

- Agerhem, H. i Dijksterhuis, G. (1997). Description of the methodology used for the sensory assessment of boar taint in EU project AIR 3 PL942482. *Proceedings 43rd International Congress of Meat Science and Technology*. Auckland, New Zealand: 252-253.
- Agerhem, H. i Tornberg, E. (1994). A comparison of the off-flavour of shoulder butts from entire male and female pigs using expert and consumer panels. *Proceedings 40th International Congress of Meat Science and Technology*. La Haya. Holanda.
- Agerhem, H. i Tornberg, E. (1995). A comparison of the off-flavour of meat from entire male pigs cooked to two different internal end-point temperatures. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, United Kingdom.
- Amerine, M.A., Pangborn, R.M. i Roessler, E.B. (1965). Principles of Sensory Evaluation of Food. Academic Press. London.
- Amoore, J.E. (1967). Specific Anosmia. A clue to the olfactory code. *Nature*, 214: 1095-1098.
- Amoore, J.E. (1969). A plan to identify most of the primary odors. A: *Olfaction and Taste III*. C. Pfaffmann (ed.). pàg.: 158-171. The Rockefeller University Press, New York, USA.
- Amoore, J.E., Venstrom, D. i Davis, A.R. (1968). Measurement of specific anosmia. *Perception Motor Skills*, 26: 143-164.
- Andersson, H., Lundström, K., Rydhmer, L., Hansson, I., Forsberg, M. i Andersson, K., (1995). Effects of spring and autumn light regimens on puberty boar taint and leanness in entire male pigs. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Andersson, H., Lundström, K., Wallgren, M., Rydhmer, L., Andersson, K. i Forsberg, M. (1997a). Photoperiodic influence on boar taint factors in entire male pigs. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 104-107. Wageningen Pers. EAAP Publication Núm. 92.
- Andersson, K., Hullberg, A., Malmgren, L., Lundström, K., Squires, J. i Rydhmer, L. (1997b). Relations between boar taint and puberty in entire male pigs. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 70-73. Wageningen Pers. EAAP Publication Núm. 92.
- Andersson, K., Schaub, A., Andersson, K., Lundström, K., Thomke, S. i Hansson, I. (1997c). The effects of feeding system, lysine level and gilt contact on performance, skatole levels and economy of entire male pigs. *Livestock Production Science*, 51: 131-140.
- Andressen, Ø., Frøystein, M. Rødbotten, H.P. Mortensen, Eik-Nes, O. i Lea, P. (1993). Sensoric evaluation of boar meat with different levels of androstenone and skatole. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 69-73. INRA Paris, Les Colloques, 60.

- Annor-Frempong, I.E., Nute, G.R., Whittington, F.W. i Wood, J.D. (1997a). The problem of taint in pork-I. Detection thresholds and odour profiles of androstenone and skatole in a model system. *Meat Science*, 46 (1): 45-55
- Annor-Frempong, I., Nute, G.R., Whittington, F.W. i Wood, J.D., (1997b). The problem of taint in pork-II. The influence of skatole, androstenone and indole, presented individually and in combination in a model lipid base, on odour perception. *Meat Science*, 47 (1/2): 49-61.
- Annor-Frempong, I., Nute, G.R., Whittington, F.W. i Wood, J.D., (1997c). The problem of taint in pork-III. Odour profile of pork fat and the interrelationships between androstenone, skatole and indole concentrations. *Meat Science*, 47 (1/2): 63-76.
- Arnold, G.M. i Williams, A.A. (1986). The use of generalised Procrustes techniques in sensory analysis. A: *Statistical Procedures in food Research*. J.R. Piggott (ed.). pàg. 233-253. Elsevier Applied Science, London.
- Arpa, I., Diestre, A. i Monfort, J.M. (1988). Incidencia del olor sexual en canales porcinos de machos sin castrar según panel de olfacción y su relación con la androstenona. *Investigación Agraria, Producción y Sanidad animales*, 3 (1): 9-15.
- Babol, J., Squires, E.J. i Gullett, E.A. (1995). Factors affecting the level of boar taint as determined by trained and consumer sensory panels. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Babol, J., Squires, E.J. i Lundström, K. (1997a). Involvement of cytochrome P450IIE1 in hepatic metabolism and clearance of skatole. A: *Boar taint in entire male pigs*. Stockholm, Sweden. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 49-53. Wageningen Pers. EAAP Publication Núm. 92.
- Babol, J., Squires, E.J. i Lundström, K. (1997b). Relationship between metabolism of androstenone and skatole. A: *Boar taint in entire male pigs*. Stockholm, Sweden. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 62-65. Wageningen Pers. EAAP Publication Núm. 92.
- Babol, J., Squires, E.J. i Lundström, K. (1999). Relationship between metabolism of androstenone and skatole in intact male pigs. *Journal of Animal Science*, 77: 84-92.
- Barber, C.E. (1997). Olfactory acuity as a function of age and gender: a comparison of African and American samples. *International Journal of Aging and Human Development*, 44 (4): 317-334.
- Barton-Gade, P. (1984). Meat quality in boar, castrates and gilts -within litter comparison. *Proceedings European Association for Animal Production Symposium on boar taint*. Holbaek, Denmark.
- Béague, M.P., Siret, F., Fischer, K. i Chevillon, P. (1997). Consumer acceptability and characterization of the cooking odour of lardons produced from pork with different androstenone and skatole contents. A: *Boar taint in entire male pigs*. Stockholm, Sweden. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 165-168. Wageningen Pers. EAAP Publication Núm. 92.

- Beery, K.E. i Sink, J.D. (1971). Isolation and identification of 3α -hydroxy- 5α -androst-16-en-3-one from porcine adipose tissue. *Journal of Endocrinology*, 51: 223-224.
- Beery, K.E., Sink, J.D., Patton, S. i Ziegler, J.H. (1971). Characterization of the swine sex odor (SSO) components in Boar Fat Volatiles. *Journal of Food Science*, 36: 1086-1090.
- Bejerholm, C. i Barton Gade, P. (1993). The relationship between skatole/androstenone and odour/flavour of meat from entire male pigs. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 75-79. INRA Paris, Les Colloques, 60.
- Berg, H., Agerhem, H., Von Seth, G., Tornberg, E. i Andresen, Ø. (1993). The relationship between skatole and androstenone content and sensory off-odour in entire male pigs. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 55-61. INRA Paris, Les Colloques, 60.
- Berne, R. i Levy, M. (1992). Fisiología. Mosby-Year Book. Europe Ltd.
- Bidanel, J.P., Milan, D., Chevalet, C., Wolowzyn, N., Caritez, J.C., Gruand, J., Le Roy, P., Bonneau, M., Renard, C., Vaiman, M., Gellin, J. i Ollivier, L. (1997). Chromosome 7 mapping of a quantitative trait locus for fat androstenone level in Meishan x Large White F2 entire male pigs. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 115-118. Wageningen Pers. EAAP Publication Núm. 92.
- Bonneau, M. (1982). Compounds responsible for boar taint, with special emphasis on androstenone: a review. *Livestock Production Science*, 9: 687-705.
- Bonneau, M. (1987). Effects of age and live weight on fat 5α -androstenone levels in young boars fed two planes of nutrition. *Reproduction, Nutrition, Développement*, 27: 413-422.
- Bonneau, M. (1989). Endocrinological and physiological aspects. *Proceedings European Association for Animal Production working group on Production and Utilization of Meat from Entire Male Pigs*. Girona.
- Bonneau, M. (1998). Use of entire males for pig meat in the European Union. *Proceedings 44è International Congress of Meat Science and Technology*. Barcelona, Catalunya. Vol 1: 192-205.
- Bonneau, M. i Desmoulin, B. (1980). Évolution de la teneur en androstenone des graisses après 80 kg de poids vif chez le porc mâle entier de type Large White: variations selon les conditions d'élevage. *Journées Recherche Porcine en France*: 109-116.
- Bonneau, M. i Desmoulin, B. (1982). Défauts d'odeur sexuelle et possibilités d'emploi des viandes de porc mâle entier. *Journées Recherche Porcine en France*, 14: 11-32.
- Bonneau, M., Desmoulin, B. i Dumont, B.L. (1979). Qualités organoleptiques des viandes de porcs mâles entiers ou castrés: composition des graisses et odeurs sexuelles chez les races hypermusclées. *Annales de Zootechnie*, 28 (I): 53-72.

- Bonneau, M., Dufour, R., Chouvet, C., Roulet, C., Meadus, W. i Squires, E.J. (1994). The effects of immunization against luteinizing hormone-releasing hormone on performance, sexual development, and levels of boar taint-related compounds in intact male pigs. *Journal of Animal Science*, 72: 14-20.
- Bonneau, M. i Enright, W.J. (1995). Immunocastration in cattle and pigs. *Livestock Production Science*, 42: 193-200.
- Bonneau, M., Kempster, A.J., Claus, R., Claudi-Magnussen, C., Diestre, A., Tornberg, E., Walstra, P., Chevillon, P., Weiler, U. i Cook, G.L. (2000). An international study on the importance of androstenone and skatole for boar taint: I. Presentation of the programme and measurement of boar taint compounds with different analytical procedures. *Meat Science*, 54: 251-259.
- Bonneau, M., Le Denmat, M., Vaudelet, J.C., Veloso Nunes, J.R., Mortensen, A.B. i Mortensen, H.P. (1992). Contributions of fat androstenone and skatole to boar taint: I. Sensory attributes of fat and pork meat. *Livestock Production Science*, 32: 63-80.
- Bonneau, M. i Russeil, P. (1985). The size of Cowper's (bulbo-urethral) glands as an estimate of boar taint on the slaughter line. *Livestock Production Science*, 13: 81-89.
- Bonneau, M., Tassencourt, L.I. i Desmoulin, B. (1975). Étude de la response olfactive des juges en fonction des sites de chauffage des graisses de porcs mâles entiers, mâles castrés ou femelles de race Large-White. *Journées Recherche Porcine en France*: 225-232.
- Brennan, J.J., Shand, P.J., Fenton, M., Nicholls, L.L. i Aherne, F.X. (1986). Androstenone, androstenol and olor intensity in backfat of 100 and 130 kg boars and gilts. *Canadian Journal of Animal Science*, 66: 615-524.
- Brooks, R.I. i Pearson, A.M. (1989). Odor thresholds of the C19- Δ 16-steroids responsible for boar odor in pork. *Meat Science*, 24: 11-19.
- Buixadé, C. (1997). Estructuras y mercados: El subsector porcino a nivel mundial y de la U.E.-15. A: *Porcinocultura: aspectos claves*. Carlos Buxadé Carbó (ed.). pàg.: 21-36. Ediciones Mundi-Prensa, Madrid.
- Castell, A.G. i Strain, J.H. (1985). Influence of diet and sex-type (boar, castrate or gilt) on live and carcass measurements of self-fed pigs from two breed lines differing in growth rates. *Canadian Journal of Animal Science*, 65: 185-195.
- C.E.E. (1991). Reglamento (C.E.E.) N° 2568/91. Características de los aceites de oliva y los aceites de orujo de oliva y sobre sus métodos de análisis. *D.O.C.E.* N° L 248: 53-55.
- Claudi-Magnussen, C. (2000). Comunicació personal.
- Claus, R., (1979). The boar taint as model of a steroidal pheromone. *Proceedings XIIIth Acta Endocrinologica Congress*. Munich. Germany.
- Claus, R. i Alsing, W. (1976). Einfluß von Choriongonadotropin, Haltungsänderung und sexueller Stimulierung auf die Konzentrationen von Testosteron im Plasma

- sowie des Ebergeruchsstoffes im Plasma und Fett eines Ebers. *Berliner und Münchener Tierärztliche Wochenschrift*, 89: 354-358.
- Claus, R. i Giménez, T. (1977). Diurnal rhythm of 5α -androst-16-en-3-one and testosterone in peripheral plasma of boars. *Acta endocrinologica*, 84: 200-206.
- Claus, R., Herbert, E. i Dehnhard, M. (1997a). Comparative determination of the boar taint steroid androstenone in pig adipose tissue by a rapid enzyme immunoassay and HPLC-method. *Archiv für Lebensmittelhygiene*, 48: 25-48.
- Claus, R. i Hoffmann, B. (1971). Determination of $\Delta 16$ -Steroids in boars. *Acta endocrinologica*. (Kbh). Suppl. 155: 70
- Claus, R. i Hoffmann, B. (1980). Oestrogens, compared to other steroids of testicular origin, in blood plasma of boars. *Acta endocrinologica*, 94: 404-411.
- Claus, R., Hoppen, H.O. i Karg, H. (1981). The secret of truffles: a steroidal pheromone?. *Experientia* 37: 1178-1179.
- Claus, R., Schopper, D. i Wagner, H.G. (1983). Seasonal effect on steroids in blood plasma and seminal plasma of boars. *Journal of steroid Biochemistry*, 19: 725-729.
- Claus, R., Schopper, D., Wagner, H.G. i Weiler, U. (1985). Photoperiodic influences on reproduction of domestics boars. *Zentralblatt für Veterinärmedizin, -A*, 32: 86-98.
- Claus, R., Weiler, U., Cook, G., Walstra, P i Claudi-Magnussen, C. (1997b). EU project on boar taint: Accuracy on the rapid measurements of androstenone and skatole comparatively to laboratory methods A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 7-10. Wageningen Pers. EAAP Publication Núm. 92.
- Claus, R., Weiler, U. i Herzog, A. (1994). Physiological aspects of androstenone and skatole formation in the boar: A review with experimental data. *Meat Science*, 38: 239-305.
- Cleveland, W. S. (1979). Robust locally weighted regression and smoothing scatterplots. *Journal of the American Statistical Association*, 74: 829-836.
- Cleveland, W. S. (1985). The elements of graphing data. Wadworth Advanced Books and Software. Monterey, C.A.
- Cliplaf, R.L., Grinwich, D.L. i Castell, A.G. (1984). Consumer acceptance of fresh pork and pork products from littermate boars and barrows. *Canadian Journal of Animal Science*, 64: 21-27.
- Cliplaf, R.L. i Strain, J.H. (1981). Relationship of sex odor to panel acceptability and certain other organoleptic characteristics of pork chops. *Canadian Journal of Animal Science*, 61: 45-52.
- Cowan, C.A. i Joseph, R.L. (1981). Production and quality of boar and castrate bacon. *Irish Journal of Food Science and Technology*, 5: 105-116.

- deBrabender, H.F., Verbeke, R., Dirinck, P. i Casteels, M. (1985). Boar taint in Belgian Landrace pigs in relation to the androstenone content. *Proceedings 31st European Meeting of Meat Research Workers*, 2: 778-781.
- del Barrio, A. (1997). Estructuras y mercados: consideraciones previas. A: *Porcinocultura: aspectos claves*. Carlos Buxadé Carbó (ed.). pàg.: 19-20. Ediciones Mundi-Prensa, Madrid.
- Denhard, M., Claus, R., Herbert, E. i Hillenbrand, M. (1995). Skatol- und Androstenonkonzentrationen in Fleischerzeugnissen aus Eberschlachtkörpern. *Die Ebermast Schriftenreihe des Bundesministeriums für Ernährung, Landwirtschaften und Forsten, Reihe, Angewandte Wissenschaft*, 449: 55-71.
- Denhard, M., Claus, R., Hillenbrand, M. i Herzog, A. (1993). High-performance liquid chromatographic method for the determination of 3-methyl-indole (skatole) and indole in adipose tissue of pigs. *Journal of Chromatography*, 616: 205-209.
- Desmoulin, B. i Bonneau, M. (1981). Acceptabilité, par le consommateur, des viandes de porcs mâles non-castrés: relations avec la teneur en androstenone des graisses. *Journées Recherche Porcine en France*: 335-340.
- Desmoulin, B., Bonneau, M. i Bourdon, D. (1974). Étude en bilan ayoté et composition corporelle des porcs mâles entiers ou castrés de race Large White. *Journées Recherche Porcine en France*, 6: 247-255.
- Desmoulin, B., Bonneau, M., Frouin, A. i Bidard, J.F. (1982). Consumer testing of pork and processed meat from boars: the influence of fat androstenone level. *Livestock Production Science*, 9: 707-715.
- Diestre, A. (1994). Problemática sobre el uso de cerdos enteros en la producción de carne. *Eurocarne*, 24 (Marzo): 49-51.
- Diestre, A. (2000). Comunicació personal.
- Diestre, A., Oliver, M.A., Gispert, M., Arpa, I. i Arnau, J (1990). Consumer responses to fresh meat and meat products from barrows and boars with different levels of boar taint. *Animal Production*, 50: 519-530.
- Dijksterhuis, G. (1994). Procrustes analysis in studying sensory-instrumental relations. *Food Quality and Preference*, 5: 115-120.
- Dijksterhuis, G. (1995). Multivariate data analysis in sensory and consumer science: an overview of developments. *Trends in Food Science & Technology*, 6(June): 206-211.
- Dijksterhuis, G. (1996). Procrustes analysis in sensory research. A: *Multivariate analysis of data in sensory science*. T. Naes i E.Risvik (ed.). pàg.: 185-219. Elsevier Science. B. V. Holanda.
- Dijksterhuis, G.B. i Font i Furnols, M. (1997). EU project on boar taint: data analysis of the individual panellists in the analytical sensory panels in the 7 countries. Report intern del projecte AIR 3-PL94-2482.

- Dijksterhuis, G.B. i Gower, J.C. (1991/2) The interpretation of generalized Procrustes analysis and allied methods. *Food Quality and Preference*, 3: 67-87.
- Dijksterhuis, G.B. i Punter, P. (1990). Interpreting generalized Procrustes analysis 'Analysis of variance' tables. *Food Quality and Preference*, 2: 255-265.
- Dijksterhuis, G., Walstra, P., Agerhem, H., Font i Furnols, M., Oliver, M.A., Siret, F., Béague, M.P., Claudi-Magnussen, C., Fisher, K. i Cook, G. (1997). Sensory panels on boars: preliminary results. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 20-28. Wageningen Pers. EAAP Publication Núm. 92.
- Dijksterhuis, G., Walstra, P., Agerhem, H., Font i Furnols, M., Oliver, M.A., Siret, F., Beague, M.P., Claudi-Magnussen, C., Fisher, K. i Cook, G. (2000). An international study on the importance of androstenone and skatole for boar taint: II. Sensory evaluation by trained panels in seven European countries. *Meat Science*, 54: 261-269.
- Edwards, S.M., Squires, E.J., van der Mark, P-K. i Steggles, A.W. (1997). Involvement of cytochrome b5 in androstenone biosynthesis. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 66-69. Wageningen Pers. EAAP Publication Núm. 92.
- Elseley, F.W.H. (1968). Bericht über subjektive Versuche und über die Empfindlichkeit verschiedener Personen gegenüber den natürlichen und dem synthetisch produzierten Ebergeruch. *Proceedings European Association for Animal Production, Comission Pig Production*, Dublin.
- EUROSTAT, (1998). Statistical Office of the European Communities.
- Fàbrega, J. (1996). La cultura del porc a la Mediterrània: entre el refús i l'acceptació. A: *L'alimentació Mediterrània*. F.X. Medina (ed.). pàg.: 191-207. Edicions Proa, S.A.
- Falvo, R.E., Chandrashekar, V., Arthur, R.D., Kuenstler, A.R., Hasson, T., Awoniyi, C. i Schanbacher, B.D. (1986). Effect of active immunization against LHRH or LH in boars: reproductive consequences and performance traits. *Journal of Animal Science*, 63: 986-994.
- FAOSTAT, (1998). Organización de las Naciones Unidas por la agricultura y la alimentación. Roma.
- Fischer, K. i Dobrowolski, A. (1995). Sensory evaluation of boar taint by carcass weight, breed and androstenone concentration. *Proceedings European Association for Animal Production Working Group*. Milton Keynes. United Kingdom.
- Friis, C. (1993). Distribution, metabolic fate and elimination of skatole in the pig. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 113-116. INRA Paris, Les Colloques, 60.
- Friis, C. (1995). Is boar taint related to sex differences or polymorphism of skatole metabolism?. *Proceedings European Association for Animal Production Working Group*. Milton Keynes. United Kingdom.

- Font i Furnols, M., Guerrero, L., Serra, X., Rius, M.A. i Oliver, M.A. (2000). Sensory characterization of Boar Taint in entire male pigs. *Journal of Sensory Studies* (acceptat).
- Førland, D.M., Lundström, K. i Andresen, Ø (1980). Relationship between androstenone content in fat, intensity of boar taint and size of accessory sex glands in boars. *Nordisk Veterinaemedicin*, 32(5): 201-206.
- Fouilloux, M.N., Le Roy, P., Gruand, J., Renard, C., Sellier, P. i Bonneau, M. (1997)- Support for single major genes influencing fat androstenone level and development of bulbo-urethral glands in young boars. *Genetics Selection Evolution*, 29: 357-366.
- Fuchs, G. (1972). The correlation between the 5α -androst-16-ene-3-one content and the sex odour intensity in boar fat. *Swedish Journal of Agricultural Research*, 1: 233-237.
- García, C. i López-Bote, C. (1991). Cerdos de cebo castrados o no castrados: olor sexual. *ExpoAviga 91*. XII Symposium Anaporc: 180-198.
- García-Regueiro, J.A., Rius, M.A. i Díaz, I. (1995). Evaluation of boar taint compounds in vapor phase by head space techniques coupled to capillary GC-MS. *Proceedings European Association for Animal Production Working Group*. Milton Keynes. Regne Unit.
- Gilbert, A.N. i Wysocki, C.J. (1987). The smell results: survey. *National Geographic*, October: 514-525.
- Gispert, M., Valero, A., Oliver, M.A. i Diestre, A. (1997). Problemas asociados a la falta de grasa en las canales porcinas. *Eurocarne*, 61: 27-32
- Godt, J., Kristensen, K., Poulsen, C.S., Juhl, H.J. i Bech, A.C. (1996). A consumer study of Danish entire male pigs. *Fleischwirtschaft*, 76 (5): 518-520.
- Gower, D.B. (1972). 16-Unsaturated C19-steroids – a review of their chemistry, biochemistry and possible physiological role. *Journal of Steroid Biochemistry*, 3: 45-103.
- Gower, J.C. (1971). Statistical methods of comparing different multivariate analyses of the same data. A: *Mathematics in the Archaeological and Historical Sciences*. F.R. Hodson, D.G. Kendall i P.Tautu (ed.). pàg.: 138-149. Edinburg University Press.
- Gower, J.C. (1975). Generalized Procrustes Analysis. *Psychometrika*, 40 (1): 33-51.
- Grandhi, R.R. i Cliplef, R.L. (1997). Effects of selection for lower backfat, and increased levels of dietary amino acids to digestible energy on growth performance, carcass merit and quality in boars, gilts, and barrows. *Canadian Journal of Animal Science*, 77 (3): 487-496.
- Green, B.F. (1952). The orthogonal approximation of an oblique structure in factor analysis. *Psychometrika*, 17: 429-440.
- Griffiths, N.M. i Patterson, R.L.S. (1970). Human olfactory responses to 5α -androst-16-ene-3-one-principal component of boar taint. *Journal of Science and Food Agriculture*, 21: 4-6.

- Guerrero, L. (1995). Métodos descriptivos de Análisis sensorial. (I). Métodos clásicos de obtención de perfiles. *Alimentación, Equipos y Tecnología*. Diciembre: 41-46.
- Guerrero, L. (1996a). Selección de catadores. Por qué y cómo. *Mercacei*, marzo: 11-13.
- Guerrero, L. (1996b). Métodos descriptivos de Análisis sensorial. (II). Perfiles de libre elección real y simulada y perfiles de consumidores. *Alimentación, Equipos y Tecnología*, Enero: 163-166.
- Guerrero, L. i Arnau, J. (1997). Análisis sensorial de embutidos y derivados del cerdo. *II Jornadas de Análisis Sensorial*. pàg.: 110-124. Villaviciosa, Asturias, Espanya.
- Guerrero, L., Gou, P. i Arnau, J. (1997). Descriptive analysis of toasted almonds: a comparison between expert and semi-trained assessors. *Journal of Sensory Studies*, 12: 39-54.
- Guerrero, L. i Guàrdia, M.D. (1998). Evaluación de la fiabilidad de un panel de cata. *III Jornadas de Análisis Sensorial*. Villaviciosa, Asturias. Espanya.
- Guy, G., Piggot, J.R. i Marie, S. (1989). Consumer profiling of Scotch whisky. *Food Quality and Preference*, 1(2): 69-73.
- Hansen, L.L. i Larsen, A.E. (1994). Effect of antibiotic feed additives on the level of skatole in fat of male pigs. *Livestock Production Science*, 39: 269-274.
- Hansen, L.L., Larsen, A.E. i Hansen- Møller, J. (1995). Influence of keeping pigs heavily fouled with faeces plus urine on skatole and indole concentration (boar taint) in subcutaneous fat. *Acta Agriculturae Scandinavica. Section Animal Science*, 45: 178-185.
- Hansen, L.L., Larsen, A.E., Jensen, B.B., Hansen-Møller, J. i Barton-Gade, P. (1994). Influence of stocking rate and faeces deposition in the pen at different temperatures on skatole concentration (boar taint) in subcutaneous fat. *Animal Production*, 59: 99-110.
- Hansen, L.L., Lundström, K., Laue, A., Jensen, M.T., Agergaard, N., Bæk, C.Æ. i Hansen-Møller, J. (1997a). Skatole and androstenone pattern during the growth period from 90 to 120 kg live weight in pigs with high or low skatole levels in back fat at slaughter. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 131-134. Wageningen Pers. EAAP Publication Núm. 92.
- Hansen, L.L., Mikkelsen, L.L., Agerhem, H., Laue, A., Jensen, M.T. i Jensen, B.B. (1997b). Effect of fermented liquid feed and zinc bacitracin on microbial metabolism in the gut and sensoric profile of m. longissimus dorsi from entire male and female pigs. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 92-96. Wageningen Pers. EAAP Publication Núm. 92.
- Hansen-Møller, J. (1994). Rapid high-performance liquid chromatographic method for simultaneous determination of androstenone, skatole and indole in back fat from pigs. *Journal of Chromatography*, 661: 219-230.

- Hansen-Møller, J. i Andersen, J.R. (1994). Boar Taint-analytical alternatives. *Fleischwirtschaft*, 74 (9): 963-966.
- Hansen-Møller, J. i Kjeldsen, N.J. (1998). Introduction to Danish research on boar taint. A: *Skatole and boar taint*. W. K. Jensen (ed.). pàg.: 13-20. Danish Meat Research Institute. Roskilde.
- Hansson, K.E., Lundström, K., Fjelkner-Modig, S. i Persson, J. (1980). The importance of androstenone and skatole for boar taint. *Swedish Journal of Agricultural Research*, 10: 167-173.
- Hawe, S.M. (1990). The production and metabolism of indoles in growing pigs. *PhD Thesis*. The Queen's University of Belfast.
- Hawe, S.M. i Walker, N. (1991). The effects of involuntary coprophagy on the production of skatole in growing pigs. *Animal Production*, 53: 105-109.
- Hawe, S.M., Walker, N. i Moss, W. (1992). The effects of dietary fibre, lactose and antibiotic on the levels of skatole and indole in faeces and subcutaneous fat in growing pigs. *Animal Production*, 54: 413-319.
- Hennessy, D., Salvatore, L. i Sali, L. (1995). Incidence of and nature of boar taint in Australian pigs. *Proceedings European Association for Animal Production Working Group*. Milton Keynes. Regne Unit.
- Honikel, K.O. (1993). Boar meat in Germany. *Meat Focus International*-october: 457-458.
- I.F.T. Sensory Evaluation (1975). Guide for Testing Food and Beverages products. Institute of Food Technologists. *Food Technology*, 35: 50-59.
- ISO 3972 (1991). Análisis sensorial. Determinación de la sensibilidad al gusto. *Organization for Standardization*. Genève, Switzerland: 1-8.
- ISO 4120 (1983). Análisis sensorial. Metodología. Test triangular. *Organization for Standardization*. Genève, Switzerland: 1-10.
- ISO 4121 (1987). Análisis sensorial. Metodología. Ordenación de productos alimenticios usando escalas de categorías. *Organization for Standardization*. Genève, Switzerland: 1-10.
- ISO 5495 (1983). Análisis sensorial. Metodología. Test de comparación pareada. *Organization for Standardization*. Genève, Switzerland: 1-7.
- ISO 8586-1 (1993). Analyse sensorielle - Guide général pour la sélection, l'entraînement et le contrôle des sujets. Partie 1: Sujets qualifiés. *Organization for Standardization*. Genève, Switzerland: 1-15.
- ISO 8588 (1988). Análisis sensorial. Metodología. 'A' no 'A' test. *Organization for Standardization*. Genève, Switzerland: 1-10.
- Issanchou, S. (1996). Consumer expectations and perceptions of meat and meat product quality. *Meat Science*, 43: S5-S19.

- Issanchou, S., Schlich, P. i Lesschaeve, I. (1992). Carte sensorielle d'eaux gazeuses. Une application du vocabulaire libre et de l'analyse procustéenne. *IAA*, 109: 181-186.
- Jarmoluk, M., Martin, A.H. i Fredeen, H.T. (1970). Detection of taint (sex odor) in porc. *Canadian Journal of Animal Science*, 50: 750-752.
- Jensen, B.B. i Jensen, M.T. (1998). Microbial production of skatole in the digestive tract of entire male pigs. A: *Skatole and boar taint*. W. K. Jensen (ed.). pàg.: 41-75. Danish Meat Research Institute. Roskilde.
- Jensen, M.T. i Jensen, B.B. (1995). Microbial production of skatole in the hind gut of pigs fed different diets and its relation to skatole deposition in backfat. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Jensen, M.T., Jensen, B.B., Agergaard, N., Hansen, L.L., Mikkelsen, L.L. i Laue, A. (1997). Effect of liquid feed on microbial production of skatole in the hind gut, skatole absorption to portal blood and skatole deposition in backfat. A: *Boar taint in entire male pigs*. Stockholm, Sweden. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 84-87. Wageningen Pers. EAAP Publication Núm. 92.
- Keller, K., Wicke, M. i Lengerken, G. von (1997). Influencing the androstenone concentration of entire male pigs by mating AI boars with known fat androstenone level. A: *Boar taint in entire male pigs*. Stockholm, Sweden. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 119-122. Wageningen Pers. EAAP Publication Núm. 92.
- Kempster, A.J. (1989). Note on the sex results from MLC's first Stotfold trial, prepared for the boar taint working group meeting in Girona. *Boar taint Working Group*, Spain.
- Kempster, A.J., Dilworth, A.W., Evans, D.G. i Fisher, K.D. (1986). The effects of fat thickness and sex on pig meat quality with special reference to the problems associated with overleanness. *Animal Production*, 43: 517-533.
- Kilcast, D. (1993). Sensory evaluation of taints and off-flavours. A: *Food Taints and Off-Flavours*. M.J. Saxby (ed.). pàg.: 1-34. Blackie Academic & Professional. Regne Unit.
- Kjeldsen, N. (1993). Practical experience with production and slaughter of entire male pigs. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs*, Roskilde, Denmark. M. Bonneau (ed.). pàg.: 87-92. INRA Paris, Les Colloques, 60.
- Kristof, W. i Wingersky, B. (1971). Generalization of the orthogonal Procrustes rotation procedure to more than two matrices. *Proceedings of the 70th Annual Convention of the American Psychological Association*, 6: 89-90.
- Larsen, A.E., Hansen, L.L. i Hansen-Møller, J. (1993). Influence of keeping pigs heavily fouled with faeces or clean for at least a week at high stocking rate and high temperature on skatole concentration in subcutaneous fat (boar taint). *Proceedings of the 44th meeting of the European Association for Animal Production*,

Commission on Pig Production, session II. Meat production with entire males.
Vol. II: 350-351.

- Laue, A. (1998). Summary and conclusions relating to biological aspects of skatole and boar taint. A: *Skatole and boar taint*. W. K. Jensen (ed.). pàg.: 203-208. Danish Meat Research Institute. Roskilde.
- Lea, P., Næs, T. i Rødbotten, M. (1997). *Analysis of Variance for Sensory Data*. John Wiley & Sons Ltd. Regne Unit.
- LeDenmat, M., Hervø, N., Vaudelet, J.C. i Bonneau, M. (1993). The effect of slaughter weight on fat androstenone and skatole levels and on the assessment of boar taint in entire male pigs. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 167-171. INRA Paris, Les Colloques, 60.
- Lerche, D. (1936). Geschlechtsgeruch bei Eberkastraten. *Zeitschrift für Fleisch- und Milchhygiene*, 46: 417-420.
- Lin, R.S., Orutt, M.W., Allrich, R.D. i Judge, M.D. (1992). Effect of dietary crude protein content on skatole concentration in boar serum. *Meat Science*, 31: 473-479.
- Lopez-Bote, C i Ventanas, J. (1988). The reduction of boar taint in male pigs by neonatal testosterone administration. *Meat Science*, 22: 163-171.
- Lundström, K. i Malmfors, B. (1993a). Genetic influence of skatole deposition in entire male pigs. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 159-165. INRA Paris, Les Colloques, 60.
- Lundström, K. i Malmfors, B. (1993b). Skatole levels as affected by inheritance and season. *Proceedings 39th International Congress of Meat Science and Technology*, Alberta, Canada. Sessió 2 article 13
- Lundström, K., Malmfors, B., Fjelkner-Modig, S. i Szatek, A. (1982). Consumer testing of boar meat in Sweden. *Swedish Journal of Agricultural Research*, 13: 39-46.
- Lundström, K., Malmfors, B., Malmfors, G., Petersson, H., Stern, S., Mortensen, A.B. i Sørensen, S.E. (1984). Boar taint and bitter taste as affected by androstenone and skatole. *Proceedings 30th European Meeting of Meat Research Workers*. Bristol. MRI-396-6.
- Lundström, K., Malmfors, B., Malmfors, G., Stern, S., Petersson, H., Mortensen, A.B. i Sørensen, S.E. (1988). Skatole, androstenone and taint in boars fed two different diets. *Livestock Prod Sci*, 18: 55-67.
- Lundström, K., Malmfors, B., Stern, S., Rydhmer, L., Eliasson-Selling, L., Mortesen, A.B. i Mortesen, H.P. (1994). Skatole levels in pigs selected for high lean tissue growth rate on different dietary protein levels. *Livestock Production Science*, 38: 125-132.
- Lundström, K., Malmfors, B., Vahlun, S., Kempster, A.J., Andresen, Ø. i Hagelsø, A.M. (1985). Recent research on the use of boars for meat production. *Proceedings*

- European Association for Animal Production Working Group Meeting*, Kallithea, Greece. P3b.1.
- Macfie H.J., Bratchell, N., Greenhoff, K. i Vallis, L.V. (1989). Designs to balance the effect of order of presentation and first-order carry-over effects in hall tests. *Journal of Sensory Studies*, 4: 129-148.
- Malmfors, B. i Hansson, I. (1974). Incidence of boar taint in Swedish Landrace and Yorkshire boars. *Livestock Production Science*, 1: 411-420
- Malmfors, B., Lundström, K. i Hansson, I. (1978). Interrelations between boar taint, 5 α -androstenedione and fatty acid composition in pigs. *Swedish Journal of Agricultural Research*, 8: 161-169.
- Malmfors, B., Lundström, K., Hansson, I. i Gahne, B. (1976). The effects of HCG and LF-RH on 5 α -Androstenedione levels in plasma and adipose tissue of boars. *Swedish Journal of Agricultural Research*, 6: 73-79.
- Malmfors, B., Lundström, K., Hansson, I. i Gahne, B. (1980). Research on boars and boar taint in Sweden. *Proceedings French-Swedish Symposium on monogastric animals*.
- M.A.P.A. (1994). Hechos y cifras del sector Agroalimentario Español. Publicaciones del Ministerio de Agricultura, Pesca y Alimentación.
- M.A.P.A. (1998). Hechos y cifras del sector Agroalimentario Español. Publicaciones del Ministerio de Agricultura, Pesca y Alimentación.
- Martin, A.H. (1969). The problem of sex taint in pork in relation to the growth and carcass characteristics of boars and barrows: a review. *Canadian Journal of Animal Science*, 49: 1-10.
- Matthews, K., Homer, D.B., Punter, P., Béague, M.P., Gispert, M., Kempster, A.J., Agerhem, H., Claudi-Magnussen, C., Fischer, K., Siret, F., Leask, H., Font i Furnols, M. i Bonneau, M. (2000). An international study on the importance of androstenedione and skatole for boar taint: III. Consumer survey in seven European countries. *Meat Science*, 54: 271-283.
- McEwan, J.A. i Schlich, P. (1991/92). Correspondence analysis in sensory evaluation. *Food Quality and Preference*, 3: 23-36.
- Meilgaard, M., Civille, G.V. i Carr, B.T. (1987). Sensory evaluation techniques. CRC Press, Inc., Florida.
- Meloen, R.H., Turkstra, J.A., Lankhof, H., Puijk, W.C., Schaaper, W.M.M., Dijkstra, G., Wensing, C.J.G. i Oonk, R.B. (1994). Efficient immunocastration of male piglets by immunoneutralization of GnRH using a new GnRH-like peptide. *Vaccine*, 12(8): 741-746.
- MINITAB Inc. (1994). MINITAB Reference Manual (Release 10 for Windows).
- Mortensen, A.B., Bejerholm, C. i Pedersen, J.K. (1986). Consumer test of meat from entire males, in relation to skatole in backfat *Proceedings 32nd European Meeting of Meat Research Workers*. Ghent, Bélgica.

- Mortensen, A.B. i Sørensen, S.E. (1984). Relationship between boar taint and skatole determined with a new analysis method. *Proceedings 30th European Meeting of Meat Research Workers*, Bristol, Regne Unit.
- Mortensen, H.P. (1988). Årsagsforhold vedrørende forhøjet skatolindhold i hangrise, - indledende bemærkninger. Arbejde nr. 02.538 - Notat.Slagteriernes Forskningsinstitut, Roskilde, Dinamarca.
- Mortesen, H.P. (1991). Effect of testosterone and estradiol added in the feed on skatole and boar taint level in entire male backfat. *Proceedings 37th International Congress of Meat Science and Technology*. Kulmbach (I): 161-164.
- Moskowitz, H.R. (1983). Product testing and Sensory Evaluation of foods. Food Nutrition Press Inc. Westpoint. Connecticut.
- Moskowitz, H.R. (1995). Food quality: conceptual and sensory aspects. *Food Quality and Preference*, 6 (3): 157-162.
- Moss, B.W., Beattie, V.E. i Weatherup, N. (1997). Effect of increasing slaughter weight on meat quality and boar taint. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 100-103. Wageningen Pers. EAAP Publication Núm. 92.
- Moss, B.W., Hawe, S.M. i Walker, N. (1993). Sensory Thresholds for Skatole and Indole. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 63-68. INRA Paris, Les Colloques.
- Muñoz, A.M. (1997). Importance, Types, and Applications of Consumer Data Relationships. A: *Relating Consumer, Descriptive, and Laboratory Data. To better understand Consumer Responses*. A.M. Muñoz (ed.). ASTM, USA: 1-7.
- Muñoz, A.M. (1998). Consumer perceptions of meat. Understanding these results through descriptive analysis. *Proceedings 44th International Congress of Meat Science and Technology*. Barcelona, Catalunya. Vol 1: 252-259.
- Murphy, C. i Gilmore, M.M. (1990). Effects of Aging on Sensory Functioning: Implications of Dietary Selection. A: *Psychological Basis of Sensory Evaluation*. R.L. McBride i H.J.H. MacFie (eds.). Elsevier Science Publishers.
- Neter, J., Kutner, M., Nachtsheim, C.J. i Wasserman, W. (1996). Applied Linear Statistical Models. Ed. IRWIN.
- Neupert, B., Claus, R., Herbert, E. i Weiler, U. (1995). Einfluß von Geschlecht, Fütterung und Lichtprogrammen auf Mastleistung und Schlachtkörperwert sowie die Androstenon und Skatolbildung beim Schwein. *Züchtungskunde*, 67: 317-331.
- Nold, R.A., Romans, J.R., Costello, W.J., Henson, J.A. i Libal, G.W. (1997). Sensory characteristics and carcass traits of boars, barrows, and gilts fed high- or adequate-protein diets and slaughtered at 100 or 110 kilograms. *Journal of Animal Science*, 75: 2641-2651.
- Nute, G.R., Whittington, F.M., Warriss, P.D. i Wood, J.D. (1995). Sensory analysis of boar taint. Influence of skatole on abnormal odour and flavour ratings. *Proceedings*

- European Association for Animal Production Working Group*. Milton Keynes. Regne Unit.
- O.C.D.E. (1998). Organisation for Economic Co-operation and Development.
- O'Connell, R.J. (1991). Specific anosmias: implications for the physiological mechanisms of quality discrimination. A: *Sensory Science theory and applications in foods*. H.T. Lawless i B.P. Klein (eds.). pàg.: 125-150. Marcel Dekker, Inc., New York. USA.
- O'Connell, R.J., Stevens, D.A. i Zogby, L.M. (1994). Individual differences in the perceived intensity and quality of specific odors following self- and cross-adaptation. *Chemical Senses*, 19 (3): 197-208.
- Oehrle, R.K. (1977). Spezifische dünn-schichtchromatographische Bestimmung von tierischen Steroiden und Östrogenen in Futtermitteln und Kälberurin unter besonderer Berücksichtigung der Dansylierungsreaktion. *Dissertation*. TV. München, Wiehenstephan.
- Oliver, M.A., Gispert, M., Tibau, J. i Diestre, A. (1991). The measurements of light scattering and electrical conductivity for the prediction of PSE pig meat at various times *post mortem*. *Meat Science*, 29: 141-151.
- Onk, H.B., Turkstra, J.A., Lankhof, H., Schaaper, W.M.M., Verheijden, J.H.M. i Meloen, R.H. (1995). Testis size after immunocastration as parameter for the absence of boar taint. *Livestock Production Science*, 42: 63-71.
- OP&P (1992). Procrustes-PC version 2.2. A personal Computer Program for generalised Procrustes analysis. Utrecht: OP&P Software Development.
- Oreskovich, D.C., Klein, B.P. i Sutherland, J.W. (1991). Procrustes Analysis and Its Applications to Free-Choice and Other Sensory Profiling. A: *Sensory Science Theory and Applications in Foods*. H.T. Lawless i Klein, B.P. (eds.). pàg.: 353-293. Marcel Dekker, Inc. New York. USA.
- Øverland, M., Berg, J. i Matre, T. (1995). The effect of feed and feeding regime on skatole and androstenone levels and on sensory attributes of entire male and female pigs. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Patterson, R.L.S. (1968). 5 α -androst-16-ene-3-one: compound responsible for taint in boar fat. *Journal of Science and Food Agriculture*, 19: 31-37.
- Patterson, R.L.S. (1982). Effect of season upon 5 α -androst-16-ene-3-one (Boar taint) concentrations in the subcutaneous fat of commercial weight boars. *Journal of Science and Food Agriculture*, 33: 55-58.
- Patterson, R.L.S. i Lightfoot, A.L. (1984). Effect of sex grouping during growth on 5 α -androst-16-ene-3-one development in boars at three commercial slaughter weights. *Meat Science*, 10: 253-263.
- Peay, E.R. (1988). Multidimensional rotation and scaling of configurations to optimal agreement. *Psychometrika*, 53 (2): 199-208.

- Pierce, J.D., Wysocki, C.J. i Aronov, E.V. (1993). Mutual cross-adaptation of the volatile steroid androstene and a non-steroid perceptual analog. *Chemical Senses*, 18 (3): 245-256.
- Powers, J.J., Cenciarelli, S. i Shinholser, K. (1984). El uso de programas estadísticos generales en la evaluación de los resultados sensoriales. *Revista Agroquímica de Tecnología de los Alimentos*, 24 (4): 469-484.
- Punter, P. i Van Gemert, L. (1984). Onderzoek naar de relatie tussen de detectie van beregeur en het androstenegehalte in berespek. Psychologisch Laboratorium, Rijksuniversiteit Utrecht. Novembre.
- Quiles, S.A. i Hevia, M.L. (1999). Influencia de la castración sobre los rendimientos productivos y la calidad de la canal en el cerdo. *Anaporc*, 186: 52-63.
- Regulacions de la U.E. núm. 3220/84 (1984), for the assessment of the Community scale for grading pig carcasses, amended by Regulation (EC) No. 3513/93, 1993.
- Regulacions de la U.E. núm. 2967/85 (1985) laying down detailed rules for the application of the Community scale for grading pig carcasses, amended by Regulation (EC) No. 3127/94, 1994.
- Rhodes, D.N. (1971). Consumer testing of bacon from boar and gilt pigs. *Journal Science of Food Agriculture*, 22: 485-490.
- Rhodes, D.N. (1972). Consumer testing of pork from boar and gilt pigs. *Journal Science of Food Agriculture*, 23: 1483-1491.
- Risvik, E. (1994). Sensory properties and preferences. *Meat Science*, 36: 67-77.
- Rius, M.A. (1999). Estudio de otros compuestos relacionados con la presencia de olor sexual no atribuible al escatol y a la androstene en grasa dorsal de cerdo. *Tesis Doctoral*. Universitat de Girona.
- Rousset, S., Schlich, P. i Touraille, C. (1990). Traitement statistique de profil sensoriel des jambons secs par analyse Procusteenne generalisee. *Viandes & Produits Carnés*, 11 (6, 6bis, 6ter): 317-318.
- Rousset, S., Wakeling, I., Martin, J.F., Macfie, H. i Touraille, C. (1992). Sensory profile and acceptability scores of different restructures steaks. *Proceedings of the 38th International Congress of Meat Science and Technology*. Clermont-Ferrand, França: 273-276.
- Russell, M.J., Cummings, B.J., Profitt, B.F., Wysoki, C.J., Gilbert, A.N. i Cotman, C.W. (1993). Life span changes in the verbal categorization of odors. *Journal of Gerontology*, 48 (2): P49-P53.
- Santolaria, P. (1993). Influencia de factores genéticos y ambientales sobre los parámetros sensoriales que definen la carne de añojo. *Tesis Doctoral*. Universidad de Zaragoza. Facultad de Veterinaria.
- SAS (1988). SAS/STAT User's Guide Statistics. SAS Institute Inc., Cary, N.C.
- Sather, A.P. (1995). Consumers and pork. *Meat Focus International*. September: 365-371.

- Schlich, P. (1989). A SAS/IML program for generalised Procrustes analysis. SAS European Users Group International Conference. Cologne: 529-537.
- Schlich, P. (1994). GRAPES: A Method and a SAS Program for Graphical Representations of Assessor performances. *Journal of Sensory Studies*, 9: 157-169.
- Schlich, P. (1996). Defining and validating assessor compromises about product distances and attribute correlations. A: *Multivariate analysis of data in sensory science*. T. Næs i E. Risvik (ed.). pàg.: 259-306. Elsevier Science B.V. Holanda.
- Schönemann, P.H. (1966). A generalized solution of the orthogonal Procrustes problem. *Psychometrika*, 33 (1): 1-10.
- Schönemann, H.P. i Carrol, R.M. (1970). Fitting one matrix to another under choice of a central dilation and a rigid motion. *Psychometrika*, 35: 245-255.
- Sellier, P. i Bonneau, M. (1988). Genetic relationships between fat androstenone level in males and development of male and female genital tract in pigs. *Journal of Animal Breeding and Genetics*, 105: 11-20
- Sellier, P., Le Roy, P., Fouilloux, M.N., Gruand, J. i Bonneau, M. (1997). Results of a selection experiment based on an index associating fat androstenone level and bulbo-urethral gland size of young boars. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 123-126. Wageningen Pers. EAAP Publication Núm. 92.
- Siret, F., Béague, M.P., Argy, S., Bouten, B. i Vendevre, J.L. (1995). Influence of androstenone concentration in fat used in a pate de campagne on boar taint intensity and on consumer preferences. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, United Kingdom.
- Siret, F., Béague, M.P., Fischer, K. i Chevillon, P. (1997). Consumer acceptability and characterization of the cooking odour of lardons produced from pork with different androstenone and skatole contents. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 161-164. Wageningen Pers. EAAP Publication Núm. 92.
- Squires, E.J., Adeola, O., Young, G. i Hacker, R.R. (1993). The role of growth hormones β -adrenergic agents and intact males in pork production: A review. *Canadian Journal of Animal Science*, 73: 1-23.
- Squires, E.J., Gullett, E.A., Fisher, K.R.S. i Partlow, G.D. (1991). Comparison of androst-16-ene steroid levels determined by a colorimetric assay with boar taint estimated by a trained sensory panel. *Journal of Animal Science*, 69: 1092-1100.
- Squires, E.J. i Lou, Y. (1995). Levels of boar taint in purebred entire male pigs in Canada. *Proceedings European Association for Animal Production Working Group*. Milton Keynes. Regne Unit.
- Squires, E.J., Lou, Y. i Gibson, J.P. (1996). Boar taint: How Much Is Too Much? A: *Ontario Pork Carcass Appraisal Project Symposium*. J. P. Gibson, C.A. Aker i R.O. Ball (eds.).

- Stamer, S., Nürnberg, K., Kamitz, W. i Kalm, E. (1993). Assessment of boar taint by androstenone and skatole levels and organoleptic tests. A: *Measurement and Prevention of Boar Taint in Entire Male Pigs, Roskilde, Denmark*. M. Bonneau (ed.). pàg.: 87-92. INRA Paris, Les Colloques, 60.
- Stampanoni, C.R. (1994). The use of standardized flavor languages and quantitative flavor profiling technique for flavored dairy products. *Journal of Sensory Studies* 9: 383-400.
- Stevens, D.A. i O'Connell, R.J. (1995). Enhanced sensitivity to androstenone following regular exposure to pimenone. *Chemical Senses*, 20 (4): 413-419.
- Stevens, D.A. i O'Connell, R.J. (1996). Pimenone and androstenone do not cross-adapt reciprocally. *Chemical Senses*, 21 (6): 711-717.
- Støier, S. (1994). Deviating smell in Danish entire male pigs-Relative to skatole and androstenone contents. *Proceedings 40th International Congress of Meat Science and Technology*. The Hague, Holanda.
- Stone, H., Sidel, J., Oliver, S., Woolsey, A. i Singleton, R.C. (1974). Sensory evaluation by quantitative descriptive analysis. *Food technology*, 28 (11): 24-34.
- ten Berge, J.M.F. (1977). Orthogonal Procrustes rotation for two or more matrices. *Psychometrika*, 42 (2): 267-276.
- ten Berge, J.M.F. i Knol, D. (1984). Orthogonal rotations to maximal agreement for two or more matrices of different column orders. *Psychometrika*, 49 (1): 49-55.
- Thompson, R., Pearson, A.M. i Banks, K.A. (1972). Identification of some C19- Δ 16-steroids contributing to sex odor in pork. *Journal of Agricultural and Food Chemistry*, 20 (2): 185-189.
- Tibau, J. (1999). Comunicació personal.
- Turton, J.D. (1962). The effect of castration on meat production and quality in cattle, sheep and pigs. *Animal Breeding Abstracts*, 30 (4): 447-456.
- Uzú, G i Bonneau, M. (1980). Relations entre la production spermatique et la teneur en androsténone dans les graisses du jeune verrat. *Annales Zootechnie*, 29 (I): 23-30.
- Van Oeckel, M.J., Warnants, N., De Paepe, M., Casteels, M. i Boucqué, Ch.V. (1997). Dietary manipulation of the skatole content in the backfat of entire males by using different fibre source in the pig ration. National Institute for Animal Nutrition. Centre for Agricultural Research-Ghent. Communication of the Institute Núm. 1007.
- Ventanas, J., Sancho, G., Garcia-Regueiro, J.A., Antequera, T., Martinez, M. i Lopez-Bote, C. (1991). Testicular development, androstenone levels and androstenone odours of untreated an trenbolone implanted boars. *Journal of the Science and Food Agriculture*, 57: 127-133.
- Vold, E. (1970). Fleishproduktionseigenschaften bei Ebern und Kastraten. IV. Organoleptische und gaschromatografische Untersuchungen Wassedampfflüchtiger

- Stooffe des Rückenspeckes von Ebern. *Meldinger Nordandbruckhoegskole*, 49: 1-25.
- Von Seth, G., Petersson, H. i Tornberg, E. (1995). The influence of slaughter-weight, feeding intensity and lysine level on the content of androstenone and skatole and on the sensory properties of meat from entire males. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Walstra, P., Claudi-Magnussen, C., Chevillon, P. i Cook, G.L. (1997). EU-project on boar taint: Androstenone and skatole levels according to seasons and countries (task 2). A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 11-15. Wageningen Pers. EAAP Publication Núm. 92.
- Walstra, P., Claudi-Magnussen, C., Chevillon, P., von Seth, G., Diestre, A., Matthews, K., Homer, D.B. i Bonneau, M. (1999). An international study on the importance of androstenone and skatole for boar taint: levels of androstenone and skatole by country and season. *Livestock Production Science*, 62: 15-28.
- Walstra, P., Engel, B. i Mateman, G. (1986). The androstenone-skatole dilemma as applied in a consumer test. *Proceedings 32nd European Meeting of Meat Research Workers*. Ghent, Belgium.
- Walstra, P. i Garssen, G.J. (1995). Influence of quality of the pigs and season on androstenone level. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Walstra, P. i Kroeske, D. (1968). The effect of castration on meat production in male pigs. *World Review of Animal Production*, 4: 59-64.
- Walstra, P. i Maarse, H. (1970). Onderzoek geslachtgeur van mannelijke mestvarkens. Researchgroep Vlees en Vleesware. T.N.O., Zeist. The Netherlands. Rap. C-147 and 2: 1-30.
- Walstra, P. i Vermeer, A.W. (1993). Aspects of micro and macro economics in the production of young boars. *44th meeting of European Association for Animal Production Working Group*. Aarhus, Dinamarca. P2.2: 9.
- Warkup, C.C. i Kempster, A.J. (1995). A review of MLC research on the eating quality of meat from entire males and gilts. *Proceedings European Association for Animal Production Working Group*. Milton Keynes, Regne Unit.
- Weiler, U., Dehnhard, M., Herbert, E. i Claus, R. (1995). Einfluß von Geschlecht, Genotyp un Mastendgewicht auf die Androstenon- und Skatolkonzentrationen im Fett von Mastschweinen. A: *Die Ebermast*. Landwirtschaftsverlag Münster. *Angewandte Wissenschaft Heft*, 449: 14-33.
- Weiler, U., Fischer, K., Kemmer, H., Dobrowolski, A. i Claus, R. (1997). Influence of androstenone sensitivity on consumer reactions to boar meat. A: *Boar taint in entire male pigs. Stockholm, Sweden*. M. Bonneau, K. Lundström i B. Malmfors (eds.). pàg.: 147-151. Wageningen Pers. EAAP Publication Núm. 92.

- Weiler, U., Font i Furnols, M., Fischer, K., Kemmer, H., Oliver, M. A., Gispert, M. A., Dobrowolski, A. i Claus, R. (2000). Influence of differences in sensitivity of Spanish and German consumers to perceive androstenone on the acceptance of boar meat differing in skatole and androstenone concentrations. *Meat Science*, 54: 297-304.
- Willeke, H. (1993). Possibilities of breeding for low 5 α -androstenone content in pigs. *Pig News and Information*, 14 (1): 31N-33N.
- Willeke, H., Claus, R., Müller, E., Pirchner, F. i Karg, H. (1987). Selection for high and low level of 5 α -androst-16-en-3-one in boars. I. Direct and correlated response of endocrinological traits. *Journal of Animal Breeding and Genetics*, 104: 64-73.
- Willeke, H., Claus, R., Pirchner, F. i Alsing, W. (1980). A selection experiment against 5 α -androst-16-en-3-one, the boar taint steroid, in adipose tissue of boars. *Sonderdruck aus Zeitschrift für Tierzüchtung und Züchtungsbiologie*, 97 (H.2): 86-94.
- Willeke, H. i Pirchner, F. (1989). Selection for high and low level of 5 α -androst-16-en-3-one in boars. II. Correlations between growth traits and 5- α -androstenone. *Journal of Animal Breeding and Genetics*, 106: 312-317.
- Williams, A.A. (1990). Free Choice Profiling. *Ières Journées Agro-Industrie et Méthodes Statistiques*. Angers. França.
- Williams, A.A. i Langron, S.P. (1984). The use of free-choice profiling for the evaluation of comercial poks. *Journal of the Science of Food and Agriculture*, 35: 558-568.
- Williamson, E.D. i Patterson, R.L.S. (1982). A selective immunization procedure against 5 α -androstenone in boars. *Animal Production*, 35: 353-360.
- Williamson, E.D., Patterson, R.L.S., Buxton, E.R., Mitchell, K.G., Partridge, I.G. i Walker, N. (1985). Immunization against 5 α -androstenone in boars. *Livestock Production Science*, 12: 251-264.
- Wood, J.D., Nute, G.R. Fursey, G.A.J. i Cuthberston, A. (1995). The effect of cooking conditions on the eating quality of pork. *Meat Science*, 40: 127-135.
- Wysocki, C.J. i Beauchamp, G.K. (1984). Ability to smell androstenone is genetically determined. *Proceedings of the Natural Academy of Sciences of the United States of America*, 81: 4899-4902.
- Wysocki, C.J., Dorries, K.M. i Beauchamp, G.K. (1989). Ability to perceive androstenone can be acquired by ostensibly anosmic people. *Proceedings of the Natural Academy of Sciences of the United States of America*, 86: 7976-7978.
- Xue, J.L., Dial, G.D. i Morrison, R.B. (1996). Comparison of the accuracies of chemical and sensory tests for detecting taint in pork. *Livestock Production Science*, 46: 203-211.

Xue, J.L., Dial, G.R. i Pettigrew, J.E. (1997). Performance, carcass, and meat quality advantages of boars over barrows: A literature review. *Swine Health and Production*, 5 (1): 21-28.