

Turkey Coronavirus

Selected Bibliography compiled by James S. Guy, DVM, PhD
Department of Microbiology, Pathology, and Parasitology
North Carolina State University College of Veterinary Medicine

Adams, N.R., and M.S. Hofstad. 1971. Isolation of transmissible enteritis agent of turkeys in avian embryos. *Avian Dis* 15:426–433.

Adams, N.R., R.A. Ball, and M.S. Hofstad. 1970. Intestinal lesions in transmissible enteritis of turkeys. *Avian Dis* 14:392–399.

Adams, N.R., R.A. Ball, C.L. Annis, and M.S. Hofstad. 1972. Ultrastructural changes in the intestines of turkey poults and embryos affected with transmissible enteritis. *J Comp Pathol* 82:187–192.

Barnes, H.J. & Guy, J.S. (1997). Poult enteritis-mortality syndrome ("spiking mortality") of turkeys. In: B.W. Calnek, H.J. Barnes, C.W. Beard, L.R. McDougald and Y.M. Saif (Eds), *Diseases of Poultry*, 10th ed., pp. 1025-1031. Ames, Iowa State University Press.

Breslin, J. J., L. G. Smith, F. J. Fuller, and J. S. Guy. 1999a. Sequence analysis of the matrix/nucleocapsid gene region of turkey coronavirus. *Intervirology* 42:22-29.

Breslin, J. J., L. G. Smith, F. J. Fuller, and J. S. Guy. 1999b. Sequence analysis of the turkey coronavirus nucleocapsid protein gene and 3' untranslated region identifies the virus as a close relative of infectious bronchitis virus. *Virus Res* 65:187-193.

Breslin, J. J., L. G. Smith, H. J. Barnes, and J. S. Guy. 2000. Comparison of virus isolation, immunohistochemistry, and reverse transcriptase-polymerase chain reaction procedures for detection of turkey coronavirus. *Avian Dis* 44:624-631.

Breslin, J. J., L. G. Smith, and J. S. Guy. 2001. Baculovirus expression of turkey coronavirus nucleocapsid protein. *Avian Dis*. In Press.

Cavanagh, D., Brian, D. A., Brinton, M. A., Eujanés, L., Holmes, K. V., Horzinek, M. C., Lai, M. M. C., Laude, H., Plagemann, P. G. W., Siddell, S. G., Spann, W., Taguchi, F. & Talbot, P. J. 1997. *Nidovirales*: a new order comprising *Coronaviridae* and *Arteriviridae*. *Arch Virol* 142:629-633.

Dea, S., G. Marsolais, J. Beaubien, and R. Ruppanner. 1986. Coronaviruses associated with outbreaks of transmissible enteritis of turkeys in Quebec: hemagglutination properties and cell cultivation. *Avian Dis* 30:319–326.

- Dea, S., S. Garzon, and P. Tijssen. 1989. Isolation and trypsin-enhanced propagation of turkey enteric (bluecomb) coronaviruses in a continuous human rectal adenocarcinoma cell line. *Am J Vet Res* 50:1310–1318.
- Dea, S., A. J. Verbeek, and P. Tijssen, P. 1990. Antigenic and genomic relationships among turkey and bovine enteric coronaviruses. *J Virol* 64:3112-3118.
- Dea, S., A. Verbeek, and P. Tijssen. 1991. Transmissible enteritis of turkeys: experimental inoculation studies with tissue-culture-adapted turkey and bovine coronaviruses. *Avian Dis* 35:767-777.
- Deshmukh, D.R., and B.S. Pomeroy. 1974. Physicochemical characterization of a bluecomb coronavirus of turkeys. *Am J Vet Res* 35:1549–1552.
- Deshmukh, D.R., C.T. Larsen, S.K. Dutta, and B.S. Pomeroy. 1969. Characterization of pathogenic filtrate and viruses isolated from turkeys with bluecomb. *Am J Vet Res* 30:1019–1025.
- Deshmukh, D.R., C.T. Larsen, and B.S. Pomeroy. 1973. Survival of bluecomb agent in embryonating turkey eggs and cell cultures. *Am J Vet Res* 34:673–675.
- Dziuk, H.E., G.E. Duke, and O.A. Evanson. 1970. Milk replacer, electrolytes, and glucose for treating bluecomb in turkeys. *Poult Sci* 49:226–229.
- Enjuanes, L., D. Brian, D. Cavanagh, K. Holmes, M. Lai, H. Laude, P. Masters, P. Rottier, S. Siddell, W. Spaan, F. Taguchi, and P. Talbot. Coronaviridae. In: *Virus taxonomy: seventh report of the International Committee on Taxonomy of Viruses*. M. Regenmortel, C. Fauquet, D. Bishop, E. Carstens, M. Estes, S. Lemon, J. Maniloff, M. Mayo, D. McGeoch, C. Pringle and R. B. Wickner. Academic Press, San Diego. pp. 835-849. 2000.
- Gonder, E., B.L. Patel, and B.S. Pomeroy. 1976. Scanning electron, light, and immunofluorescent microscopy of coronaviral enteritis of turkeys (bluecomb). *Am J Vet Res* 37:1435–1439.
- Guy, J. S. 1998. New methods for diagnosis of turkey coronavirus infections. In: *Proc 49th North Central Avian Dis Conf, Indianapolis, Indiana*, pp. 8-10.
- Guy, J. S. 2000. Turkey coronavirus is more closely related to avian infectious bronchitis virus than to mammalian coronaviruses: a review. *Avian Path* 29:207-212.
- Guy, J. S., H. J. Barnes, L. G. Smith, and J. Breslin. 1997. Antigenic characterization of a turkey coronavirus identified in poult enteritis and mortality syndrome-affected turkeys. *Avian Dis* 41:583-590.

- Guy, J. S., H. J. Barnes, L. G. Smith, and J. J. Breslin. 1999. Experimental infection of specific-pathogen-free chickens with turkey coronavirus. Proc 48th Western Poultry Disease Conference, Vancouver, B. C. pp. 91-92.
- Guy, J. S., L. G. Smith, J. J. Breslin, J. P. Vaillancourt, and H. J. Barnes. 2000. High mortality and growth depression experimentally produced in young turkeys by dual infection with enteropathogenic *Escherichia coli* and turkey coronavirus. *Avian Dis* 44:105-113.
- Hofstad, M.S., N. Adams, and M. L. Frey. 1969. Studies on a filterable agent associated with infectious enteritis (bluecomb) of turkeys. *Avian Dis* 13:386–393.
- Holmes, K. V. and M. M. C. Lai. 1996. Coronaviridae. In: B. N. Fields, D. M. Knipe, and P. M. Howly (eds.), *Fundamental Virology*, 3rd ed., Vol. 1. Lippencott-Raven Publishers, Philadelphia, pp. 1075-1093.
- Hooper, T. A. and J. S. Guy. 1998. Identification of turkey coronavirus infections in commercial turkey flocks. Proc. 47th Western Poult Dis Conf. Sacramento, CA, pg. 42.
- Ismail, M. M., K. O. Cho, L. A. Ward, L. J. Saif, and Y. M. Saif. 2001. Experimental bovine coronavirus in turkey poults and young chickens. *Avian Dis*. In press.
- Lai, M. M. C. & Cavanagh, D. (1997). The molecular biology of coronaviruses. *Advances in Virus Research*, 48, 1-100.
- Larsen, C.T. 1979. The etiology of bluecomb disease of turkeys. PhD thesis. University of Minnesota, Minneapolis-St. Paul.
- Loa, C. C., T. L. Lin, C. C. Wu, T. A. Bryan, H. L. Thacker, T. Hooper, and D. Schrader. 2000. Detection of antibody to turkey coronavirus by antibody-capture enzyme-linked immunosorbent assay utilizing infectious bronchitis virus antigen. *Avian Dis* 44:498-506.
- Nagaraja, K.V., and B.S. Pomeroy. 1978. Secretory antibodies against turkey coronaviral enteritis. *Am J Vet Res* 39:1463–1465.
- Nagaraja, K.V., and B.S. Pomeroy. 1980a. Cell-mediated immunity against turkey coronaviral enteritis (bluecomb). *Am J Vet Res* 41:915–917.
- Nagaraja, K.V., and B.S. Pomeroy. 1980b. Immunofluorescent studies on localization of secretory immunoglobulins in the intestines of turkeys recovered from turkey coronaviral enteritis. *Am J Vet Res* 41:1283–1284.
- Nagaraja, K. V. and B. S. Pomeroy. 1997. Coronaviral enteritis of turkeys (bluecomb disease). In: *Diseases of Poultry*, 10th ed. B. W. Calnek, H. J. Barnes, C. W. Beard, L. R. McDougald and Y. M. Saif, eds. Iowa State University Press, Ames. pp. 686-692.

- Naqi, S. A. 1993. Coronaviral enteritis of turkeys. In: Virus infections of birds. J. B. McFerran and M. S. McNulty, eds. Elsevier Science Publishers, New York. Pp. 277-281.
- Naqi, S.A., C.F. Hall, and D.H. Lewis. 1971. The intestinal microflora of turkeys: Comparison of apparently healthy and bluecomb-infected turkey poults. *Avian Dis* 15:14–21.
- Naqi, S.A., B. Panigrahy, and C.F. Hall. 1972. Bursa of Fabricius, a source of bluecomb infectious agent. *Avian Dis* 16:937–939.
- Panigrahy, B., S.A. Naqi, and C.F. Hall. 1973. Isolation and characterization of viruses associated with transmissible enteritis (bluecomb) of turkeys. *Avian Dis* 17:430–438.
- Patel, B.L., D.R. Deshmukh, and B.S. Pomeroy. 1975. Fluorescent antibody test for rapid diagnosis of coronaviral enteritis of turkeys (bluecomb). *Am J Vet Res* 36:1265–1267.
- Patel, B.L., B.S. Pomeroy, E. Gonder, and C.E. Cronkite. 1976. Indirect fluorescent antibody test for the diagnosis of coronaviral enteritis of turkeys (bluecomb). *Am J Vet Res* 37:1111–1112.
- Patel, B.L., E. Gonder, and B.S. Pomeroy. 1977. Detection of turkey coronaviral enteritis (bluecomb) in field epornithics, using the direct and indirect fluorescent antibody tests. *Am J Vet Res* 38:1407–1411.
- Peterson, E.H., and T.A. Hymas. 1951. Antibiotics in the treatment of unfamiliar turkey disease. *Poult Sci* 30:466–468.
- Pomeroy, B.S., and J.M. Sieburth. 1953. Bluecomb disease of turkeys. *Proc 90th Annu Meet Am Vet Med Assoc*, pp. 321–328.
- Pomeroy, B.S. C.T. Larsen, D.R. Deshmukh, and B.L. Patel. 1975. Immunity to transmissible (coronaviral) enteritis of turkeys (bluecomb). *Am J Vet Res* 36:553–555.
- Pomeroy, K.A., B.L. Patel, C.T. Larsen, and B.S. Pomeroy. 1978. Combined immunofluorescence and transmission electron microscopic studies of sequential intestinal samples from turkey embryos and poults infected with turkey enteritis coronavirus. *Am J Vet Res* 39:1348–1354.
- Reynolds, D., and B. S. Pomeroy. 1989. Enteric viruses. In H. G. Purchase, L. H. Arp, C. H. Domermuth, and J. E. Pearson (eds.). *Isolation and identification of avian pathogens*. American Association of Avian Pathologists, Kennett Square, PA, pp. 128-134.
- Ritchie, A.E., D.R. Deshmukh, C.T. Larsen, and B.S. Pomeroy. 1973. Electron microscopy of coronavirus-like particles characteristic of turkey bluecomb disease. *Avian Dis* 17:546–558.
- Rives, D. V. and D. B. Crumpler. 1998. Effect of turkey coronavirus infection on commercial turkey flock performance. *Proc Am Vet Med Assoc Annual Convention*, July 28, 1998, Baltimore. Pg. 189.

Robb, J.A. & Bond, C.W. (1979). *Coronaviridae*. In: H. Fraenkel-Conrat and R.R. Wagner (Eds), *Comprehensive Virology*, pp. 193-247. Vol. 14. New York, Plenum Press.

Siddell, S. G. 1995. The Coronaviridae: an introduction. In: *Coronaviridae*, S. Siddell, ed., Plenum Press, Inc. New York, pp. 1-9.

Sieburth, J.M., and E.P. Johnson. 1957. Transmissible enteritis of turkeys (bluecomb disease). I. Preliminary studies. *Poult Sci* 36:256–261.

Sieburth, J.M., and B.S. Pomeroy. 1956. Bluecomb disease of turkeys. II. Antibiotic treatment of poults. *J Am Vet Med Assoc* 128:509–513.

Stephensen, C.B., D. B. Casebolt, and N. N. Gangopadhyay 1999. Phylogenetic analysis of a highly conserved region of the polymerase gene from eleven coronaviruses and development of a consensus polymerase chain reaction assay. *Virus Res* 60:181-189.

Sturman, L.S. & Holmes, K.V. (1983). The molecular biology of coronaviruses. *Advances in Virus Research*, 28, 35-112.

Truscott, R.B. 1968. Transmissible enteritis of turkeys - disease reproduction. *Avian Dis* 12:239–245.

Tumlin, J.T., and B.S. Pomeroy. 1958. Bluecomb disease of turkeys. V. Preliminary studies on parental immunity and serum neutralization. *Am J Vet Res* 19:725–728.

Tumlin, J.T., B.S. Pomeroy, and R.K. Lindorfer. 1957. Bluecomb disease of turkeys. IV. Demonstration of a filterable agent. *J Am Vet Med Assoc* 130:360–365.

Verbeek, A., S. Dea, and P. Tijssen, P. 1991. Genomic relationship between turkey and bovine enteric coronaviruses identified by hybridization with BCV or TCOV specific cDNA probes. *Arch Virol* 121:199-211.

Verbeek, A. and P. Tijssen, P. 1991. Sequence analysis of the turkey enteric coronavirus nucleocapsid and membrane protein genes: a close genomic relationship with bovine coronavirus. *J Gen Virol* 72:1659-66.

Watson, D. W., J. S. Guy, and S. M. Stringham. 2000. Limited transmission of turkey coronavirus in young turkeys by adult *Alphitobius diaperinus* (Coleoptera: Tenebrionidae). *J Med Entomol* 37:480-483.

Wege, H., Siddell, S. & ter Meulen, V. 1982. The biology and pathogenesis of coronaviruses. *Current Topics Microbiol Immunol* 99:165-200.