute ruminal acidosis in dairy cows: the physiological causes, incidence and consequences. *Veterinary Journal*, 176: 21-31.

Radostits, O. M., Blood, D.C. and Gay, C.C. 1994. Acute carbohydrate engorgement of ruminants (rumen overload). In: Veterinary Medicine, 8th ed., Saunders, Philadelphia, pp: 262-269.

Radostits, O.M., Gay, C.C., Blood, D.C., Hinchcliff, K.W. and Constable, P.D. 2006. Diseases of the alimentary tract. In Veterinary Medicine, 10th ed., Saunders, Edinburg, pp: 169-250.

Robert, P., Allen I., Arieff, Willium, L. and Virginia, C. 1982. Treatment of Lactic acidosis with Dichloroacetate in Dogs. *Journal of Clinical Investigation*, 70(4):853-862.

Russell, J. B. and Hino, T. 1985. Regulation of Lactate Production in *Streptococcus bovis*: A Spiraling Effect That Contributes to Rumen Acidosis. *Journal of Dairy Science,* 68: 1712-1721.

Russell, J. B., R., Young, A.W. and Jorgensen, N.A. 1980. Effect of sodium bicarbonate and limestone additions to high grain diets on feedlot performance and ruminal and fecal parameters in finishing steers. *Journal of Animal Science*, 51(4): 996.

Sarma, P.K. and Ahmed, J.U. 2011. An economic study of small scale cattle fattening enterprise of Rajbari district. *Journal of Bangladesh Agricultural University*, 9(1):141-146.

Sato, S., Mizuguchi, H., Ito, K., Ikuta, K., Kimura, A. and Okada, K. 2012. Development and testing of a radio transmission pH measurement system for continuous monitoring of ruminal pH in cows. *Preventive* Veterinary Medicine, 103:274–279.

Schwartzkopf-Gensewein, K. S., Beauchemin, K.S., Gibb, D.J., Crews, D.H., Hickman, D.D., Streeter, M. and McAllister, T.A. 2003. Effect of bunk management on feeding behavior, ruminal acidosis and performance of feedlot cattle: a review. *Journal of Animal Science*, 81(2):49-58.

Scott, D. 1975. Changes in mineral, water and acid-base balance associated with feeding and diet. In: McDonald, I.W. and Warner, A.C.I., Digestion and Metabolism in the Ruminant, University of New England Printing Unit, Armidale, Australia, pp: 205-215.

 Seal, C. J. and Parker, D. S. 1994. Effect of intraruminal propionic acid infusion on metabolism of mesenteric- and portal-drained viscera in growing steers fed a forage diet: Volatile fatty acids, glucose, and lactate. *Journal of Animal Science*, 72:1325-1334.

Shaver, R.D. 2005. Feeding to minimize acidosis and laminitis in dairy cows. *Proceedings of the Seventh Western Dairy Management Conference*, (WDMC`05), Reno, NV., pp:157-166.

Slyter, L.L. 1976. Influence of acidosis on rumen function. *Journal of Animal Science*, 43: 910-929.

Solorzano, L. C., Armentano, L.E., Grummer, R.R. and Dentine, M.R. 1989. Effects of sodium bicarbonate or sodium sesquicarbonate on lactating Holsteins fed a high grain diet. *Journal of Dairy Science,* 72:453-461.

Stock, R. and Britton, R. 1993. Acidosis in feedlot cattle. In: Secondary benefits from feeding Rumensin, Parrott, C. 1993, In: Scientific Update on Rumensin/Tylan for the Professional Feedlot Consultant, Elanco Animal Health, Indianapolis, IN., pp: 1-13.

Stock, R. and Britton, R. 2002. Acidosis. In: Cow-Calf Management Guide-Cattle Producers’ Library, 2nd ed., Western Beef Resource Committee: 138-167.

Stone, W.C. 1999. The effect of subclinical rumen acidosis on milk components. *Proceedings Cornell Nutrition Conference for Feed Manufacturers*, (CNCFM`99), Cornell University, Ithaca, New York, pp: 40-46.

Stone, W.C. 2004. Nutritional approaches to minimize subacute ruminal acidosis and laminitis in dairy cattle. *Journal of Dairy Science*, 87: 13-26.

Streeve, J.E.and Eolwin, E. E. 1974. Thiaminase producing strains of C. sporogenes associated with outbreaks of cerebrocortical necrosis. *Veterinary Record*, 94: 330-333.

 Tabaru, H., Ikeda, K., Kadota, E., Murakami, Y., Yamada, H., Sasaki, N. and Takeuchi, A. 1990. Effects of osmolality on water, electrolytes and VFA absorption from the isolated ruminoreticulum in the cow. *Japanese Journal of Veterinary Science*, 52: 91.

Tajik, J. and Nazifi, S. 2011. Diagnosis of subacute ruminal acidosis: A review. *Asian Journal of*

 *Animal Sciences*, 5(2): 80-90.

Tajik, J., Nadalian, M.G., Raoofi, A., Mohammadi, G.R. and Bahonar, A.R. 2009. Prevalence of subacute ruminal acidosis in some dairy herds of Khorasan Razavi province, northeast of Iran. *Iranian Journal of Veterinary Research*, 10: 28-32.

Tremere, A. W., Merrill, W.G. and Loosli, J.K.1968. Adaptation to high concentrate feeding as related to acidosis and digestive disturbances in dairy heifers. *Journal of Dairy Science*, 51(7): 1065-1072.

Tufani, N.A., Makhdoomi, D.M. and Hafiz, A. 2013. Rumen acidosis in small ruminants and its Therapeutic Management. *Iranian Journal of Applied Animal Science*, 3(1): 19-24.

Underwood, W. J. 1992. Rumen Lactic Acidosis, Clinical Signs, diagnosis, treatment, and prevention. *Food animal compendium,* 14(9): 1265-1270.

Vermunt, J. J. and Greenough, P. R. 1994. Predisposing factors of laminitis in cattle. *British Veterinary Journal*, 150:151-164.

Wales, W. J., Williams, Y. J. and Doyle, P.T. 2001. Effect of grain supplementation and the provision of chemical or physical fibre on marginal milk production responses of cows grazing perennial ryegrass pastures. *Australian Journal* *of Experimental Agriculture,* 41: 465-471.

Wheeler, W. E. 1980. Gastrointestinal tract pH environment and the influence of buffering materials on the performance of ruminants. *Journal of Animal Science*, 51:224-235.

Zebeli, Q., Dijkstra, J., Tafaj, M., Steingass, H., Ametaj, B.N. and Drochner, W. 2008. Modeling the adequacy of dietary fiber in dairy cows, based on the responses of ruminal pH and milk fat production to composition of the diet. *Journal of Dairy Science*, 91: 2046-2066.

Zinn, R. A. 1991. Comparative feeding value of steam-flaked corn and sorghum in finishing diets supplemented with or without sodium bicarbonate. *Journal of Animal Science*, 69:905 916.