

7 LITERATURVERZEICHNIS

- Abplanalp, H. (1974): Inbreeding as a tool for poultry improvement. Proceedings of the 1st World Congress on Genetics Applied to Livestock Production, Madrid, Spanien, Vol. 1, 897-908.
- Abplanalp, H. (1979): Selection response in inbred lines of White Leghorn Chickens. In: Eisen, E.J., Goodman, M.M., Namkoong, G. and Weir, B.S. (eds): Proceedings of the second international conference on quantitative genetics. Sunderland, Massachusetts: Sinauer Associates, Inc. Publishers, 360-378.
- Abplanalp, H. (1992): Inbred lines as genetic resources of chickens. Poultry Science Review 4, 29-39.
- Abplanalp, H. and Woodard, A.E. (1967): Inbreeding effects under continued sib-mating in turkeys. Poultry Science 46, 1225-1226.
- Alhussein, J. und Matthes, H.-D. (2000): Verifizierung der Pedigrees von Fjäll-Rindern mit Hilfe der DNA-Mikrosatellitenanalyse. Züchtungskunde 72, 81-87.
- Ameli, H., Flock, D.K. and Glodek, P. (1991): Cumulative inbreeding in commercial White Leghorn lines under long-term reciprocal recurrent selection. British Poultry Science 32, 439-449.
- Asmussen, M.A. and Clegg, M.T. (1985): Multiallelic restriction fragment polymorphisms in genetic counseling: population genetic considerations. Human Heredity 35 (3), 129-142.
- Barker, J.S.F., Moore, S.S., Hetzel, D.J.S., Evans, D., Tan, S.G. and Byrne, K. (1997): Genetic diversity of Asian water buffalo (*Bubalus bubalus*): microsatellite variation and a comparison with protein-coding loci. Animal Genetics 28, 103-115.
- Beçak, M.L., Beçak, W., Roberts, F.L., Shoffner, R.N. and Volpe, E.P. (eds) (1971): Chromosome atlas: fish, amphibians, reptiles and birds. Vol. 1. New York: Springer.
- Beckmann, J.S. and Weber, J.L. (1992): Survey of human and rat microsatellites. Genomics 12, 627-631.
- Bierne, N., Launey, S., Naciri-Graven, Y. and Bonhomme, F. (1998): Early effect of inbreeding as revealed by microsatellite analyses on *Ostrea edulis* larvae. Genetics 148 (4), 1893-1906.
- Bitgood, J.J. and Somes, R.G.Jr. (1990): Linkage relationships and gene mapping. In: Crawford, R.D. (ed): Poultry Breeding and Genetics. New York: Elsevier. S. 469-495.
- Bloom, S.E. (1981): Detection of normal and aberrant chromosomes in chicken embryos and in tumor cells. Poultry Science 60, 1355-1361.

- Bloom, S.E., Delany, M.E. and Muscarella, D.E. (1993): Constant and variable features of avian chromosomes. In: Etches, R.J. and Gibbins, A.M.V. (eds): Manipulation of the Avian Genome. Boca Raton: CRC Press Inc., 39-59.
- Botstein, D., White, R.L., Skolnick, M. and Davis, R.W. (1980): Construction of a genetic linkage map in man using restriction fragment length polymorphisms. *American Journal of Human Genetics* 32, 314–331.
- Bowcock, A.M., Ruiz-Linares, A., Tomfohrde, J., Minch, E., Kidd, J.R. and Cavalli-Sforza, L.L. (1994): High resolution of human evolutionary trees with polymorphic microsatellites. *Nature London* 368, 455-457.
- Brandsch, H. und Büchel, H. (1967): Zucht und Vererbung des Geflügels, Wirtschaftsgeflügel: Zucht, Haltung, Fütterung. Berlin: VEB Deutscher Landwirtschaftsverlag.
- Brant, J.W.A. (1952): A review of literature on chromosome studies of the fowl. *Poultry Science* 31: 409-417.
- Brockmann, G.A. and Langhammer, M. (1998): Characterization of small populations with microsatellite markers on mouse chromosome 11. *Acta Theriologica, Suppl.* 5, 171-177.
- Bruford, M.W., Cheesman, D.J., Coote, T., Green, H.A.A., Haines, S.A., O'Ryan, C. and Williams, T.R. (1996): Microsatellites and their application to conservation genetics. In: Smith, T.B. and Wayne, R.K. (eds): Molecular genetic approaches in conservation. Oxford University Press, 278-297.
- Bruford, M.W. and Wayne, R.K. (1993): Microsatellites and their application to population genetic studies. *Journal of Current Opinion in Genetics and Development* 3, 939-943.
- Bruzzone, A., Santucci, F., Pilla, F. and Hewitt, G.M. (2000): Microsatellite variation across chromosome 20 in sheep: implications for detecting selection at MHC linked microsatellites. In: Proceedings of the 27th International Conference on Animal Genetics, Minnesota, USA, 22-26th July 2000, p. 28.
- Bryant, E.H., Backus, V.L., Clark, M.E. and Reed, D.H. (1999): Experimental tests of captive breeding for endangered species. *Conservation Biology* 13 (6), 1487-1496.
- Buchanan, F.C., Littlejohn, R.P., Galloway, S.M. and Crawford, A.M. (1993): Microsatellites and associated repetitive elements in the sheep genome. *Mammalian Genome* 4 (5), 258-264.
- Bumstead, N., Messer, L.I. and Greenwood, N.G. (1987): Use of *ev* loci as a measure of inbreeding in domestic fowls. *British Poultry Science* 28 (4), 717-725.
- Bumstead, N. and Palyga, J. (1992): A preliminary linkage map of the chicken genome. *Genomics* 13, 690-697.

Burke, T., Hanotte, O. and Van Pijlen, I. (1996): Minisatellite analysis in conservation genetics. In: Smith, T.B. and Wayne, R.K. (eds): Molecular genetic approaches in conservation. Oxford University Press, 251-277.

Caetano-Anollés, G., Bassam, B.J. and Gresshoff, P.M. (1991): DNA amplification fingerprinting using very short arbitrary oligonucleotide primers. *Biotechnology* 9, 553-557.

Cahaner, A., (1984): Effects of inbreeding on production and reproduction of meat-type chickens. Proceedings XVII-th World's Poultry Congress, Helsinki, Finland, 143-145.

Cahaner, A., Smith, E.J., Swenson, S. and Lamont, S.J. (1996): Associations of individual genomic heterozygosity, estimated by molecular fingerprinting, and of dam major histocompatibility complex with growth and egg production traits in layer chickens. *Poultry Science* 75, 1463-1467.

Callen, D.F., Thompson, A.D., Shen, Y., Phillips, H.A., Richards, R.I., Mulley, J.C. and Sutherland, G.R. (1993): Incidence and origin of "null" alleles in the (AC)_n microsatellite markers. *American Journal of Human Genetics* 52, 922-927.

Cañon, J., Checa, M.L., Carleos, C., Vega-Pla, J.L., Vallejo, M. and Dunner, S. (2000): The genetic structure of Spanish Celtic horse breeds inferred from microsatellite data. *Animal Genetics* 31, 39-48.

Charlesworth, D. and Charlesworth, B. (1987): Inbreeding depression and its evolutionary consequences. *Annual Review of Ecology and Systematics* 18, 237-268.

Cheng, H.H. (1997): Mapping the chicken genome. *Poultry Science* 76, 1101-1107.

Cheng, H.H. and Crittenden, L.B. (1994): Microsatellite markers for genetic mapping in the chicken. *Poultry Science* 73, 539-546.

Cheng, H.H., Levin, I., Vallejo, R.L., Khatib, H., Dodgson, J.B., Crittenden, L.B. and Hillel, J. (1995): Development of a genetic map of the chicken with markers of high utility. *Poultry Science* 74, 1855-1874.

Christensen, K., Fredholm, M., Winterø, A.K., Jørgensen, J.N. and Andersen, S. (1996): Joint effect of 21 marker loci and effect of realized inbreeding on growth in pigs. *Animal Science* 62, 541-546.

Coltman, D.W., Pilkington, J.G., Smith, J.A. and Pemberton, J.M. (1999): Parasite-mediated selection against inbred Soay sheep in a free-living island population. *Evolution* 53 (4), 1259-1267.

Crawford, A.M., Buchanan, F.C. and Swarbrick, P.A. (1991): The use of dinucleotide repeats or microsatellites as genetic markers in domestic animals. *Proceedings of the New Zealand Society of Animal Production* 51, 79-83.

- Crawford, A.M., Dodds, K.G., Ede, A.J., Pierson, C.A., Montgomery, G.W., Garmonsway, H.G., Beattie, A.E., Davies, K., Maddox, J.F., Kappes, S.W., Stone, R.T., Nguyen, T.C., Penty, J.M., Lord, E.A., Broom, J.E., Buitkamp, J., Schwaiger, W., Epplen, J.T., Matthew, P., Matthews, M.E., Hulme, D.J., Beh, K.J., McDraw, R.A. and Beattie, C.W. (1995): An autosomal genetic linkage map of the sheep genome. *Genetics* 140, 703-724.
- Crittenden, L.B., Provencher, L., Santangelo, L., Levin, I., Abplanalp, H., Briles, R.W., Briles, W.E. and Dodgson, J.B. (1993): Characterization of a red jungle fowl by White Leghorn backcross reference population for molecular mapping of the chicken genome. *Poultry Science* 72, 334-348.
- Crooijmans, R.P.M.A., Groen, A.F., Van Kampen, A.J.A., van der Beek, S., van der Poel, J.J. and Groenen, M.A.M. (1996a): Microsatellite polymorphism in commercial broiler and layer lines estimated using pooled blood samples. *Poultry Science* 75, 904-909.
- Crooijmans, R.P.M.A., van der Poel, J.J. and Groenen, M.A.M. (1995): Functional genes mapped on the chicken genome. *Animal Genetics* 26, 73-78.
- Crooijmans, R.P.M.A., van Kampen, A.J.A., van der Poel, J.J. and Groenen, M.A.M. (1994): New microsatellite markers on the linkage map of the chicken genome. *The Journal of Heredity* 85, 410-413.
- Crooijmans, R.P.M.A., van Oers, P.A.M., Strijk, J.A., van der Poel, J.J. and Groenen, M.A.M. (1996b): Preliminary linkage map of the chicken (*Gallus domesticus*) genome based on microsatellite markers: 77 new markers mapped. *Poultry Science* 75, 746-754.
- Da, Y., VanRaden, P.M., Li, N., Beattie, C.W., Wu, C. and Schook, L.B. (1998): Designs of reference families for the construction of genetic linkage maps. *Animal Biotechnology* 9 (3), 205-228.
- Dib, C., Fauré, S., Fizames, C., Samson, D., Drouot, N., Vignal, A., Millasseau, P., Marc, S., Hazan, J., Seboun, E., Lathrop, M., Gyapay, G., Morissette, J. and Weissenbach, J. (1996): A comprehensive genetic map of the human genome based on 5264 microsatellites. *Nature* 380, 152-154.
- Dietrich, W.F., Miller, J., Steen, R., Merchant, M.A., Damron-Boles, D., Husain, Z., Dredge, R., Daly, M.J., Ingalls, K.A., O'Connor, T.J., Evans, C.A., DeAngelis, M.M., Levinson, D.M., Kruglyak, L., Goodman, N., Copeland, N.G., Jenkins, N.A., Hawkins, T.L., Stein, L., Page, D.C. and Lander, E.S. (1996): A comprehensive genetic map of the mouse genome. *Nature* 380, 149-152.
- Dittmann, C. (1969): Der Einfluß von Inzucht auf einige Leistungsergebnisse beim Huhn sowie ein Beitrag über den genealogischen Aufbau, die Höhe der Inzuchtkoeffizienten und bestimmte Merkmale bei den New-Hampshire-Zuchttieren der LVSt-Blumberg. Berlin, Humboldt-Universität, Sektion Tierproduktion und Veterinärmedizin, Diplom

- Dodgson, J.B., Cheng, H.H. and Okimoto, R. (1997). DNA marker technology: a revolution in animal genetics. *Poultry Science* 76, 1108-1114.
- Dominguez-Steglich, M., Meng, G., Bettecken, T., Müller, C.R. and Schmid, M. (1990): The dystrophin gene is autosomally located on a microchromosome in chicken. *Genomics* 8 (3), 536-540.
- Dunner, S., Checa, M.L., Gutierrez, J.P., Martin, J.P. and Cañon, J. (1998): Genetic analysis and management in small populations: the Asturcon pony as an example. *Genetics Selection Evolution* 30 (4), 397-405.
- Dunnington, E.A., Gal, O., Plotsky, Y., Haberfeld, A., Kirk, T., Goldberg, A., Lavi, U., Cahaner, A., Siegel, P.B. and Hillel, J. (1990): DNA fingerprints of chickens selected for high and low body weight for 31 generations. *Animal Genetics* 21, 247-257.
- Dunnington, E.A., Gal, O., Siegel, P.B., Haberfeld, A., Cahaner, A., Lavi, U., Plotsky, Y. and Hillel, J. (1991): Desoxyribonucleic acid fingerprint comparisons between selected populations of chickens. *Poultry Science* 70, 463-467.
- Dunnington, E.A., Haberfeld, A., Stallard, L.C, Siegel, P.B. and Hillel, J. (1992): Desoxyribonucleic acid fingerprint bands linked to loci coding for quantitative traits in chickens. *Poultry Science* 71, 1251-1258.
- Dunnington, E.A., Stallard, L.C., Hillel, J. and Siegel, P.B. (1994): Genetic diversity among commercial chicken populations estimated from DNA-Fingerprints. *Poultry Science* 73, 1218-1225.
- Falconer, D.S. and Mackay, T.F.C. (1996): Introduction to quantitative genetics. Fourth Edition. Essex: Longman.
- Feng, X.P., Kuhnlein, U., Aggrey, S.E., Gavora, J.S. and Zadworny, D. (1997): Trait association of genetic markers in the growth hormone and the growth hormone receptor gene in a White Leghorn strain. *Poultry Science* 76, 1770-1775.
- Feng, X.P., Kuhnlein, U., Fairfull, R.W., Aggrey, S.E., Yao J. and Zadworny, D. (1998): A genetic marker in the growth hormone receptor gene associated with body weight in chickens. *The Journal of heredity* 89 (4), 355-359.
- Fernández, J. and Toro, M.A. (1999): The use of mathematical programming to control inbreeding in selection schemes. *Journal of Animal Breeding and Genetics* 116 (6), 447-466.
- Fillon, V., Morisson, M., Zoorob, R., Auffray, C., Douaire, M., Gellin, J. and Vignal, A. (1998): Identification of 16 chicken microchromosomes by molecular markers using two-colour fluorescence *in situ* hybridization (FISH). *Chromosome Research* 6 (4), 307-313.

- Flock, D.K., Ameli, H. and Glodek, P. (1991): Inbreeding and heterosis effects on quantitative traits in a White Leghorn population under long-term reciprocal recurrent selection. *British Poultry Science* 32 (3), 451-462.
- Frankham, R. (1998): Inbreeding and extinction: island populations. *Conservation biology* 12 (3), 665-675.
- Frankham, R., Smith, G.J. and Briscoe, D.A. (1993): Effects on heterozygosity and reproductive fitness of inbreeding with and without selection on fitness in *Drosophila melanogaster*. *Theoretical and Applied Genetics* 86, 1023-1027.
- Fridolfsson, A. (1999): Evolutionary studies of sex chromosome linked genes and male-biased mutation in birds. Uppsala, Schweden: Swedish University of Agricultural Sciences, Diss. (Acta Universitatis Agriculturae Sueciae Agraria No. 190)
- García, N., López-Fanjul, C. and García-Dorado, A. (1994): The genetics of viability in *Drosophila melanogaster*: effects of inbreeding and artificial selection. *Evolution* 48 (4), 1277-1285.
- Gavora, J.S., Emsley, A. and Cole, R.K. (1979): Inbreeding in 35 generations of development of Cornell S strain of Leghorns. *Poultry Science* 58, 1133-1136.
- Gavora, J.S., Fairfull, R.W., Benkel, B.F., Cantwell, W.J. and Chambers, J.R. (1996): Prediction of heterosis from DNA fingerprints in chickens. *Genetics* 144, 777-784.
- Geldermann, H. (1975): Investigations on inheritance of quantitative characters in animals by gene markers. I. Methods. *Theoretical and Applied Genetics* 46, 319-330.
- Goldstein, D.B. and Clark, A.G. (1995): Microsatellite variation in north american populations of *Drosophila melanogaster*. *Nucleic Acids Research* 23 (19), 3882-3886.
- Goldstein, D.B. and Pollock, D.D. (1997): Launching microsatellites: a review of mutation processes and methods of phylogenetic inference. *The Journal of Heredity* 88 (5), 335-342.
- Gowe, J.S., Robertson, A., and Latter, B.D.H. (1959): Environment and poultry breeding problems. 5. The design of poultry control strains. *Poultry Science* 38, 462-471.
- Groen, A.F. (1993): A note on the use of DNA fingerprints to assess the coefficient of inbreeding in populations with unknown pedigree. *Journal of Animal Breeding and Genetics* 110, 156-160.
- Groen, A.F., Kennedy, B.W. and Eissen, J.J. (1995): Potential bias in inbreeding depression estimates when using pedigree relationships to assess the degree of homozygosity for loci under selection. *Theoretical and Applied Genetics* 91 (4), 665-671.

Groenen, M.A.M., Cheng, H.H., Bumstead, N., Benkel, B.F., Briles, W.E., Burke, T., Burt, D.W., Crittenden, L.B., Dodgson, J.D., Hillel, J., Lamont, S., Ponce de Leon, A., Soller, M., Takahashi, H. and Vignal, A. (2000): A consensus linkage map of the chicken genome. *Genome Research* 10, 137-147.

Groenen, M.A.M., Crooijmans, R.P.M.A., Veenendaal, A., Cheng, H.H., Siwek, M. and Van der Poel, J.J. (1998): A comprehensive microsatellite linkage map of the chicken genome. *Genomics* 49 (2), 265-274.

Grunder, A.A., Sabour, M.P. and Gavora, J.S. (1994): Estimates of relatedness and inbreeding in goose strains from DNA-fingerprints. *Animal Genetics* 25 (Suppl. 1) 81-88.

Haberfeld, A., Cahaner, A. Yoffe, O., Plotsky, Y. and Hillel, J. (1991). DNA fingerprints of farm animals generated by microsatellite and minisatellite DNA probes. *Animal Genetics* 22, 299-305.

Hamanová, K., Glasnák, V., Schröffelová, D. and Majzlík, I. (1999): Characterization of the Czech cold blood Horse Silesian Noriker by microsatellites, protein polymorphisms and blood groups. *Czech Journal of Animal Science* 44 (10), 457-461.

Hardge, T. (1999): Untersuchungen zu den genetischen Ursachen von quantitativen Leistungsmerkmalen mittels Kandidatengenanalyse beim Schwein. Berlin, Humboldt-Universität, Fachbereich Nutztierwissenschaften, Habilitationsschrift

Hauck, C.R. and Meyer, T.F. (1997): The lysosomal/phagosomal membrane protein h-lamp-1 is a target of the IgA1 protease of *Neisseria gonorrhoeae*. *Federation of European Biochemical Societies Letters* 405 (1), 86-90.

Hedrick, P.W. (1994): Purging inbreeding depression and the probability of extinction: full-sib mating. *Heredity* 73 (4), 363-372.

Hedrick, P.W. and Miller, P.S. (1992): Conservation genetics: techniques and fundamentals. *Ecological Applications* 2 (1), 30-46.

Henderson, C.R. (1976): A simple method for computing the inverse of a numerator relationship matrix used in prediction of breeding values. *Biometrics* 32, 69-83.

Hill, W.G. (1972): Estimation of genetic change: I. General theory and design of control population. *Animal Breeding Abstracts* 40, 1-15.

Hillel, J., Dunnington, E.A., Haberfeld, A., Lavi, U., Cahaner, A., Gal, O., Plotsky, Y., Marks, H.L. and Siegel, P.B. (1993): Multilocus DNA markers: applications in poultry breeding and genetic analyses. In: Etches, R.J. and Gibbins, A.M.V. (eds): *Manipulation of the Avian Genome*. CRC Press Inc. Boca Raton, FL., 243-256.

Hillel, J., Plotsky, Y., Haberfeld, A., Lavi, U., Cahaner, A. and Jeffrey, A.J. (1989): DNA fingerprints of poultry. *Animal Genetics* 20, 145-155.

- Hohenboken, W. (1985): Genes in populations. In: Chapman, A.B. (ed): General and quantitative genetics. Amsterdam: Elsevier Science Publisher B.V., 43-59.
- Horn, P. and Meleg, I. (2000): Inbreeding effects on production traits in pigeons. *Archiv für Geflügelkunde* 64 (6), 273-277.
- Huang, H.-B., Song, Y.-Q., Hsei, M., Zahochak, R., Chiu, J., Teuscher, C. and Smith, E.J. (1999): Development and characterization of genetic mapping resources for the turkey (*Meleagris gallopavo*). *The Journal of Heredity* 90 (1), 240-242.
- Hussein, A.A., Schmoll, F., Führer, F., Brem, G. and Schellander, K. (1996): Evaluation of seven microsatellite loci in Simmental cattle. *Zentralblatt Veterinärmedizin A* 43 (1), 1-8.
- Hutt, F.B. (1936): Genetics of the fowl. VI. A tentative chromosome map. *Neue Forschungen in Tierzucht und Abstammungslehre. Duerst Festschrift*, 105-111.
- Ibe, S.N., Rutledge, J.J. and McGibbon, W.H. (1983): Inbreeding effects on traits with and without selection for part record rate of lay in chickens. *Poultry Science* 62 (8), 1543-1547.
- Jarne, P. and Lagoda, P.J.L. (1996): Microsatellites, from molecules to population and back. *Trends in Ecology and Evolution* 11, 424-429.
- Jeffreys, A.J., Wilson, V. and Thein, S.L. (1985): Hypervariable 'minisatellite' regions in human DNA. *Nature* 314, 67-73.
- Jordana, J., Folch, P. and Sanchez, A. (1999): Genetic variation (protein markers and microsatellites) in endangered Catalanian donkeys. *Biochemical Systematics and Ecology* 27 (8), 791-798.
- Kaiser, M.G., Yonash, N., Cahaner, A. and Lamont, S.J. (2000): Microsatellite polymorphism between and within broiler populations. *Poultry Science* 79, 626-628.
- Karlsson, A., Carlsson, S.R. and Dahlgren, C. (1996): Identification of the lysosomal membrane glycoprotein Lamp-1 as a receptor for type-1-fimbriated (mannose-specific) *Escherichia coli*. *Journal of Biochemical and Biophysical Methods* 219 (1), 168-172.
- Khatib, H., Genislav, E., Crittenden, L.B., Bumstead, N. and Soller, M. (1993): Sequence-tagged microsatellite sites as markers in chicken reference and resource populations. *Animal Genetics* 24, 355-362.
- Koskinen, M.T. and Bredbacka, P. (1999): A convenient and efficient microsatellite-based assay for resolving parentages in dogs. *Animal Genetics* 30, 148-149.
- Krieter, J. (1995): Einfluß verschiedener Paarungsstrategien auf den Selektionserfolg, die Inzucht und die genetische Varianz in einer geschlossenen Nukleuspopulation beim Schwein. *Archiv für Tierzucht* 38 (6), 633-642.

- Künzi, N. und Stranzinger, G. (1993): Allgemeine Tierzucht. Stuttgart: Ulmer Verlag.
- Kuhnlein, U., Dawe, Y., Zadworny, D. and Gavora, J.S. (1989): DNA fingerprinting: a tool for determining genetic distances between strains of poultry. *Theoretical and Applied Genetics* 77, 669-672.
- Kuhnlein, U., Ni, L., Weigend, S., Gavora, J.S., Fairfull, W. and Zadworny, D. (1997): DNA polymorphisms in the chicken growth hormone gene: response to selection for disease resistance and association with egg production. *Animal Genetics* 28, 116-123.
- Kuhnlein, U., Zadworny, D., Dawe, Y., Fairfull, R.W. and Gavora, J.S. (1990): Assessment of inbreeding by DNA fingerprinting: development of a calibration curve using defined strains of chickens. *Genetics* 125, 161-165.
- Kulenkamp, A.W., Kulenkamp, C.M. and Coleman, T.H. (1973): The effects of intensive inbreeding (brother x sister) on various traits in Japanese quail. *Poultry Science* 52, 1240-1246.
- Lamont, S.J., Lakshmanan, N., Plotsky, Y., Kaiser, M.G., Kuhn, M., Arthur, J.A., Beck, N.J. and O'Sullivan, N.P. (1996): Genetic markers linked to quantitative traits in poultry. *Animal Genetics* 27, 1-8.
- Lande, R. and Barrowclough, G. (1987): Effective population size, genetic variation and their use in population management. In Soulé, M.E. (ed): *Viable populations for conservation*. Cambridge: Cambridge University Press, 87-123.
- Latter, B.D.H., Mulley, J.C., Reid, D. and Pascoe, L. (1995): Reduced genetic load revealed by slow inbreeding in *Drosophila melanogaster*. *Genetics* 139 (1), 287-297.
- Lerner, I.M. and Taylor, L.W. (1943): The inheritance of egg production in the domestic fowl. *The American Naturalist* 77, 119-132.
- Levin, I., Cheng, H.H., Baxter-Jones, C. and Hillel, J. (1995): Turkey microsatellite DNA loci amplified by chicken specific primers. *Animal Genetics* 26, 107-110.
- Levin, I., Crittenden, L.B. and Dodgson, J.B. (1993): Genetic map of the chicken Z chromosome using random amplified polymorphic DNA (RAPD) markers. *Genomics* 16, 224-230.
- Levin, I., Santangelo, L., Cheng, H., Crittenden, L.B. and Dodgson, J.B. (1994): An autosomal genetic linkage map of the chicken. *The Journal of Heredity* 85 (2), 79-85.
- Lowe, P.C. and Garwood, V.A. (1974): Inbreeding in 16 generations of the Regional Cornell Control population of chickens. *Poultry Science* 53 (2), 514-517.
- Lützenberg, F. (1966): Beurteilung des Geflügels. 1. Auflage. Radebeul: Neumann-Verlag.

- Machal, L., Krivanek, I., Kalova, J. and Jerabek, S. (1995): Between-lines difference of the relationship in ejaculate quality and volume in the cocks during the season. *Zivocisna-Vyroba-UZPI (Czech Republic.)* 40 (12), 541-545.
- Magoulas, A. (1998): Application of molecular markers to aquaculture and broodstock management with special emphasis on microsatellite DNA. *Cahiers Options Méditerranéennes* 34, 153-168.
- Marks, H.L. and Kinney, T.B.Jr. (1964): Estimates of some genetic parameters in Coturnix quail. *Poultry Science (Abstracts)* 43, 1338.
- McQueen, H.A., Fantes, J., Cross, S.H., Clark, V.H., Archibald, A.L. and Bird, A.P. (1996): CpG islands of chicken are concentrated on microchromosomes. *Nature Genetics* 12 (3), 321-324.
- McQueen, H.A., Siriaco, G. and Bird, A.P. (1998): Chicken microchromosomes are hyperacetylated, early replicating and gene rich. *Genome Research* 8 (6), 621-630.
- McTiernan, C.F., Frye, C.S., Lemster, B.H., Kinder, E.A., Ogletree-Hughes, M.L., Moravec, C.S. and Feldman, A.M. (1999): The human phospholamban gene: structure and expression. *Journal of Molecular and Cellular Cardiology* 31 (3), 679-692.
- Meng, A., Gong, G., Chen, D., Zhang, H., Qi, S., Tang, H. and Gao, Z. (1996): DNA fingerprint variability within and among parental lines and its correlation with performance of F₁ laying hens. *Theoretical and Applied Genetics* 92, 769-776.
- Mina, N.S., Sheldon, B.L., Yoo, B.H. and Frankham, R. (1991): Heterozygosity at protein loci in inbred and outbred lines of chickens. *Poultry Science* 70 (9), 1864-1872.
- Mitton, J.B. (1993): Theory and data pertinent to the relationship between heterozygosity and fitness. In Thornhill, N.W. (ed): *The natural history of inbreeding and outbreeding*. Chicago: The University of Chicago Press, 17-41.
- Mommens, G., Van Zeveren, A. and Peelman, L.J. (1998): Effectiveness of bovine microsatellites in resolving paternity cases in American bison, *Bison bison* L. *Animal Genetics* 29 (1), 12-18.
- Moran, C. (1993): Microsatellite repeats in pig (*Sus domestica*) and chicken (*Gallus domesticus*) genomes. *The Journal of Heredity* 84 (4), 274-280.
- Morera, L., Barba, C.J., Garrido, J.J., Barbancho, M. and de Andrés, D.F. (1999): Genetic variation detected by microsatellites in five Spanish dog breeds. *The Journal of Heredity* 90 (6), 654-656.

Morisson, M., Pitel, F., Fillon, V., Pouzadoux, A., Bergé, R., Vit, J.P., Zoorob, R., Auffray, C., Gellin, J. and Vignal, A. (1998): Integration of chicken cytogenetic and genetic maps: 18 new polymorphic markers isolated from BAC and PAC clones. *Animal Genetics* 29 (5), 348-355.

Nagaraja, S.C., Aggrey, S.E., Yao, J., Zadwoerny, D., Fairfull, R.W. and Kuhnlein, U. (2000): Trait association of a genetic marker near the IGF-I gene in egg-laying chickens. *The Journal of Heredity* 2, 150-156.

Narayan, A.D. (1976): Effects of different rates of inbreeding on the body weight and rate of gain of Japanese quail. *British Poultry Science* 17 (3), 303-311.

Nei, M. (1978): Estimation of average heterozygosity and genetic distance from a small number of individuals. *Genetics* 89, 583-590.

Nei, M. (1987): *Molecular evolutionary genetics*. New York, Columbia University Press.

Neumann, P., Moritz, R.F.A. and Mautz, D. (1999): Using DNA microsatellites for maternity testing in honeybees (*Apis mellifera* L.). *Apidologie* 30 (6), 505-512.

Newcomer, E.H. (1957): The mitotic chromosomes of the domestic fowl. *The Journal of heredity* 48, 227-234.

Nordskog, A.W. and Cheng, S. (1988): Inbreeding effects on fertility and hatchability associated with the formation of sublines. *Poultry Science* 67 (6), 859-864.

O'Brien, S.J. (1991): Mammalian genome mapping: lessons and prospects. *Current Opinion in Genetics and Development* 1, 105-111.

Oertel und Spörer (1960): *Der grosse Geflügelstandard*. Bd. 1. Hühner, Truthühner, Perlhühner. Verlagshaus Reutlingen. S. 158-160.

Otsen, M., Den Bieman, M., Winer, E.S., Jacob, H.J., Szpirer, J., Szpirer, C., Bender, K. and Van Zutphen, L.F.M., (1995): Use of simple sequence length polymorphisms for genetic characterization of rat inbred strains. *Mammalian Genome* 6 (9), 595-601.

Pang, S.W.Y., Ritland, C., Carlson, J.E. and Cheng, K.M. (1999): Japanese quail microsatellite loci amplified with chicken-specific primers. *Animal Genetics* 30, 195-199.

Parkányi, V., Mertin, D. and Rafay, J. (1992): The microchromosomes in silver foxes, red foxes and their hybrids. *Scientifur* 16 (3), 195-199.

Pemberton, J.M., Slate, J., Bancroft, D.R. and Barrett, J.A. (1995): Nonamplifying alleles at microsatellite loci: a caution for parentage and population studies. *Molecular Ecology* 4, 249-252.

Pirchner, F. (1983): *Population genetics in animal breeding*. Second Edition. New York: Plenum Press.

- Pitra, C., Curson, A., Nürnberg, P., Krawczak, M. and Brown, S. (1996): An assessment of inbreeding in Asian wild horse (*Equus przewalskii* Poliakov 1881) populations using DNA fingerprinting. *Archiv für Tierzucht* 39 (6), 589-596.
- Plotsky, Y., Cahaner, A., Haberfeld, A., Lavi, U., Lamont, S.J. and Hillel, J. (1993): DNA fingerprint bands applied to linkage analysis with quantitative trait loci in chickens. *Animal Genetics* 24, 105-110.
- Plotsky, Y., Kaiser, M.G. and Lamont, S.J. (1995): Genetic characterization of highly inbred chicken lines by two DNA methods: DNA fingerprinting and polymerase chain reaction using arbitrary primers. *Animal Genetics* 26, 163-170.
- Ponsuksili, S., Wimmers, K. and Horst, P. (1996): Genetic variability in chickens using polymorphic microsatellite markers. *Thai Journal of Agricultural Science* 29, 571-580.
- Ponsuksili, S., Wimmers, K. and Horst, P. (1998): Evaluation of genetic variation within and between different chicken lines by DNA fingerprinting. *The Journal of Heredity* 89 (1), 17-23.
- Ponsuksili, S., Wimmers, K., Schmoll, F., Horst, P. and Schellander, K. (1999): Comparison of multilocus DNA Fingerprints and microsatellites in an estimate of genetic distance in chicken. *The Journal of heredity* 90 (6), 656-659.
- Pouyaud, L., Desmarais, E., Chenuil, A., Agnese, J.F. and Bonhomme, F. (1999): Kin cohesiveness and possible inbreeding in the mouthbreeding tilapia *Sarotherodon melanotheron* (*Pisces cichlidae*). *Molecular Ecology* 8 (5), 803-812.
- Pradhan, S., Misra, S.K. and Sinha, R. (1995): Cytomorphological study of chicken chromosome. *Indian Journal of Animal Health* 34 (2), 83-85.
- Primmer, C.R. (1997): Genetic studies of avian microsatellite loci. Uppsala, Schweden: Swedish University of Agricultural Sciences, Diss. (Acta Universitatis Agriculturae Sueciae Agraria No. 67)
- Reilly, A., Elliott, N.G., Grewe, P.M., Clabby, C., Powell, R. and Ward, R.D. (1999): Genetic differentiation between Tasmanian cultured Atlantic salmon (*Salmo salar* L.) and their ancestral Canadian population: comparison of microsatellite DNA allozyme and mitochondrial DNA variation. *Aquaculture* 173 (1-4), 459-469.
- Rodionov, A.V. (1996): Micro vs. macro: a review of structure and functions of avian micro- and macrochromosomes. *Genetika Moskva* 32 (5), 597-608.
- Rodionov, A.V., Chelysheva, L.A., Myakoshina, Y.A. and Chechik, M.S. (1997): Frequency of crossing-over and the length of genetic maps in domesticated galliformes. *Russian Agricultural Sciences* 2, 17-22.

- Rumball, W., Franklin, I.R., Frankham, R. and Sheldon, B.L. (1994): Decline in heterozygosity under full-sib and double first-cousin inbreeding in *Drosophila melanogaster*. *Genetics* 136 (3), 1039-1049.
- Russell, R.J., Festing, M.F.W., Deeny, A.A. and Peters, A.G. (1993): DNA fingerprinting for genetic monitoring of inbred laboratory rats and mice. *Laboratory Animal Science (USA)*, 43 (5), 460-465.
- Ryskov, A.P. (1999): Multilocus DNA fingerprints in the genetic studies of biodiversity. *Molecular Biology* 33 (6), 880-892.
- Sambrook, J., Fritsch, E.F. and Maniatis, T. (1989): *Molecular cloning. A laboratory manual*. Vol. 3., Second edition. New York: Cold Spring Harbor Laboratory Press, p. E. 5.
- Savas, T., Preisinger, R., Röhe, R., Kalm, E. und Flock, D.K. (1999): Auswirkungen der Inzucht auf Leistungsmerkmale und deren genetische Parameter bei Legehennen. *Archiv für Geflügelkunde* 63 (6), 246-251.
- Schönmuth, G., Flade, D. und Seeland, G. (1985): *Züchterische und ökologische Grundlagen*. 1. Auflage. Berlin: VEB Deutscher Landwirtschaftsverlag.
- Schönmuth, G., Flade, D. und Seeland, G. (1986): *Tierproduktion - Genetische und phylogenetische Grundlagen*. 2. Auflage. Berlin: VEB Deutscher Landwirtschaftsverlag.
- Schramm, G.-P. (2000a): persönliche Mitteilung.
- Schramm, R. (2000b): persönliche Mitteilung.
- Sewalem, A., Johansson, K., Wilhelmson, M. and Lillpers, K. (1999): Inbreeding and inbreeding depression on reproduction and production traits of White Leghorn lines selected for egg production traits. *British Poultry Science* 40 (2), 203-208.
- Shaw, E.M., Otis, J.S., Lamont, S.J., Guise, K.S. and Shoffner, R.N. (1996): Gene mapping by chromosome microdissection and microisolation in the chicken. *Poultry Science* 75, 6-12.
- Shaw, P.W., Turan, C., Wright, J.M., O'Connell, M. and Carvalho, G.R. (1999): Microsatellite DNA analysis of population structure in Atlantic herring (*Clupea harengus*), with direct comparison to allozyme and mtDNA RFLP analyses. *Heredity* 83 (4), 490-499.
- Shoffner, R.N. (1946): The heritability of egg production. *Poultry Science* 25, 412.
- Shoffner, R.N. (1948): The reaction of the fowl to inbreeding. *Poultry Science* 27, 448-452.
- Signer, E.N., Jeffreys, A.J., Licence, S., Miller, R., Byrd, P. and Binns, R. (1999): DNA profiling reveals remarkably low genetic variability in a herd of SLA homozygous pigs. *Research in Veterinary Science* 67, 207-211.

- Sing, C.F., Brewer, G.J. and Thirtle, B. (1973): Inherited biochemical variation in *Drosophila melanogaster*: noise or signal? I. Single-locus analysis. *Genetics* 75, 381-404.
- Singh, H. and Nordskog, A.W. (1981): Biochemical polymorphic systems in inbred lines of chickens: a survey. *Biochemical Genetics* 19, 1031-1035.
- Sittmann, K., Abplanalp, H. and Fraser, R.A. (1966): Inbreeding depression in Japanese quail. *Genetics* 54, 371-379.
- Smith, J. and Burt, D.W. (1998): Parameters of the chicken genome (*Gallus gallus*). *Animal Genetics* 29, 290-294.
- Smith, J., Bruley, C.K., Paton, I.R., Dunn, I., Jones, C.T., Windsor, D., Morrice, D.R., Law, A.S., Masabanda, J., Sazanov, A., Waddington, D., Fries, R. and Burt, D.W. (2000a): Differences in gene density on chicken macrochromosomes and microchromosomes. *Animal Genetics* 31, 96-103.
- Smith, E.J., Jones, C.P., Bartlett, J. and Nestor, K.E. (1996): Use of randomly amplified polymorphic DNA markers for the genetic analysis of relatedness and diversity in chickens and turkeys. *Poultry Science* 75, 579-584.
- Smith, J., Paton, I.R., Bruley, C.K., Windsor, D., Burke, D., Ponce de Leon, F.A. and Burt, D.W. (2000b): Integration of the genetic and physical maps of the chicken macrochromosomes. *Animal Genetics* 31, 20-27.
- Sourdioux, M., Douaire, M. and Delabrosse, Y. (1996): DNA polymorphisms of lipogenesis genes and analysis of linkage with fatness in turkeys. *Poultry Science* 75, 1018-1026.
- Stallings, R.L., Ford, A.F., Nelson, D., Torney, D.C., Hildebrand, C.E. and Moyzis, R.K. (1991): Evolution and distribution of (GT)_n repetitive sequences in mammalian genomes. *Genomics* 10, 807-815.
- Stevens, L. (1986): Gene structure and organisation in the domestic fowl (*Gallus domesticus*). *World Poultry Science* 42, 232-242.
- Sugimoto, Y., Sanuki, S., Ohsako, S., Higashimoto, Y., Kondo, M., Kurawaki, J., Ibrahim, H.R., Aoki, T., Kusakabe, T. and Koga, K. (1999): Ovalbumin in developing chicken eggs migrates from egg white to embryonic organs while changing its conformation and thermal stability. *Journal of Biological Chemistry* 274 (16), 11030-11037.
- Takahashi, H., Nirasawa, K., Nagamine, Y., Tsudzuki, M. and Yamamoto, Y. (1998): Genetic relationships among Japanese native breeds of chicken based on microsatellite DNA polymorphisms. *The Journal of Heredity* 89 (6), 543-546.
- Tautz, D. (1989): Hypervariability of simple sequences as a general source for polymorphic DNA markers. *Nucleic Acids Research* 17 (16), 6463-6471.

Tixier-Boichard, M. (1993): The chicken gene map: current state and prospects. In: Proceedings of the 10th International Symposium on Current Problems of Avian Genetics, Nitra, Slovakia, 7-10th June, 1993, S. 147-155.

Tixier-Boichard, M., Coquerelle, G. and Vilela-Lamego, C. (1999): Contribution of data on history, management and phenotype to the description of the diversity between chicken populations sampled within the AVIANDIV project. In: Proceedings: Poultry Genetics Symposium, Mariensee, Germany, 6-8th October 1999, 15-21.

Tixier-Boichard, M., Kritchmann, N., Morisson, M., Bordas, A. and Hillel, J. (1996): Assessment of genomic variability through DNA fingerprinting within and between chicken lines divergently selected for residual food consumption. *Animal Genetics* 27, 163-169.

Trompelt, S., Brandsch, H. und Brade, W. (1982): Inzuchtversuch mit Wachteln unter besonderer Berücksichtigung verschiedener regulärer Paarungssysteme. *Archiv für Tierzucht* 25 (2), 153-158.

URL 1: <http://www.tiho-hannover.de/einricht/zucht/optimate/index.htm>

URL 2: <http://oes.de/geno/genodokud.html>

URL 3: <http://www.tg-verlag.com>

Van Duyse, E., Galbusera, P., Schenck, T., Pinxten, R. and Eens, M. (1999): Estimating isolation and genetic differentiation in two Belgian populations of Moorhens *Gallinula chloropus* by using minisatellite and microsatellite DNA markers. *Belgian Journal of Zoology* 129 (1), 113-124.

Van Kaam, J.B.C.H.M., Groenen, M.A.M., Bovenhuis, H., Veenendaal, A., Vereijken, A.L.J. and Van Arendonk, J.A.M. (1999a): Whole genome scan in chickens for quantitative trait loci affecting growth and feed efficiency. *Poultry Science* 78, 15-23.

Van Kaam, J.B.C.H.M., Groenen, M.A.M., Bovenhuis, H., Veenendaal, A., Vereijken, A.L.J. and Van Arendonk, J.A.M. (1999b): Whole genome scan in chickens for quantitative trait loci affecting carcass traits. *Poultry Science* 78, 1091-1099.

Vanhala, T., Tuiskula-Haavisto, M., Elo, K., Vilkki, J. and Mäki-Tanila, A. (1998): Evaluation of genetic variability and genetic distances between eight chicken lines using microsatellite markers. *Poultry Science* 77 (6), 783-790.

Van Tassel, C.P. and Van Vleck, L.D. (1995): A manual for use of MTGSAM. A set of fortran programs to apply Gibbs Sampling to animal models for variance component estimation. U.S. Department of Agriculture, Agriculture Research Service.

Van Zeveren, A., Peelman, L., Van de Weghe, A. and Bouquet, Y. (1995): A genetic study of four Belgian pig populations by means of seven microsatellite loci. *Journal of Animal Breeding and Genetics* 112, 191-204.

- Wang, J. and Hill, W.G. (1999): Effect of selection against deleterious mutations on the decline in heterozygosity at neutral loci in closely inbreeding populations. *Genetics* 153 (3), 1475-1489.
- Wang, A.G. und Pirchner, F. (1992): Inzuchtverlauf und -wirkungen in Elternlinien bei Selektion auf Futtermittelverwertung von Legehennenkreuzungen. *Archiv für Geflügelkunde* 56 (3), 112-117.
- Weber, J.L. (1990): Human DNA polymorphisms and methods of analysis. *Current Opinion in Biotechnology* 1 (2), 166-171.
- Weber, J.L. and May, P.E. (1989): Abundant class of human DNA polymorphisms which can be typed using the polymerase chain reaction. *American Journal of Human Genetics* 44, 388-396.
- Weigend, S. (1999): Assessment of biodiversity in poultry with DNA markers. In: *Proceedings : Poultry Genetics Symposium, Mariensee, Germany, 6-8th October 1999*, 7-14.
- Weigend, S., Vef, E., Wesch, G., Meckenstock, E., Seibold, R. und Ellendorff, F. (1995): Konzeption zur Erhaltung genetischer Ressourcen bei Geflügelspezies in Deutschland. *Archiv für Geflügelkunde* 59 (6), 327-334.
- Welsh, J. and McClelland, M. (1990): Fingerprinting genomes using PCR with arbitrary primers. *Nucleic Acid Research* 18, 7213-7218.
- Wilke, K., Jung, M., Chen, Y. and Geldermann, H. (1994): Porcine (GT)_n-sequences: structure and association with dispersed and tandem repeats. *Genomics* 21, 63-70.
- Williams, J.G.K., Kubelik, A.R., Livak, K.J., Rafelski, J.A. and Tingey, S.V. (1990): DNA polymorphisms amplified by arbitrary primers are successful as genetic markers. *Nucleic Acid Research* 18, 6531-6535.
- Wilson, W.O. (1948a): Egg production rate and fertility in inbred chickens. *Poultry Science* 27, 719-726.
- Wilson, W.O. (1948b): Viability of embryos and of chicks in inbred chickens. *Poultry Science* 27, 727-735.
- Wimmers, K. (1994): Schätzung der Genomanteile bei Hühnern verschiedener Kreuzungsstufen durch DNA-Fingerprinting. Berlin, Humboldt-Universität, Fachbereich Nutztierwissenschaften, Dissertation
- Wimmers, K., Ponsuksili, S., Hardge, T., Valle-Zarate, A., Mathur, P.K. and Horst, P. (2000): Genetic distinctness of African, Asian and South American local chickens. *Animal Genetics* 31, 159-165.

- Wimmers, K., Ponsuksili, S., Schmoll, F., Hardge, T., Sonaiya, E.B., Schellander, K. and Horst, P. (1999): Application of microsatellite analysis to group chicken according to their genetic similarity. *Archiv für Tierzucht* 42 (6), 629-639.
- Winterø, A.K., Fredholm, M. and Thomsen, P.D. (1992): Variable $(dG-dT)_n \cdot (dC-dA)_n$ sequences in the porcine genome. *Genomics* 12, 281-288.
- Woodard, A.E., Abplanalp, H., Pisenti, J.M. and Snyder, L.R. (1983): Inbreeding effects on reproductive traits in the ring-necked pheasant. *Poultry Science* 62 (9), 1725-1730.
- Woodard, A.E., Abplanalp, H. and Snyder, L. (1982): Inbreeding depression in the Red-legged partridge. *Poultry Science* 61, 1579-1584.
- Wright, S. (1921): Systems of mating. *Genetics* 6, 111-178.
- Wright, S. (1922): Coefficients of inbreeding and relationship. *American naturalist* 56, 330-338.
- Wright, S. (1931): Evolution in Mendelian populations. *Genetics* 16, 97-159.
- Yadav, J.S., Pachlag, S., Burra, M.R. and Yadav, A.S. (1995): Karyotypic analysis of three species of Phasianidae (Galliformes: Aves). *Cytobios* 81 (325), 119-127.
- Yamashina, M.Y. (1944): Karyotype studies in birds. I. Comparative morphology of chromosomes in seventeen races of domestic fowl. *Cytologia* 13, 270-296.
- Yang, L., Zhao, S.H., Li, K., Peng, Z.Z. and Montgomery, G.W. (1999): Determination of genetic relationships among five indigenous Chinese goat breeds with six microsatellite markers. *Animal Genetics* 30 (6), 452-455.
- Ye, X., Zhu, J., Velleman, S.G., Bacon, W.L. and Nestor, K.E. (1998a): Measurement of genetic variation within and between Japanese quail lines using DNA fingerprinting. *Poultry Science* 77, 1755-1758.
- Ye, X., Zhu, J., Velleman, S.G. and Nestor, K.E. (1998b): Genetic diversity of commercial turkey primary breeding lines as estimated by DNA fingerprinting. *Poultry Science* 77, 802-807.
- Yonash, N., Bacon, L.D., Witter, R.L. and Cheng, H.H. (1999): High resolution mapping and identification of new quantitative trait loci (QTL) affecting susceptibility to Marek's disease. *Animal Genetics* 30, 126-135.
- Zajc, I., Mellersh, C., Kelly, E.P. and Sampson, J. (1994): A new method of paternity testing for dogs, based on microsatellite sequences. *Veterinary Record* 135 (23), 545-547.

Zhang, X., McDaniel, G.R. and Giambrone, J.J. (1995): Random amplified polymorphic DNA comparisons among broiler lines selected for incidence of tibial dyschondroplasia. *Poultry Science* 74, 1253-1258.

Zhou, H. and Lamont, S.J. (1999): Genetic characterization of biodiversity in highly inbred chicken lines by microsatellite markers. *Animal Genetics* 30, 256-264.

Zhu, J., Nestor, K.E. and Moritsu, Y. (1996a): Relationship between band sharing levels of DNA fingerprints and inbreeding coefficients and estimation of true inbreeding in turkey lines. *Poultry Science* 75, 25-28.

Zhu, J., Nestor, K.E., Patterson, R.A., Jackwood, D.J. and Emmerson, D.A. (1996b): Measurement of genetic parameters within and between turkey lines using DNA fingerprinting. *Poultry Science* 75, 439-446.

Zhu, J., Nestor, K.E. and Tang, Y. (1996c): Frequencies and genetic diversity of major histocompatibility complex class II haplotypes in commercial turkey lines. *Poultry Science* 75, 954-958.