Big data - modelling of midges in Europe using machine learning techniques and satellite imagery

Biting midges (Diptera, Ceratopogonidae) of the genus Culicoides are important vectors of pathogens causing diseases in free living and production animals and can lead to large economic losses in many European countries. In Europe, Culicoides imicola and the Obsoletus group are considered to be the main vectors of bluetongue virus that mostly affects ruminants such as cattle and sheep. Spatio-temporal modelling of vector distribution and abundance allows us to identify high risk areas for virus transmission and can aid in applying effective surveillance and control measures.

We used presence-absence and monthly abundance data of Culicoides from 1005 sites across 9 countries (Spain, France, Denmark, Poland, Switzerland, Austria, Poland, Sweden, Norway) collected between the years 2007 and 2013. The dataset included information on the vector species abundance (number of specimens caught per night), GPS coordinates of each trap, start and end dates of trapping. We used 120 environmental predictor variables together with Random Forest machine learning algorithms to predict the overall species distribution (probability of occurrence) and monthly abundance in Europe. We generated maps for every month of the year, to visualize the abundance of C. imicola and Obsoletus group in Europe as well as distribution maps showing the probability of occurrence.

We were able to create predictive maps of both Culicoides sp. occurrence and abundance using Random Forest models, and although the variance was large, the predicted abundance values for each site had a positive correlation with the observed abundance. We found relatively large spatial variations in probability of occurrence and abundance for both C. imicola and the Obsoletus group. For C. imicola probability of occurrence and abundance was higher in southern Spain, where as the Obsoletus group had higher probability of occurrence and abundance in central and northern Europe such as France and Germany. Temporal variation was also observed with higher abundance occurring during summer months and low or no abundance during winter months for both C. imicola and the Obsoletus group, although abundance was generally higher for a longer period of time for C. imicula than for the Obsoletus group.

Using machine learning techniques, we were able to model the spatial distribution in Europe for C. imicola and the Obsoletus group in terms of abundance and suitability (probability of occurrence). Our maps corresponded well with the previously reported distribution for C. imicola and the Obsoletus group. The observed seasonal variation was also consistent with reported population dynamics for Culicoides, as it depends on environmental factors such as temperature and rainfall. Longer seasonal abundance for C. imicula compared to the Obsoletus group can be explained by the species distribution, as C. imicula is limited to the southern parts of Europe where the warm season lasts longer, whereas the Obsoletus group is found further north. The outputs obtained here will be used as input for epidemiological models and can be helpful for determining high risk areas for disease transmission.
Modelling Dietary Exposure to Chemical Components in Heat-Processed Meats

Several chemical compounds that potentially increase the risk of developing cancer in humans are formed during heat processing of meat. Estimating the overall health impact of these compounds in the population requires accurate estimation of the exposure to the chemicals, as well as the probability that different levels of exposure result in disease. The overall goal of this study was to evaluate the impact of variability of exposure patterns and uncertainty of exposure data in burden of disease estimates. We focus on the first phase of burden of disease modelling, i.e. the estimation of exposure to selected compounds in the Danish population, based on concentration and consumption data. One of the challenges that arises in the probabilistic modelling of exposure is the presence of "artificial" zero counts in concentration data due to the detection level of the applied tests. Zeroinflated models, e.g. the Poisson-Lognormal approach, are promising tools to address this obstacle. The exposure estimates can then be applied to dose-response models to quantify the cancer risk.

Outlier Detection in End-User Performance Monitoring - Smart Innovation.

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Social disparities in the prevalence of multimorbidity - A register-based population study: A register-based population study

Prevalences of multimorbidity vary between European studies and several methods and definitions are used. In this study we examine the prevalence of multimorbidity in relation to age, gender and educational attainment and the association between physical and mental health conditions and educational attainment in a Danish population. A cross-sectional design was used to study the prevalence of multimorbidity, defined as two or more chronic conditions, and of comorbid physical and mental health conditions across age groups and educational attainment levels among 1,397,173 individuals aged 16 years and older who lived in the Capital Region of Denmark on January 1st, 2012. After calculating prevalence, odds ratios for multimorbidity and mental health conditions were derived from logistic regression on gender, age, age squared, education and number of physical conditions (only for odds ratios for mental health conditions). Odds ratios for having multimorbidity and mental health conditions for each variable were adjusted for all other variables. Multimorbidity prevalence was 21.6%. Half of the population aged 65 and above had multimorbidity, and prevalence was inversely related to educational attainment: 26.9% (95% CI, 26.8-26.9) among those with lower secondary education versus 13.5% (95% CI, 13.5-13.6) among people with postgraduate education. Adjusted odds ratios for multimorbidity were 0.50 (95% CI, 0.49-0.51) for people with postgraduate education, compared to people with lower secondary education. Among all population members, 4.9% (95% CI, 4.9-4.9) had both a physical and a mental health condition, a proportion that increased to 22.6% of people with multimorbidity. Physical and mental health comorbidity was more prevalent in women (6.33%; 95% CI, 6.3-6.4) than men (3.34%; 95% CI, 3.3-3.4) and approximately 50 times more prevalent among older persons than younger ones. Physical and mental health comorbidity was also twice as prevalent among people with lower secondary education than among those with postgraduate education. The presence of a mental health condition was strongly associated with the number of physical conditions; those with five or more physical conditions had an adjusted odds ratio for a mental health condition of 3.93 (95% CI, 3.8-4.1), compared to those with no physical conditions. Multimorbidity prevalence and patterns in the Danish population are comparable to those of other European populations. The high prevalence of mental and physical health conditions highlights the need to ensure that healthcare systems deliver care that takes physical and mental comorbidity into account. Further, the higher prevalence of multimorbidity among persons with low educational attainment emphasizes the importance of having a health care system providing care that is beneficial to all regardless of socioeconomic status.
Concurrent elevation of CO$_2$, O$_3$ and temperature severely affects oil quality and quantity in rapeseed

Plant oil is an essential dietary and bio-energy resource. Despite this, the effects of climate change on plant oil quality remain to be elucidated. The present study is the first to show changes in oil quality and quantity of four rapeseed cultivars in climate scenarios with elevated [CO$_2$], [O$_3$] and temperature (T) combined and as single factors. The combination of environmental factors resembled IPCC’s ‘business as usual’ emission scenario predicted for late this century. Generally, the climate scenarios reduced the average amounts of the six fatty acids (FAs) analysed, though in some treatments single FAs remained unchanged or even increased. Most reduced was the FA essential for human nutrition, C18:3-ω3, which decreased by 39% and 45% in the combined scenarios with elevated [CO$_2$]+T+[O$_3$] and [CO$_2$]+T, respectively. Average oil content decreased 3–17%. When [CO$_2$] and T were elevated concurrently, the seed biomass was reduced by half, doubling the losses in FAs and oil content. This corresponded to a 58% reduction in the oil yield per hectare, and C18:3-ω3 decreased by 77%. Furthermore, the polyunsaturated FAs were significantly decreased. The results indicate undesirable consequences for production and health benefits of rapeseed oil with future climate change. The results also showed strong interactive effects of CO$_2$, T and O$_3$ on oil quality, demonstrating why prediction of climate effects requires experiments with combined factors and should not be based on extrapolation from single factor experiments.

General information

State: Published
Organisations: Department of Environmental Engineering, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Department of Chemical and Biochemical Engineering, CHEC Research Centre, Atmospheric Environment, Danish Cancer Society, University of Innsbruck
Correlations between fatigue and disease duration, disease activity, and pain in patients with rheumatoid arthritis: a systematic review

OBJECTIVES: Rheumatoid arthritis (RA) patients suffer from disabling fatigue but the causes of this condition are unknown. Our aim was to assess which of the variables disease activity, disease duration, and pain is associated with fatigue. METHOD: We conducted a systematic literature search in MEDLINE and EMBASE, followed by selection of studies according to set criteria, data extraction, and statistical analyses of the relationships in RA between fatigue and the following covariates: disease duration, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), the 28-joint Disease Activity Score (DAS28), swollen to tender joint count ratio (STR), and pain. Linear regression analyses of fatigue regressed on each of the six covariates, and a multiple regression analysis where fatigue was regressed on the six covariates through a forward selection procedure was carried out with construction of correlation measures between fatigue and the covariates. RESULTS: A total of 121 studies were included in the analyses, including > 100 000 RA patients. A high level of fatigue was seen even in well-treated patients, demonstrating fatigue as a major problem in RA. Fatigue was found to be positively correlated with pain, CRP, DAS28, and ESR but not with the STR or disease duration, with pain as the overall dominating factor. CONCLUSIONS: Fatigue has a substantial influence on the lives of RA patients, independent of disease duration. Pain is the dominating factor in the experience and degree of fatigue. Disease activity is positively correlated to fatigue but does not contribute substantially when pain is considered. Optimal pain relief is therefore an important part of the treatment to improve fatigue in RA.
Evaluation of temporal surveillance system sensitivity and freedom from bovine viral diarrhea in Danish dairy herds using scenario tree modelling

The temporal sensitivity of the surveillance system (TemSSe) for Bovine Viral Diarrhea (BVD) in Danish dairy herds was evaluated. Currently, the Danish antibody blocking ELISA is used to test quarterly bulk tank milk (BTM). To optimize the surveillance system as an early warning system, we considered the possibility of using the SVANOVIR ELISA, as this test has been shown to detect BVD-positive herds earlier than the blocking ELISA in BTM tests. Information from data (2010) and outputs from two published stochastic models were fed into a stochastic scenario tree to estimate the TemSSe. For that purpose we considered: the risk of BVD introduction into the dairy population, the ELISA used and the high risk period (HRP) from BVD introduction to testing (at 90 or 365 days). The effect of introducing one persistently infected (PI) calf or one transiently infected (TI) milking cow into 1 (or 8) dairy herd(s) was investigated. Additionally we estimated the confidence in low (PLow) herd prevalence (}
Grain protein concentration and harvestable protein under future climate conditions. A study of 108 spring barley accessions

In the present study a set of 108 spring barley (H. vulgare L.) accessions were cultivated under predicted future levels of temperature and [CO2] as single factors and in combination (IPCC, AR5, RCP8.5). Across all genotypes, elevated [CO2] (700 ppm day/night) slightly decreased protein concentration by 5%, while elevated temperature (+5 °C day/night) substantially increased protein concentration by 29%. The combined treatment increased protein concentration across accessions by 8%. This was an increase less than predicted from strictly additive effects of the individual treatments. Despite the increase in grain protein concentration, the decrease in grain yield at combined elevated temperature and elevated [CO2] resulted in 23% less harvestable protein. There was variation in the response of the 108 accessions, which might be exploited to at least maintain if not increase harvestable grain protein under future climate change conditions.
Obesity Prevention in the Nordic Countries

Previous studies have shown that mean BMI and prevalences of overweight/obesity and obesity have increased over the last decades in the Nordic countries, despite highly regulated societies with a focus on obesity prevention. We review recent overweight/obesity and obesity prevention initiatives within four of the five Nordic countries: Sweden, Denmark, Finland, and Iceland. Moreover, we analyze the current situation based on monitoring data on BMI collected in 2011 and 2014, and obtain overall estimates of overweight/obesity and obesity prevalences for the Nordic Region. Data analysis shows that obesity in adults has increased from 2011 to 2014, while no significant changes were found for children. No significant increases were found for mean BMI and overweight/obesity prevalence. Obesity prevention initiatives among the Nordic countries are highly similar although minor differences are present, which is rooted in transnational Nordic cooperation and comparable societal structures.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, National Food Institute, Division of Risk Assessment and Nutrition, Danish Health Authority
Authors: Stockmarr, A. (Intern), Hejgaard, T. (Ekstern), Matthiessen, J. (Intern)
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Spatial Distribution and Abundance of Culicodes Imicola and Obsolitus Group in Europe

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Organisations: National Veterinary Institute, Epidemiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Aarhus University, Roskilde University, National Veterinary Institute (SVA), Uppsala, Swedden, Bernhard Nocht Institute for Tropical Medicine, Norwegian Veterinary Institute, Institute for Veterinary Public Health, Centre de coopération Internationale en Recherche Agronomique pour le Développement, Universite de Strasbourg, EID Méditerranée, University of the Balearic Islands, Universidad de Zaragoza, Avia-GIS, University of Zurich
Spatial distribution and abundance of Culicoides imicola and obsolutes group in Europe

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The fundament of food, crop protein production, is threatened by climate change

General information
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Type: Article
A 10-day heatwave at flowering superimposed on climate change conditions strongly affects production of 22 barley accessions

Extreme climate events are projected to be among the future most challenging constraints to plant development. Heatwaves as well as floods and droughts cause acute changes in the growth environment determining our primary production (Collins et al., 2013). Europe experienced extreme heatwaves in 2003 and 2006. In 2003, a 21% decrease in the French wheat production was found from temperatures up to 6 °C above long-term means and precipitation being less than 50% of the average (Ciais et al., 2005). One strategy to mitigate the this decrease from heatwaves is to identify resilient cultivars and incorporate them in breeding programs.
Battling Bluetongue and Schmallenberg virus: Local scale behavior of transmitting vectors

General information
State: Published
Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, National Veterinary Institute, Section for Epidemiology
Authors: Stockmarr, A. (Intern), Kirkeby, C. (Intern), Bødker, R. (Intern)
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Battling Bluetongue and Schmallenberg virus: Local scale behavior of transmitting vectors
Publication: Research › Sound/Visual production (digital) – Annual report year: 2015
Challenges for bovine viral diarrhoea virus antibody detection in bulk milk by antibody enzyme-linked immunosorbent assays due to changes in milk production levels

Background: Bovine viral diarrhoea (BVD) is considered eradicated from Denmark. Currently, very few (if any) Danish cattle herds could be infected with BVD virus (BVDV). The Danish antibody blocking enzyme-linked immunosorbent assay (ELISA) has been successfully used during the Danish BVD eradication program, initiated in 1994. During the last decade, the cattle herd size has increased while the prevalence of BVDV has decreased. In this study, we investigated how these changes could affect the performance of the Danish blocking ELISA and of the SVANOVIR® BVDV-Ab indirect ELISA. The latter has successfully been used to eradicate BVD in Sweden. Data (2003–2010) on changes in median herd size and milk production levels, occurrence of viremic animals and bulk milk surveillance were analysed. Additionally, the Danish blocking ELISA and the SVANOVIR ELISA were compared analyzing milk and serum samples. The prevalence of antibody positive milking cows that could be detected by each test was estimated, by diluting positive individual milk samples and making artificial milk pools. Results: During the study period, the median herd size increased from 74 (2003) to 127 cows (2010), while the prevalence of BVDV infected herds decreased from 0.51 to 0.02 %. The daily milk yield contribution of a single seropositive cow to the entire daily bulk milk was reduced from 1.61 % in 2003 to 0.95 % in 2010 due to the increased herd size. It was observed that antibody levels in bulk milk decreased at national level. Moreover, we found that when testing bulk milk, the SVANOVIR® BVDV-Ab can detect a lower prevalence of seropositive lactating cows, compared to the Danish blocking ELISA (0.78 % vs. 50 %). Values in the SVANOVIR® BVDV-Ab better relate to low concentrations of antibody positive milk (R² = 94-98 %), than values in the blocking ELISA (R² = 23–75 %). For sera, the two ELISAs performed equally well. Conclusions: The SVANOVIR ELISA is recommended for analysis of bulk milk samples in the current Danish situation, since infected dairy herds e.g. due to import of infected cattle can be detected shortly after BVDV introduction, when only few lactating cows have seroconverted. In sera, the two ELISAs can be used interchangeably.
Bibliographical note
© 2015 Foddai et al. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any
Characterization of the bacterial gut microbiota of piglets suffering from new neonatal porcine diarrhoea

Background: In recent years, new neonatal porcine diarrhoea (NNPD) of unknown aetiology has emerged in Denmark. NNPD affects piglets during the first week of life and results in impaired welfare, decreased weight gain, and in the worst-case scenario death. Commonly used preventative interventions such as vaccination or treatment with antibiotics, have a limited effect on NNPD. Previous studies have investigated the clinical manifestations, histopathology, and to some extent, microbiological findings; however, these studies were either inconclusive or suggested that Enterococci, possibly in interaction with Escherichia coli, contribute to the aetiology of NNPD. This study examined ileal and colonic luminal contents of 50 control piglets and 52 NNPD piglets by means of the qPCR-based Gut Microbiotassay and 16 samples by 454 sequencing to study the composition of the bacterial gut microbiota in relation to NNPD. Results: NNPD was associated with a diminished quantity of bacteria from the phyla Actinobacteria and Firmicutes while genus Enterococcus was more than 24 times more abundant in diarrhoeic piglets. The number of bacteria from the phylum Fusobacteria was also doubled in piglets suffering from diarrhoea. With increasing age, the gut microbiota of NNPD affected piglet and control piglets became more diverse. Independent of diarrhoeic status, piglets from first parity sows (gilds) possessed significantly more bacteria from family Enterobacteriaceae and species E. coli, and fewer bacteria from phylum Firmicutes. Piglets born to gilts had 25 times higher odds of having NNPD compared with piglets born to multiparous sows. Finally, the co-occurrence of genus Enterococcus and species E. coli contributed to the risk of having NNPD. Conclusion: The results of this study support previous findings that points towards genus Enterococcus and species E. coli to be involved in the pathogenesis of NNPD. Moreover, the results indicate that NNPD is associated with a disturbed bacterial composition and larger variation between the diarrhoeic piglets.

General information
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Organisations: National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, Section for Immunology and Vaccinology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Department of Chemical and Biochemical Engineering, Center for BioProcess Engineering, Danish Genome Institute, Danish Agriculture and Food Council
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BFI (2016): BFI-level 1
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Web of Science (2016): Indexed yes
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.885 SNIP 0.987 CiteScore 1.81
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.829 SNIP 0.833 CiteScore 1.85
ISI indexed (2013): ISI indexed yes
Fitting a distribution to microbial counts: Making sense of zeroes

The accurate estimation of true prevalence and concentration of microorganisms in foods is an important element of quantitative microbiological risk assessment (QMRA). This estimation is often based on microbial detection and enumeration data. Among such data are artificial zero counts, that originated by chance from contaminated food products. When these products are not differentiated from uncontaminated products that originate true zero counts, the estimates of true prevalence and concentration may be inaccurate. This inaccuracy is especially relevant in situations where highly pathogenic bacteria are involved and where growth can occur along the food pathway. Our aim was to develop a method that provides accurate estimates of concentration parameters and differentiates between artificial and true zeroes, thus also accurately estimating true prevalence.

We first show the disadvantages of using a limit of quantification (LOQ) threshold for the analysis of microbial enumeration data. We show that, depending on the original distribution of concentrations and the LOQ value, it may be incorrect to treat artificial zeroes as censored below a quantification threshold.

Next, a method is developed that estimates the true prevalence of contamination within a food lot and the parameters characterizing the within-lot distribution of concentrations, without assuming a LOQ, and using raw plate count data as an input. Counts resulting both from contaminated and uncontaminated sample units are analysed together. This procedure allows the estimation of the proportion of artificial zeroes among the total of zero counts, and therefore the estimation of true prevalence from enumeration results.

We observe that this method yields best estimates of mean, standard deviation and prevalence at low true prevalence levels and low expected standard deviation. Furthermore, we conclude that the estimation of prevalence and the estimation of the distribution of concentrations are interrelated and therefore should be estimated simultaneously. We also conclude that one of the keys to an accurate characterization of the overall microbial contamination is the correct identification and separation of true and artificial zeroes.

Our method for the analysis of quantitative microbial data shows a good performance in the estimation of true prevalence and the parameters of the distribution of concentrations, which indicates that it is a useful data analysis tool in the field of QMRA.
GWAS of Barley Phenotypes Established Under Future Climate Conditions of Elevated Temperature, CO2, O3 and Elevated Temperature and CO2 Combined

Climate change is likely to decrease crop yields worldwide. Developing climate resilient cultivars is one way to combat this production scarcity, however, little is known of crop response to future climate conditions and in particular the variability within crops. In Scandinavia, barley is widely cultivated, but yields have stagnated since the start of this century. In this study we cultivated 138 spring barley accessions in a climate phytotron under four treatments mimicking forecasted levels of temperature, carbon dioxide concentration ([CO2]), and ozone ([O3]) at the end of the 21st century1. The ambient control had 19/12°C (day/night) and [CO2] at 385ppm. Three single-factor treatments had elevated temperature +5°C day/night, [CO2] at 700ppm or [O3] at 120 ppb, and in a two-factor treatment the combination of elevated temperature and [CO2] was applied. Treatment effects were assessed on grain yield, grain protein concentration, grain protein harvested, number of grains, number of ears, aboveground vegetative biomass and harvest index. In addition, stability of the production was calculated over the applied treatments for the assessed parameters. In the climate scenario of elevated temperature and [CO2] the grain yield of barley decreased 29% and harvested grain protein declined 22%. Vast variation was identified among the individual barley accessions, which should be exploited by plant breeders in the development of climate resilient cultivars. A genome-wide association study (GWAS) of recorded phenotypes and 3967 SNP-markers identified 60 marker-trait associations (-logp>2.95)2. Markers were found associated with grain yield under all three single factor treatments temperature, [CO2] and [O3], as well as with stability over treatments. To our knowledge, this is the first study that evaluates numerous barley accessions under future climate conditions and identifies candidate markers for abiotic stress tolerance - markers that could be used in the development of cultivars to secure future primary production.
IC3 and IC4 Trains Under Risk of Blocking their Wheels

General information
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Authors: Stockmarr, A. (Intern)
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Model for TampImp-DeltaSigmaH Interaction.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Spooner, M. P. (Intern), Stockmarr, A. (Intern), Thyregod, C. (Intern), Ersbøll, B. K. (Intern)
Number of pages: 40
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Significant decrease in yield under future climate conditions: Stability and production of 138 spring barley accessions

The response in production parameters to projected future levels of temperature, atmospheric carbondioxide ([CO₂]), and ozone ([O₃]) was investigated in 138 spring barley accessions. The comprehensive set of landraces, cultivars, and breeder-lines, were during their entire life cycle exposed to a two-factor treatment of combined elevated temperature (+5°C day/night) and [CO₂] (700 ppm), as well as single-factor treatments of elevated temperature (+5°C day/night), [CO₂] (700 ppm), and [O₃] (100–150 ppb). The control treatment was equivalent to present average South Scandinavian climate (temperature: 19/12°C(day/night), [CO₂]: 385 ppm). Overall grain yield was found to decrease 29% in the two-factor treatment with concurrent elevation of [CO₂] and temperature, and this response could not be predicted from the results of treatments with elevated [CO₂] and temperature as single factors, where grain yield increased 16% and decreased 56%, respectively. Elevated [O₃] was found to decrease grain yield by 15%. Substantial variation in response to the applied climate treatments was found between the accessions. The results revealed landraces, cultivars, and breeder-lines with phenotypes applicable for breeding towards stable and high yield under future climate conditions. Further, we suggest identifying resources for breeding under multifactor climate conditions, as single-factor treatments did not accurately forecast the response, when factors were combined.
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Scopus rating (2012): SJR 1.376 SNIP 2.151 CiteScore 3.47
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.37 SNIP 2.253 CiteScore 2.99
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BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.429 SNIP 2.106
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
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Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.222 SNIP 1.747
Scopus rating (2007): SJR 0.845 SNIP 1.406
Scopus rating (2006): SJR 1.255 SNIP 1.763
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.231 SNIP 1.693
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Scopus rating (2003): SJR 0.705 SNIP 1.15
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Web of Science (2002): Indexed yes
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Social ulighed i fedme og fedme-epidemien for børn

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A Comparison between Two Simulation Models for Spread of Foot-and-Mouth Disease

Two widely used simulation models of foot-and-mouth disease (FMD) were used in order to compare the models’ predictions in terms of disease spread, consequence, and the ranking of the applied control strategies, and to discuss the effect of the way disease spread is modeled on the predicted outcomes of each model. The DTU-DADS (version 0.100), and ISP (version 2.001.11) were used to simulate a hypothetical spread of FMD in Denmark. Actual herd type, movements, and location data in the period 1st October 2006 and 30th September 2007 was used. The models simulated the spread of FMD using 3 different control scenarios: 1) A basic scenario representing EU and Danish control strategies, 2) pre-emptive depopulation of susceptible herds within a 500 meters radius around the detected herds, and 3) suppressive vaccination of susceptible herds within a 1,000 meters radius around the detected herds. Depopulation and vaccination started 14 days following the detection of the first infected herd. Five thousand index herds were selected randomly, of which there were 1,000 cattle herds located in high density cattle areas and 1,000 in low density cattle areas, 1,000 swine herds located in high density swine areas and 1,000 in low density swine areas, and 1,000 sheep herds. Generally, DTU-DADS predicted larger, longer duration and costlier epidemics than ISP, except when epidemics started in cattle herds located in high density cattle areas. ISP supported suppressive vaccination rather than pre-emptive depopulation, while DTU-DADS was indifferent to the alternative control strategies. Nonetheless, the absolute differences between control strategies were small making the choice of control strategy during an outbreak to be most likely based on practical reasons.

General information
State: Published
Organisations: National Veterinary Institute, Section for Epidemiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Dynamical Systems
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Number of pages: 8
Publication date: 2014
Main Research Area: Technical/natural sciences

Publication information
Danish children born to parents with lower levels of education are more likely to become overweight

AIM:
Little is known about whether the socio-economic status of parents is linked to their children becoming overweight. This study examined the association between parents’ educational level and overweight Danish children in a nationally representative sample.

METHODS:
Body mass index was calculated for a random sample of 512 children aged from four to 14 from the Danish National Survey of Diet and Physical Activity 2005-2008. Their parents provided weight and height data during an interview, together with details of their own educational level. Children were classified as overweight/obese in accordance with the International Obesity Task Force. Frequency estimates of prevalence and logistic regression models were used to correlate childhood overweight/obesity with the mothers’ and fathers’ educational levels as the main outcome measures.

RESULTS:
Danish mothers tended to be more highly educated than fathers and their educational level was inversely associated with their child being overweight, especially if it was a boy. However, the highest educational level of the parents was the only significant educational variable, suggesting that education was associated with overweight children irrespective of the gender of the parent.

CONCLUSION:
Public health initiatives should target parents with low educational levels to prevent, and reduce, social inequality in overweight children.

General information
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Organisations: National Food Institute, Division of Nutrition, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Matthiessen, J. (Intern), Stockmarr, A. (Intern), Fagt, S. (Intern), Knudsen, V. K. (Intern), Biltoft-Jensen, A. P. (Intern)
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Scopus rating (2014): SJR 0.123 SNIP 0.937 CiteScore 1.59
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Scopus rating (2011): SJR 0.105 SNIP 0.988 CiteScore 1.81
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BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.104 SNIP 0.986
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Factors influencing observed and self-reported functional ability in women with chronic widespread pain: A cross-sectional study

**Objective:** To evaluate the relationships between key outcome variables, classified according to the International Classification of Functioning, Disability and Health (ICF), and observed and self-reported functional ability in patients with chronic widespread pain.

**Design:** Cross-sectional with systematic data collection in a clinical setting. Subjects: A total of 257 consecutively enrolled women with chronic widespread pain.

**Methods:** Multidimensional assessment using self-report and observation-based assessment tools identified to cover ICF categories included in the brief ICF Core Set for chronic widespread pain.

**Results:** Relationships between ICF variables and observed functional ability measured with the Assessment of Motor and Process Skills (AMPS) were few. Out of 36 relationships analysed, only 4 ICF variables showed a moderate correlation with the AMPS motor ability measure. A moderate to strong correlation between numerous ICF variables and self-reported functioning was noted. Multivariate regression modelling supported significant contributions from pain and psychosocial...
variables to the variability in self-reported functional ability, but not to the variability in AMPS ability measures.

**Conclusion:** Observation-based assessment of functional ability in patients with chronic widespread pain is less influenced by pain and psychosocial factors than are self-reported evaluations. Valid observation-based assessment tools, such as the AMPS, should be included in clinical evaluation and future research addressing functional outcomes in this patient population.

**General information**

State: Published

Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, University of Southern Denmark, Copenhagen University Hospital

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- BFI (2013): BFI-level 2
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- Scopus rating (2011): SJR 1.11 SNIP 1.302 CiteScore 2.34
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- BFI (2010): BFI-level 2
- Scopus rating (2010): SJR 1.081 SNIP 1.324
- BFI (2009): BFI-level 2
- Scopus rating (2009): SJR 0.916 SNIP 1.097
- BFI (2008): BFI-level 2
- Scopus rating (2008): SJR 1.066 SNIP 1.175
- Scopus rating (2007): SJR 1.123 SNIP 2.764
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- Scopus rating (2003): SJR 0.58 SNIP 0.098
- Scopus rating (2002): SJR 0.643 SNIP 1.134
- Scopus rating (2001): SJR 0.73 SNIP 0.444
- Scopus rating (2000): SJR 0.645 SNIP 0.042
- Scopus rating (1999): SJR 0.68 SNIP 0
Fluorescence in situ hybridization investigation of potentially pathogenic bacteria involved in neonatal porcine diarrhea

Background

Neonatal diarrhea is a multifactorial condition commonly present on pig farms and leads to economic losses due to increased morbidity and mortality of piglets. Immature immune system and lack of fully established microbiota at birth predispose neonatal piglets to infection with enteric pathogens. The microorganisms that for decades have been associated with enteritis and diarrhea in suckling piglets are: rotavirus A, coronavirus, enterotoxigenic Escherichia coli (ETEC), Clostridium perfringens type C, Cryptosporidium spp., Giardia spp., Cystoisospora suis and Strongyloides ransomi. However, in recent years, the pig industry has experienced an increased number of neonatal diarrhea cases in which the above mentioned pathogens are no longer detected. Potentially pathogenic bacteria have recently received focus in the research on the possible etiology of neonatal diarrhea not caused by common pathogens. The primary aim of this study was to investigate the role of E. coli, Enterococcus spp., C. perfringens and C. difficile in the pathogenesis of neonatal porcine diarrhea with no established casual agents. Fluorescence in situ hybridization with oligonucleotide probes was applied on the fixed intestinal tissue samples from 51 diarrheic and 50 non-diarrheic piglets collected from four Danish farms during outbreaks of neonatal diarrhea not caused by well-known enteric pathogens. Furthermore, an association between the presence of these bacteria and histological lesions was evaluated.

Results

The prevalence of fluorescence signals specific for E. coli, C. perfringens and C. difficile was similar in both groups of piglets. However, Enterococcus spp. was primarily detected in the diarrheic piglets. Furthermore, adherent bacteria were detected in 37 % diarrheic and 14 % non-diarrheic piglets. These bacteria were identified as E. coli and Enterococcus spp. and their presence in the intestinal mucosa was associated with histopathological changes.

Conclusions

The results of this study showed that simultaneous colonization of the intestinal mucosa by adherent non-ETEC E. coli and Enterococcus spp. can be involved in the pathogenesis of neonatal porcine diarrhea. These bacteria should be considered in diagnosis of diarrhea in piglets, when detection of common, well-known enteric agents is unsuccessful.
A quantitative risk assessment was carried out to estimate the likelihood of introducing bovine viral diarrhea virus (BVDV) in Danish dairy herds per year and per trimester, respectively. The present study gives important information on the impact of risk mitigation measures and sources of uncertainty due to lack of data. As suggested in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement), the OIE Terrestrial Animal Health Code was followed for a transparent science-based risk assessment.

Data from 2010 on imports of live cattle, semen, and embryos, exports of live cattle, as well as use of vaccines were analyzed. Information regarding the application of biosecurity measures, by veterinarians and hoof trimmers practicing in Denmark and in other countries, was obtained by contacting several stakeholders, public institutions, and experts. Stochastic scenario trees were made to evaluate the importance of the various BVDV introduction routes. With the current surveillance system, the risk of BVDV introduction was estimated to one or more introductions within a median of nine years (3–59). However, if all imported animals were tested and hoof trimmers always disinfected the tools used abroad, the risk could be reduced to one or more introductions within 33 years (8–200). Results of this study can be used to improve measures of BVD surveillance and prophylaxis in Danish dairy herds.
Stochastic simulation modeling to determine time to detect Bovine Viral Diarrhea antibodies in bulk tank milk

A stochastic simulation model was developed to estimate the time from introduction of Bovine Viral Diarrhea Virus (BVDV) in a herd to detection of antibodies in bulk tank milk (BTM) samples using three ELISAs. We assumed that antibodies could be detected, after a fixed threshold prevalence of seroconverted milking cows was reached in the herd. Different thresholds were set for each ELISA, according to previous studies. For each test, antibody detection was simulated in small (70 cows), medium (150 cows) and large (320 cows) herds. The assays included were: (1) the Danish blocking ELISA, (2) the SVANOVIR®BVDV-Ab ELISA, and (3) the ELISA BVD/MD p80 Institute Pourquier. The validation of the model was mainly carried out by comparing the predicted incidence of persistently infected (PI) calves and the predicted detection time, with records from a BVD infected herd. Results showed that the SVANOVIR, which was the most efficient ELISA, could detect antibodies in the BTM of a large herd 280 days (95% prediction interval: 218; 568) after a transiently infected (TI) milking cow has been introduced into the herd. The estimated time to detection after introduction of one PI calf was 111 days (44; 605). With SVANOVIR ELISA the incidence of PIs and dead born calves could be limited and the impact of the disease on the animal welfare and income of farmers (before detection) could be minimized. The results from the simulation modeling can be used to improve the current Danish BVD surveillance program in detecting early infected herds.
The Relationship between Mechanical Hyperalgesia Assessed by Manual Tender Point Examination and Disease Severity in Patients with Chronic Widespread Pain: A Cross-Sectional Study

The clinical utility of tender point (TP) examination in patients reporting chronic widespread pain (CWP) is the subject of contemporary debate. The objective of this study was to assess the relationship between mechanical hyperalgesia assessed by manual TP examination and clinical disease severity. 271 women with CWP were recruited from a clinical setting. Data collection included patient-reported symptoms, health-related quality of life variables, and observation-based measures of functional ability, muscle strength, 6-minute walk, and pressure pain thresholds measured by cuff algometry. TP examination was conducted according to ACR-guidelines. Relationships between disease variables and TP count (TPC) were analyzed with logistic regression in a continuum model, allowing the TPC to depend on the included disease variables and two regression models carried out for a TPC threshold level, varying between 1 and 17. The threshold analyses indicated a TPC threshold at 8, above which a large number of disease variables became consistently significant explanatory factors, whereas none of the disease variables reached a significance level in the continuum model. These results support the premise that the presence of mechanical hyperalgesia influences symptomatology in CWP and that the severity of clinical expression is related to a threshold of TPs, rather than being part of a continuum.
**Trends in overweight and obesity in Danish children and adolescents: 2000-2008 – exploring changes according to parental education**

**Aims:** To examine the hypotheses that an overall levelling off in the prevalence of overweight and obesity during the period 2000-2008 has occurred, and that increasing social inequality in overweight and obesity exists in a nationally representative sample of Danish children and adolescents.

**Methods:** The population comprised a random sample of 1849 children aged 4-14 years who participated in the Danish National Survey of Diet and Physical Activity in 2000-2002, 2003-2004 and 2005-2008. Parental education was chosen as an indicator of children's socioeconomic status. Body mass index (BMI) was calculated from parent-reported weight and height. Subjects were classified as overweight and obese according to the International Obesity Task Force age- and gender-specific BMI cut-off values. Crude prevalence estimates and logistic regression models were used to analyse trends in overweight and obesity as the main outcome measures.

**Results:** An increase was found in the crude prevalence of overweight (including obesity) in boys (12.8-21.7%, p = 0.0006), but not in girls (17.6-15.9%, p = 0.56), between 2000-2002 and 2005-2008. The prevalence of overweight increased significantly in boys of parents with low educational level only. A strong inverse social gradient in overweight and obesity was documented for boys and girls during the whole survey period.

**Conclusions:** The present study showed an increase in the prevalence of overweight in Danish boys, but not in girls. This increase was due to increasing social inequality in overweight among boys. Public health initiatives aimed at preventing and reducing overweight and obesity should consider gender difference and especially target boys with parents of low educational level.
Cell-Mediated and Humoral Immune Responses after Immunization of Calves with a Recombinant Multiantigenic Mycobacterium avium subsp. paratuberculosis Subunit Vaccine at Different Ages

Neonates and juvenile ruminants are very susceptible to paratuberculosis infection. This is likely due to a high degree of exposure from their dams and an immature immune system. To test the influence of age on vaccine-induced responses, a cocktail of recombinant Mycobacterium avium subsp. paratuberculosis proteins (MAP0217, MAP1508, MAP3701c, MAP3783, and MAP1609c/Ag85B) was formulated in a cationic liposome adjuvant (CAF01) and used to vaccinate animals of different ages. Male jersey calves were divided into three groups that were vaccinated at 2, 8, or 16 weeks of age and boosted twice at weeks 4 and 12 relative to the first vaccination. Vaccine-induced immune responses, the gamma interferon (IFN-γ) cytokine secretion and antibody responses, were followed for 20 weeks. In general, the specific responses were significantly elevated in all three vaccination groups after the first booster vaccination with no or only a minor effect from the second booster. However, significant differences were observed in the immunogenicity levels of the different proteins, and it appears that the older age group produced a more consistent IFN-γ response. In contrast, the humoral immune response is seemingly independent of vaccination age as we found no difference in the IgG1 responses when we compared the three vaccination groups. Combined, our results suggest that an appropriate age of vaccination should be considered in vaccination protocols and that there is a possible interference of vaccine-induced immune responses with weaning (week 8).
Dynamic changes in antibody levels as an early warning of Salmonella Dublin in bovine dairy herds

Salmonella Dublin is a bacterium that causes disease and production losses in cattle herds. In Denmark, a surveillance and control program was initiated in 2002 to monitor and reduce the prevalence of Salmonella Dublin. In dairy herds, the surveillance includes herd classification based on bulk tank milk measurements of antibodies directed against Salmonella Dublin at 3-mo intervals. In this study, an "alarm herd" concept, based on the dynamic progression of these repeated measurements, was formulated such that it contains predictive power for Salmonella Dublin herd classification change from "likely free of infection" to "likely infected" in the following quarter of the year, thus warning the farmer 3mo earlier than the present system. The alarm herd concept was defined through aberrations from a stable development over time of antibody levels. For suitable parameter choices, alarm herd status was a positive predictor for Salmonella Dublin status change in dairy herds, in that alarm herds had a higher risk of changing status in the following quarter compared with nonalarm herds. This was despite the fact that both alarm and nonalarm herds had antibody levels that did not indicate the herds being "likely infected" according to the existing classification system in the present quarter. The alarm herd concept can be used as a new early warning element in the existing surveillance program. Additionally, to improve accuracy of herd classification, the alarm herd concept could be incorporated into a model including other known risk factors for change in herd classification. Furthermore, the model could be extended to other diseases monitored in similar ways.

General information
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Organisations: Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, National Veterinary Institute, Section for Epidemiology, University of Copenhagen
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Increasing social inequality in overweight in Danish boys

General information
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Organisations: National Food Institute, Division of Nutrition, Technical University of Denmark
Authors: Matthiessen, J. (Intern), Stockmarr, A. (Intern), Biltoft-Jensen, A. P. (Intern), Fagt, S. (Intern), Zhang, H. (Ekstern), Groth, M. V. (Intern)
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Making sense of zeros: impact on human health risk estimates

General information
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Organisations: National Food Institute, Division of Epidemiology and Microbial Genomics, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Ribeiro Duarte, A. S. (Intern), Stockmarr, A. (Intern), Nauta, M. (Intern)
Pages: 55
Publication date: 2013
Wild aquatic birds are the natural reservoir of avian influenza virus (AIV), and the virus is transmitted among birds through a fecal-oral route. Infected birds excrete significant amounts of AIV into the environment, and thereby sustain the circulation of AIV in the bird populations. Improved knowledge on the influence of environmental factors on the persistence of AIV in natural habitats would be valuable for risk assessments. The presented work investigated the persistence of two low-pathogenic AIV subtypes in natural water samples. The study included two AIVs formerly isolated from wild ducks, which were suspended in filtered natural fresh, brackish or sea water with salinity of 0, 8000 and 20,000 parts per million (ppm), respectively. Also sterilized brackish and sea waters were included in order to examine the influence of microbial flora on virus persistence. All water samples were incubated at temperatures representative for seasonal variation of ambient temperatures in Northern Europe (4, 17 and 25°C). The results showed a clear correlation between persistence of viral infectivity and temperature, salinity and presence of microbial flora. While independent of virus subtype, the persistence of infectivity was negatively affected by increased temperature, salinity as well as presence of natural microbial flora. The study provides insight on impact of essential physical, chemical and biological parameters on persistence of AIV in aquatic environments. Studies determining the importance of additional environmental parameters and the detailed mechanisms of microbial inactivation of AIV should be encouraged.
PMWS development in pigs from affected farms in Spain and Denmark

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PMWS development in pigs from affected farms in Spain and Denmark

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PMWS development in pigs from affected farms in Spain and Denmark
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PMWS Development in Pigs from Affected Farms in Spain and Denmark
Postweaning multisystemic wasting syndrome (PMWS) is a worldwide spread condition that affects pigs in nursery and/or fattening units, and is considered to have a severe economic impact on swine production. The main clinical sign of PMWS is wasting, but can also include pallor of the skin, icterus, respiratory distress and diarrhoea. The main essential infectious agent for PMWS development is porcinecircovirus type 2 (PCV2), but the exact cause of PMWS is still unclear. PCV2 is present in most pig herds, but the occurrence of PMWS is more sporadic, and it is been difficult to reproduce PMWS by inoculating PCV2 alone. However, studies where co-infections have been applied have been more successful. Based on this, we modeled PMWS development based on longitudinal data on antibodies and PMWS status from herds in Denmark and Spain, where presence of a range of pathogens were considered as explanatory variables in the form of maternal immunity and the occurrence of seroconversion against the considered pathogens. However, maternal immunity could not be measured from mother animals due to cross fostering, no time points for seroconversion was available, and no case/control status could be assigned as PMWS do not have an ‘infectious period’ after which animals may be assigned control status. The talk will concentrate on the framework in which this was handled, which may be translated to similar settings for similar studies. We found that seroconversion towards PCV2 and Lawsonia intracellularis had a significant impact on PMWS in the Danish data, but it appears that the effect is positive, in the sense that seroconverted animals were less likely to develop PMWS. A number of maternal immunities also significantly affected PMWS development. Furthermore it was uncovered that most of these effects would not have been detected if pathogens were considered by themselves and not simultaneously.

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Quantifying Dispersal of European Culicoides (Diptera: Ceratopogonidae) Vectors between Farms Using a Novel Mark-Release-Recapture Technique

Studying the dispersal of small flying insects such as Culicoides constitutes a great challenge due to huge population sizes and lack of a method to efficiently mark and objectively detect many specimens at a time. We here describe a novel mark-release-recapture method for Culicoides in the field using fluorescein isothiocyanate (FITC) as marking agent without anaesthesia. Using a plate scanner, this detection technique can be used to analyse thousands of individual Culicoides specimens per day at a reasonable cost. We marked and released an estimated 833 specimens of the Pulicaris group and 607 specimens of the Obsoletus group on a cattle farm in Denmark. An estimated 9,090 (8,918–9,260) Obsoletus group specimens and 14,272 (14,194–14,448) Pulicaris group specimens were captured in the surroundings and subsequently analysed. Two (0.3%) Obsoletus group specimens and 28 (4.6%) Pulicaris group specimens were recaptured. The two recaptured Obsoletus group specimens were caught at the release point on the night following release. Eight (29%) of the recaptured Pulicaris group specimens were caught at a pig farm 1,750 m upwind from the release point. Five of these were recaptured on the night following release and the three other were recaptured on the second night after release. This is the first time that movement of Culicoides vectors between farms in Europe has been directly quantified. The findings suggest an extensive and rapid exchange of disease vectors between farms. Rapid movement of vectors between neighboring farms may explain the high rate of spatial spread of Schmallenberg and bluetongue virus (BTV) in northern Europe.
Spatial abundance and clustering of Culicoides (Diptera: Ceratopogonidae) on a local scale

Background

Biting midges, Culicoides, of the Obsoletus group and the Pulicaris group have been involved in recent outbreaks of bluetongue virus and the former was also involved in the Schmallenberg virus outbreak in northern Europe.

Methods

For the first time, here we investigate the local abundance pattern of these two species groups in the field by intensive sampling with a grid of light traps on 16 catch nights. Neighboring trap catches can be spatially dependent on each other, hence we developed a conditional autoregressive (CAR) model framework to test a number of spatial and non-spatial covariates expected to affect Culicoides abundance.

Results

The distance to sheep penned in the corner of the study field significantly increased the abundance level up to 200 meters away from the sheep. Spatial clustering was found to be significant but could not be explained by any known factors, and cluster locations shifted between catch nights. No significant temporal autocorrelation was detected. CAR models for both species groups identified a significant positive impact of humidity and significant negative impacts of precipitation and wind turbulence. Temperature was also found to be significant with a peak at just below 16 degrees Celsius. Surprisingly, there was a significant positive impact of wind speed. The CAR model for the Pulicaris group also identified a significant attraction to the smaller groups of sheep placed in the field. Furthermore, a large number of spatial covariates which were incorrectly found to be significant in ordinary regression models were not significant in the CAR models. The 95% C.I. on the prediction estimates ranged from 20.4% to 304.8%, underlining the difficulties of predicting the abundance of Culicoides.

Conclusions

We found that significant spatial clusters of Culicoides moved around in a dynamic pattern varying between catch nights. This conforms with the modeling but was not explained by any of the tested covariates. The mean abundance within these clusters was up to 11 times higher for the Obsoletus group and 4 times higher for the Pulicaris group compared to the rest of the field.
Organisations: National Veterinary Institute, Section for Epidemiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Kirkeby, C. (Intern), Bødker, R. (Intern), Stockmarr, A. (Intern), Lind, P. (Intern)
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Culicoides, Spatial clustering, Local scale abundance, Abundance modeling, Spatial autocorrelation, Bluetongue, Schmallenberg virus

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Relations
Activities:
Battling Bluetongue and Schmallenberg virus: Local scale behavior of transmitting vectors
Spatio-temporal abundance and dispersal of Culicoides
This PhD project comprises studies of biting midges (Culicoides) in Denmark with regards to vector-borne diseases such as bluetongue virus (BTV) and Schmallenberg virus (SBV). Both diseases are new in northern Europe. In Denmark there was an outbreak of BTV in 2007 and 2008. BTV infects ruminants, and especially infected sheep and cattle are constitute a problem for farmers. The symptoms of BTV include fever, cyanotic tongue, oedemas and decreased milk production. The last symptom affects the economy and animal welfare in the farming industry. In 2011 and 2012, outbreaks of SBV were also recorded in Denmark. The symptoms of SBV are similar to BTV but also include a high proportion of malformations and stillbirths in lambs. Models of vector-borne diseases can be used to predict an outbreak and evaluate e.g. the optimal control strategy, the economic impact and the number of infected animals. These models need to have proper input regarding the abundance and behavior of the vectors. If no vectors are present in an area, the disease will not spread. Thus the vector abundance is a very important factor for models of vector-borne diseases. This PhD project investigates different key factors important for the abundance and behavior of vectors.

General information
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Organisations: National Veterinary Institute, Section for Epidemiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Authors: Kirkeby, C. (Intern), Lind, P. (Intern), Bødker, R. (Intern), Stockmarr, A. (Intern)
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Activities:
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Spatio-temporal abundance of Culicoides on a local scale

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Main Research Area: Technical/natural sciences
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Bibliographical note
The presentation won 3rd prize (300 Euro) among 27 other contributions at the conference.
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2013
Spatio-temporal optimization of sampling for bluetongue vectors (Culicoides) near grazing livestock

BACKGROUND: Estimating the abundance of Culicoides using light traps is influenced by a large variation in abundance in time and place. This study investigates the optimal trapping strategy to estimate the abundance or presence/absence of Culicoides on a field with grazing animals. We used 45 light traps to sample specimens from the Culicoides obsoletus species complex on a 14 hectare field during 16 nights in 2009.

FINDINGS: The large number of traps and catch nights enabled us to simulate a series of samples consisting of different numbers of traps (1-15) on each night. We also varied the number of catch nights when simulating the sampling, and sampled with increasing minimum distances between traps. We used resampling to generate a distribution of different mean and median abundance in each sample. Finally, we used the hypergeometric distribution to estimate the probability of falsely detecting absence of vectors on the field. The variation in the estimated abundance decreased steeply when using up to six traps, and was less pronounced when using more traps, although no clear cutoff was found.

CONCLUSIONS: Despite spatial clustering in vector abundance, we found no effect of increasing the distance between traps. We found that 18 traps were generally required to reach 90% probability of a true positive catch when sampling just one night. But when sampling over two nights the same probability level was obtained with just three traps per night. The results are useful for the design of vector monitoring programmes on fields with grazing animals.
The Gut Microbiotassay: a high-throughput qPCR approach combinable with next generation sequencing to study gut microbial diversity

Background
The intestinal microbiota is a complex and diverse ecosystem that plays a significant role in maintaining the health and well-being of the mammalian host. During the last decade focus has increased on the importance of intestinal bacteria. Several molecular methods can be applied to describe the composition of the microbiota. This study used a new approach, the Gut Microbiotassay: an assembly of 24 primer sets targeting the main phyla and taxonomically related subgroups of the intestinal microbiota, to be used with the high-throughput qPCR chip 'Access Array 48.48', AA48.48, (Fluidigm®) followed by next generation sequencing. Primers were designed if necessary and all primer sets were screened against DNA extracted from pure cultures of 15 representative bacterial species. Subsequently the setup was tested on DNA extracted from small and large intestinal content from piglets with and without diarrhoea. The PCR amplicons from the 2304 reaction chambers were harvested from the AA48.48, purified, and sequenced using 454-technology.

Results
The Gut Microbiotassay was able to detect significant differences in the quantity and composition of the microbiota according to gut sections and diarrhoeic status. 454-sequencing confirmed the specificity of the primer sets. Diarrhoea was associated with a reduced number of members from the genus Streptococcus, and in particular S. alactolyticus.

Conclusion
The Gut Microbiotassay provides fast and affordable high-throughput quantification of the bacterial composition in many samples and enables further descriptive taxonomic information if combined with 454-sequencing.

General information
State: Published
Organisations: National Veterinary Institute, Section for Bacteriology, Pathology and Parasitology, Section for Immunology and Vaccinology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, Danish Genome Institute
Authors: Hermann-Bank, M. L. (Intern), Skovgaard, K. (Intern), Stockmarr, A. (Intern), Larsen, N. (Ekstern), Mølbak, L. (Intern)
Number of pages: 14
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Publication information
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Web of Science (2017): Indexed yes
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The range of attraction for light traps catching Culicoides biting midges

General information
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Organisations: Department of Applied Mathematics and Computer Science, Cryptology, Dynamical Systems, National Veterinary Institute, Section for Epidemiology, Statistics and Data Analysis
Authors: Græsbøll, K. (Intern), Kirkeby, C. (Intern), Bødker, R. (Intern), Stockmarr, A. (Intern), Christiansen, L. E. (Intern), Lind, P. (Intern)
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Main Research Area: Technical/natural sciences
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Publication: Research - peer-review › Poster – Annual report year: 2013

Background
Culicoides are vectors of e.g. bluetongue virus and Schmallenberg virus in northern Europe. Light trapping is an important tool for detecting the presence and quantifying the abundance of vectors in the field. Until now, few studies have investigated the range of attraction of light traps.

Methods
Here we test a previously described mathematical model (Model I) and two novel models for the attraction of vectors to light traps (Model II and III). In Model I, Culicoides fly to the nearest trap from within a fixed range of attraction. In Model II Culicoides fly towards areas with greater light intensity, and in Model III Culicoides evaluate light sources in the field of view and fly towards the strongest. Model II and III incorporated the directionally dependent light field created around light traps with fluorescent light tubes. All three models were fitted to light trap collections obtained from two novel experimental setups in the field where traps were placed in different configurations.

Results
Results showed that overlapping ranges of attraction of neighboring traps extended the shared range of attraction. Model I did not fit data from any of the experimental setups. Model II could only fit data from one of the setups, while Model III fitted data from both experimental setups.

Conclusions
The model with the best fit, Model III, indicates that Culicoides continuously evaluate the light source direction and intensity. The maximum range of attraction of a single 4W CDC light trap was estimated to be approximately 15.25 meters. The attraction towards light traps is different from the attraction to host animals and thus light trap catches may not represent the vector species and numbers attracted to hosts.
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Scopus rating (2016): CiteScore 3.23 SJR 1.458 SNIP 1.286
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
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Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.51 SNIP 1.576 CiteScore 3.31
Web of Science (2014): Indexed yes
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Scopus rating (2013): SJR 1.541 SNIP 1.46 CiteScore 3.52
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Web of Science (2013): Indexed yes
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Scopus rating (2011): SJR 1.068 SNIP 1.317 CiteScore 3.06
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Scopus rating (2010): SJR 0.972 SNIP 1.008
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Culicoides, Range of attraction, Vector abundance, Light traps, Vector monitoring
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Relations
Projects:
The range of attraction for light traps catching Culicoides biting midges (Diptera: Ceratopogonidae)
A Synoviocyte Model for Osteoarthritis and Rheumatoid Arthritis: Response to Ibuprofen, Betamethasone, and Ginger Extract—A Cross-Sectional In Vitro Study

This study aimed at determining if synovial cell cultures from rheumatoid arthritis (RA), osteoarthritis (OA), and healthy controls (HC) differ and are suitable disease models in pharmacological studies, and tested their response to some anti-inflammatory drugs. Synovial cells were isolated from synovial membrane or joint fluid. Cells were cultivated and exposed to no or TNF-α stimulation without, or in the presence of, betamethasone, ibuprofen, or a standardized ginger extract. Concentrations of a panel of cytokines, growth factors, and chemokines were mapped for each culture and condition. Our cells secreted an increased amount of the cytokines IL-1β, IL-6, and IL-8 in response to TNF-α stimulation in all conditions. OA cells showed a higher IL-6 and IL-8 and a lower IL-1β production, when not stimulated, than RA and HC cells, which were similar. TNF-α stimulation caused similar IL-1β, IL-6, and IL-8 release in all groups. Ibuprofen showed no effect on cytokine production, while ginger extract was similar to betamethasone. Ginger extract was as effective an anti-inflammatory agent as betamethasone in this in vitro model. Cultured fibroblast-like synoviocytes from OA and RA subjects promise to be a useful pharmacological disease model, but further studies, to support results from such a model are needed.

General information
State: Published
Organisations: Department of Informatics and Mathematical Modeling, DTU Data Analysis, Copenhagen University Hospital, University of Copenhagen
Authors: Ribel-Madsen, S. (Ekstern), Bartels, E. M. (Forskerdatabase), Stockmarr, A. (Intern), Borgwardt, A. (Forskerdatabase), Cornett, C. (Forskerdatabase), Dannesiold-Samsoe, B. (Ekstern), Bliddal, H. (Forskerdatabase)
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Main Research Area: Technical/natural sciences

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Original language: English
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Publication: Research - peer-review › Journal article – Annual report year: 2012

Detection of Dairy Herds at risk for changing Salmonella Dublin status

General information
State: Published
Organisations: DTU Data Analysis, Department of Informatics and Mathematical Modeling, Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute, University of Copenhagen
Authors: Stockmarr, A. (Intern), Bedker, R. (Intern), Nielsen, L. (Ekstern)
Publication date: 2012
Detection of Dairy Herds at Risk for Changing Salmonella Dublin status
Salmonella Dublin (S. Dublin) is a costly infection for dairy cows, potentially lethal to humans. Surveillance is based on bulk tank milk (BTM) antibody measurements, taken each quarter of the year. Herds are classified as Status 1 - likely free of S. Dublin, or Status 2 - likely infected with S. Dublin, based on present/recent characteristics, but not actual S. Dublin detection. We develop a predictive model based on characteristics from last quarter, using on registry data for 2001-2007 for 9387 herds in Denmark. Only 2004-2007 data modeled due to data contamination.

Fitting a distribution to microbial counts: making sense of zeros
Non-detects or left-censored results are inherent to the traditional methods of microbial enumeration in foods. Typically, a low concentration of microorganisms in a food unit goes undetected in plate counts or most probable number (MPN) counts, and produces "artificial zeros". However, these "artificial zeros" are only a share of the total number of zero counts resulting from a sample, as their number adds up to the number of "true zeros" resulting from uncontaminated units. In the process of fitting a probability distribution to microbial counts, "artificial" and "true" zeros are usually undifferentiated. This practice may lead to errors in the estimation of the parameters for the distribution of microbial concentrations, most specifically to the underestimation of the mean and overestimation of the variance. Distributions of microbial counts are often used as input in quantitative microbial risk assessment; therefore it is possible that errors related to these distributions have an impact in terms of food safety, if an influence on the estimated risk is observed.

In this study, we developed a method to estimate both the parameters of a lognormal distribution of microbial concentrations (mean and standard deviation) and the prevalence of contaminated food units (one minus the proportion of "true zeros") from a set of microbial counts.

By running the model with in silico generated concentration and count data, we could evaluate the performance of this method in terms of estimation of the three different parameters. In principle, the higher the proportion of zeros in a dataset, the higher the error in the estimation will be, and a lower prevalence contributes to a higher proportion of "true zeros" in microbial counts. Therefore, we also investigated the effect of the prevalence on the estimation of the distribution parameters mean and standard deviation by running the same model for different prevalence scenarios.
Infectious risk factors for individual postweaning multisystemic wasting syndrome (PMWS) development in pigs from affected farms in Spain and Denmark

Two prospective longitudinal studies in 13 postweaning multisystemic wasting syndrome (PMWS)-affected farms from Spain (n = 3) and Denmark (n = 10) were performed. Blood samples from pigs were longitudinally collected from 1st week until the occurrence of the PMWS outbreak. Wasted and healthy age-matched pigs were euthanized, necropsied and histopathologically characterised. PMWS diagnosis was confirmed by means of lymphoid lesions and detection of porcine circovirus type 2 (PCV2) in these tissues by in situ hybridization or immunohistochemistry. Serological analyses were performed in longitudinally collected serum samples to detect antibodies against, PCV2, porcine reproductive and respiratory syndrome virus (PRRSV), porcine parvovirus (PPV), swine influenza virus (SIV) and Lawsonia intracellularis (law), Mycoplasma hypopneumoniae, Aujeszky’s disease virus (ADV) and Salmonella spp. A Cox proportional hazards model was used to investigate the simultaneous effects of seroconversion and maternal immunity against the studied pathogens. Results showed that high levels of maternal immunity against PCV2 had a protecting effect in farms from both countries. Moreover, for the Danish dataset, seroconversion against law had an overall protecting effect, but for animals with very low levels of maternal antibody levels against this pathogen, the effect appeared neutral or aggravating. Otherwise, for the Spanish dataset, maternal immunity against PPV and PRRSV gave protective and aggravating effects, respectively. In conclusion, the present study reflects the complex interaction among different pathogens and their effects in order to trigger PMWS in PCV2 infected pigs.

General information

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Organisations: Department of Informatics and Mathematical Modeling, DTU Data Analysis, National Veterinary Institute, Division of Veterinary Diagnostics and Research, Section for Veterinary Epidemiology and public sector consultancy, Section for Veterinary Diagnostics, Division of Microbiology and Risk Assessment, Virology, Universidad Autonoma de Barcelona, Pig Research Centre
Pages: 1231–1240
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Main Research Area: Technical/natural sciences
Porcine circovirus type 2 (PCV2), Postweaning multisystemic wasting syndrome (PMWS), Infectious risk factors, Survival analysis

DOIs: 10.1016/j.rvsc.2012.07.001
Publication: Research - peer-review › Journal article – Annual report year: 2012

Model's comparison

Three popular disease spread simulation models were used to simulate the spread of foot-and-mouth disease (FMD) in Denmark. The models’ predictions in term of disease spread, consequence, and the ranking of the applied control strategies were compared. The original Davis Animal Disease Spread (DADS version 0.05) was adapted to DTU-DADS, and this model as well as InterSpread Plus (ISP version 2.001.11) and the North American Animal Disease Spread Model (NAADSM version 3.0.81) were all used to simulate hypothetical spread of FMD in Denmark. Data on Danish herds were used including herd type, movements, and location in the period 1st October 2006 to 30th September 2007.

The three models to the highest possible extend set up to simulate the same epidemics in 3 different control scenarios: 1) A basic scenario representing EU and Danish control strategies, 2) pre-emptive depopulation of susceptible herds in a 500 meters radius around the detected herds, and 3) suppressive vaccination of susceptible herds in a 1,000 meters radius around the detected herds. Depopulation and vaccination started either 14 days following the detection of the first infected herd or following detection of 50 infected herds. Five thousand index herds were selected randomly in which there were 1,000 cattle herds located in high density cattle area and 1,000 in low density cattle area, 1,000 swine herds located in high density swine area and 1,000 in low density swine area, and 1,000 sheep herds.

Generally, NAADSM predicted the largest, longest duration and costliest epidemics. DTU-DADS predicted larger, longer duration and costlier epidemics than ISP, except when epidemics started in cattle herds located in high density cattle area. ISP predicted suppressive vaccination to be less costly than depopulation, while the least costly control strategy predicted by DTU-DADS differed depending on the species and density area of the index herd. It was not possible to run the depopulation scenarios in the NAADSM due to limitations in the model.

Running several models in parallel gives better insight in disease spread, limits typing and coding errors and improves understanding of modeled processes. The chosen control strategy might depend on the chosen model.
Modulation of Cytokine mRNA Expression in Pharyngeal Epithelial Samples obtained from Cattle Infected with Foot-and-Mouth Disease Virus

A novel technique of endoscopical collection of small tissue samples was used to obtain sequential tissue samples from the dorsal soft palate (DSP) of individual cattle infected with foot-and-mouth disease virus (FMDV) at different phases of the infection. Levels of mRNA encoding interferon (IFN)-a and IFN-b as well as tumour necrosis factor (TNF)-a were measured in these samples by quantitative reverse transcriptase polymerase chain reaction. Expression of IFN-b mRNA was significantly down-regulated in the biopsy samples harvested during the acute phase of infection, while there was no statistically significant effect on the expression of IFN-a mRNA compared with baseline levels. In contrast, the mRNA encoding TNF-a was significantly up-regulated in samples collected during both acute and late (>28 days post infection) phases of infection. There were also significantly higher levels of TNF-a mRNA expressed in samples derived from animals that were identified subsequently as persistently infected FMDV-carriers. It was concluded that there was a significant difference in the host-response in the DSP of calves that were identified as persistently infected, subclinical carriers of FMDV.
Optimal combinations of acute phase proteins for detecting infectious disease in pigs

General information
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Organisations: Department of Informatics and Mathematical Modeling, DTU Data Analysis
Authors: Stockmarr, A. (Intern)
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Original language: English
Main Research Area: Technical/natural sciences
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Optimizing the control of foot-and-mouth disease in Denmark by simulation: Comparison of foot-and-mouth disease simulation models

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Organisations: National Veterinary Institute, Section for Epidemiology, Department of Informatics and Mathematical Modeling, DTU Data Analysis, Mathematical Statistics
Authors: Hisham Beshara Halasa, T. (Intern), Boklund, A. (Intern), Stockmarr, A. (Intern), Enæe, C. (Intern), Christiansen, L. E. (Intern)
Number of pages: 35
Publication date: 2012

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Analysis of the acute phase responses of Serum Amyloid A, Haptoglobin and Type 1 Interferon in cattle experimentally infected with foot-and-mouth disease virus serotype O

A series of challenge experiments were performed in order to investigate the acute phase responses to foot-and-mouth disease virus (FMDV) infection in cattle and possible implications for the development of persistently infected "carriers". The host response to infection was investigated through measurements of the concentrations of the acute phase proteins (APPs) serum amyloid A (SAA) and haptoglobin (HP), as well as the bioactivity of type 1 interferon (IFN) in serum of infected animals. Results were based on measurements from a total of 36 infected animals of which 24 were kept for observational periods exceeding 28 days in order to determine the carrier-status of individual animals. The systemic host response to FMDV in infected animals was evaluated in comparison to similar measurements in sera from 6 mock-inoculated control animals. There was a significant increase in serum concentrations of both APPs and type 1 IFN in infected animals coinciding with the onset of viremia and clinical disease. The measured parameters declined to baseline levels within 21 days after inoculation, indicating that there was no systemically measurable inflammatory reaction related to the carrier state of FMD. There was a statistically significant difference in the HP response between carriers and non-carriers with a lower response in the animals that subsequently developed into FMDV carriers. It was concluded that the induction of SAA, HP and type 1 IFN in serum can be used as markers of acute infection by FMDV in cattle.

General information
Optimal combinations of acute phase proteins for detecting infectious disease in pigs

The acute phase protein (APP) response is an early systemic sign of disease, detected as substantial changes in APP serum concentrations and most disease states involving inflammatory reactions give rise to APP responses. To obtain a detailed picture of the general utility of porcine APPs to detect any disease with an inflammatory component seven porcine APPs were analysed in serum sampled at regular intervals in six different experimental challenge groups of pigs, including three bacterial (Actinobacillus pleuropneumoniae, Streptococcus suis, Mycoplasma hyosynoviae), one parasitic (Toxoplasma gondii) and one viral (porcine respiratory and reproductive syndrome virus) infection and one aseptic inflammation. Immunochemical analyses of seven APPs, four positive (C-reactive protein (CRP), haptoglobin (Hp), pig major acute phase protein (pigMAP) and serum amyloid A (SAA)) and three negative (albumin, transthyretin, and apolipoprotein A1 (apoA1)) were performed in the more than 400 serum samples constituting the serum panel. This was followed by advanced statistical treatment of the data using a multi-step procedure which included defining cut-off values and calculating detection probabilities for single APPs and for APP combinations. Combinations of APPs allowed the detection of disease more sensitively than any individual APP and the best three-protein combinations were CRP, apoA1, pigMAP and CRP, apoA1, Hp, respectively. For the practical use of such combinations, methodology is described for establishing individual APP threshold values, above which, for any APP in the combination, ongoing infection/inflammation is indicated.
Avian influenza caused by avian influenza virus (AIV) has a negative impact on poultry production. Low-pathogenic AIV (LPAIV) is naturally present in wild birds, and the introduction of the virus into domestic poultry is assumed to occur through contact with wild birds and by human activity, including the movement of live and dead poultry, and fomites such as clothing and vehicles. At present, the possible role of insects in the spread of AIV is dubious. The objective of the present work was to investigate the potential transmission of LPAIV by persistence of the virus in the alimentary tract of house flies, Musca domestica L. (Diptera: Muscidae). Flies were fed three virus concentrations of two AIV strains and then
incubated at different temperatures for up to 24 h. The persistence of the two virus strains in the flies declined with increasing incubation temperatures and incubation periods. Similarly, increased virus uptake by the flies increased the persistence of virus. Persistence of infective AIV in flies differed significantly between the two virus strains. The laboratory experiments of the present study indicate that the house fly can be a potential carrier of AIV.

**General information**

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Organisations: National Food Institute, Division of Food Microbiology, Department of Applied Mathematics and Computer Science, Statistics and Data Analysis, National Veterinary Institute, Aarhus University Hospital, Aarhus University
Authors: Nielsen, A. A. (Intern), Skovgård, H. (Ekstern), Stockmarr, A. (Intern), Handberg, K. (Intern), Jørgensen, P. H. (Intern)
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Web of Science (2017): Indexed yes
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Scopus rating (2016): SJR 0.872 SNIP 0.95 CiteScore 1.82
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.961 SNIP 0.946 CiteScore 1.93
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Scopus rating (2014): SJR 1.059 SNIP 0.998 CiteScore 1.87
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BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.001 SNIP 1.043 CiteScore 2.02
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.016 SNIP 1.106 CiteScore 2.18
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.974 SNIP 1.103 CiteScore 2.07
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
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Scopus rating (2010): SJR 1.13 SNIP 1.042
ISI indexed (2010): ISI indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.139 SNIP 1.194
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.154 SNIP 1.154
Scopus rating (2007): SJR 1.021 SNIP 1.11
Scopus rating (2006): SJR 1.136 SNIP 1.322
Scopus rating (2005): SJR 0.915 SNIP 1.077
Scopus rating (2004): SJR 0.918 SNIP 1.097
Scopus rating (2003): SJR 0.74 SNIP 1.038
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.816 SNIP 1.08
Scopus rating (2001): SJR 0.775 SNIP 0.965
Scopus rating (2000): SJR 0.715 SNIP 0.981
R0-modeling as a tool for early warning and surveillance of exotic vector borne diseases in Denmark

Modelling the potential transmission intensity of insect borne diseases with climate driven R0 process models is frequently used to assess the potential for veterinary and human infections to become established in non endemic areas. Models are often based on mean temperatures of an arbitrary time period e.g. a monthly temperature mean. Temperature decreases with latitude, and in the Nordic countries periods of suitable temperatures, the windows of opportunity for transmission, may be very short and only appear in odd years. While average monthly temperatures are likely to be suitable for predicting permanent establishment of presently exotic diseases, mean temperatures may not predict the true potential for local spread and limited outbreaks resulting from accidental introductions in years with temporary periods of warm weather. We present a system for continuous risk assessment of potential local spread of exotic insect borne diseases of veterinary and human importance. R0 models for various vector borne diseases are continuously updated with spatial temperature data to quantify the present risk of autochthonous cases (R0>0) and the present risk of epidemics (R0>1) in case an infected vector or host are introduced to the area. The continuously updated risk assessment functions as an early warning system allowing authorities and industry to increase awareness and preventive measures when R0 raises above the level of ‘no possible transmission’ and target active serological surveillance to these limited periods of potential risk, thus dramatically reducing the number of samples collected and analysed. The risk estimated from the R0 modelling may be combined with the risk of introduction from neighbouring countries and trading partners to generate a truly risk based surveillance system for insect borne diseases. R0 models for many vector borne diseases are simple and the available estimates of model parameters like vector densities and survival rates may be uncertain. The quantitative value of R0 estimated from such models is therefore likely to deviate from the true R0. However assuming the models are qualitatively able to rank the estimated R0 correctly, a period resulting in a relatively high estimated R0 will also be a period with a relatively high true R0. This allows the estimated R0 to be used for targeted surveillance by focussing the surveillance on periods and areas with high R0 estimates even if the actual value of these estimates are difficult to interpret. Furthermore running R0 models on historic outbreaks in Europe may be used to fit estimates for R0 for these data. When comparing the model R0 to the observed value of R0 a correction factor is obtained that may be used to adjust the model estimates in Denmark, and thus allowing a more quantitative interpretation of the estimated R0. We here demonstrate the system for bluetongue using 2008 climate data and compare the predicted R0 with the actual spread of bluetongue in Scandinavia in 2008.
Infectious risk factors for postweaning multisystemic wasting syndrome (PMWS) development

General information
State: Published
Organisations: National Veterinary Institute, Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, Section for Veterinary Diagnostics, Virology, Centre de Recerca en Sanitat Animal, Danish Agriculture and Food Council
Number of pages: 327
Pages: P.021
Publication date: 2010

Host publication information
Title of host publication: Proceedings of the 21st International Pig Veterinary Society Congress
Main Research Area: Technical/natural sciences
Conference: 21st International Pig Veterinary Society Congress, Vancouver, Canada, 18/07/2010 - 18/07/2010
Links:
http://www.ipvs2010.com/
Source: orbit
Source-ID: 282423
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2011

Modeling the density of bluetongue vectors in a field

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Kirkeby, C. (Intern), Bødker, R. (Intern), Stockmarr, A. (Intern)
Publication date: 2010
Event: Poster session presented at Bluetongue in the Nordic countries, Oslo, Norway.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 272068
Publication: Research - peer-review › Poster – Annual report year: 2010

Modelling the seasonal variation in the basic reproduction ratio for bluetongue – a model incorporating Culicoides biology to quantify the vaccination cover needed to prevent outbreaks in the Nordic countries

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Bødker, R. (Intern), Græsbøll, K. (Intern), Kristensen, B. (Intern), Kirkeby, C. (Intern), Stockmarr, A. (Intern)
Publication date: 2010
Event: Abstract from Bluetongue in the Nordic countries, Oslo, Norway.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 272060
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Relative risk for human illness of biogas effluent use in horticulture at small-scale pig farms in northern Vietnam
Treatment of animal manure in small-scale biogas systems are spreading rapidly in developing countries like Vietnam. The anaerobic fermentation breaks down solid matter and transforms it into methane which can be used for cooking and
generation of light. Other benefits include a high-quality fertilizer effluent, reduction of problems with mal odour and a potential also to treat human waste products. Often the hygiene and health aspects of handling and digesting these organic wastes are unknown and the promotion of biogas technologies does rarely consider hygienic aspects. The aim of the current study was therefore to establish simple hygiene models for Vietnamese small-scale farmers that could describe the relative health risks associated with management of manure and consumption of the fertilized crop when using; i) fresh manure, ii) stored manure or iii) manure processed in the biogas plants. The hygiene models were developed based on information collected during interviews and observations of Vietnamese farmers operating biogas digesters as well as from the literature. Rather than calculating the specific risk for one person to become infected when handling a specific type of manure, we established hygiene models to calculate the relative risks of infection with the two model pathogens, Salmonella Typhimurium and Ascaris, allowing a comparison of risks for the different manure handling systems. Results showed that there was ten times higher risk of a human S. Typhimurium infection when handling fresh manure or composted manure as compared to handling of manure treated in a biogas system. In contrast, the risk for infection with the more resistant Ascaris was equivalent for all three manure handling systems. There is an urgent need to document the hygiene aspects of biogas systems developed and promoted to farmers in developing counties. Thus, further studies are needed on human exposure when handling animal manure and human excreta and pathogen survival in biogas systems as such information is essential to further refine the hygiene models developed and to formulate hygiene guidelines for biogas systems.

General information

State: Submitted
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute, University of Copenhagen
Authors: Kiilholma, J. (Ekstern), Stockmarr, A. (Intern), Poulsen, L. L. (Ekstern), Dalsgaard, A. (Ekstern)
Publication date: 2010
Main Research Area: Technical/natural sciences

Publication information

Journal: Livestock Science
ISSN (Print): 1871-1413
Ratings:
  BFI (2018): BFI-level 1
  Web of Science (2018): Indexed yes
  BFI (2017): BFI-level 1
  Web of Science (2017): Indexed Yes
  BFI (2016): BFI-level 1
  Scopus rating (2016): SJR 0.812 SNIP 1.085 CiteScore 1.58
  BFI (2015): BFI-level 1
  Scopus rating (2015): SJR 0.829 SNIP 0.998 CiteScore 1.35
  BFI (2014): BFI-level 1
  Scopus rating (2014): SJR 0.825 SNIP 1.211 CiteScore 1.56
  Web of Science (2014): Indexed yes
  BFI (2013): BFI-level 1
  Scopus rating (2013): SJR 0.731 SNIP 1.062 CiteScore 1.4
  ISI indexed (2013): ISI indexed yes
  BFI (2012): BFI-level 1
  Scopus rating (2012): SJR 0.851 SNIP 1.184 CiteScore 1.46
  ISI indexed (2012): ISI indexed yes
  Web of Science (2012): Indexed yes
  BFI (2011): BFI-level 1
  Scopus rating (2011): SJR 1.005 SNIP 1.246 CiteScore 1.59
  ISI indexed (2011): ISI indexed yes
  Web of Science (2011): Indexed yes
  BFI (2010): BFI-level 1
  Scopus rating (2010): SJR 0.862 SNIP 1.061
  Web of Science (2010): Indexed yes
  BFI (2009): BFI-level 1
  Scopus rating (2009): SJR 0.812 SNIP 1.073
  Web of Science (2009): Indexed yes
  BFI (2008): BFI-level 1
Simple spatial distribution models for vector density in a field: Bloodsucking creatures from dusk to dawn

General information
State: Published
Organisations: National Veterinary Institute, Division of Veterinary Diagnostics and Research, Section for Veterinary Epidemiology and public sector consultancy
Authors: Kirkeby, C. (Intern), Bødker, R. (Intern), Stockmarr, A. (Intern), Lind, P. (Intern), Græsbøll, K. (Intern)
Number of pages: 13
Publication date: 2010
Event: Abstract from GEOVET 2010, Sydney, Australia.
Main Research Area: Technical/natural sciences
Electronic versions:
Simple_spatial_distribution_models.pdf
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2010

Dimensions of socioeconomic position related to body mass index and obesity among Danish women and men
Aims: The aim of this study was to examine the association between different dimensions of socioeconomic position, body mass index (BMI) and obesity in the Danish population. Possible interactions between the different dimensions and gender differences were also investigated.
Methods: This was a cross-sectional survey conducted in 2000–2002 including a simple random sample from the civil registration system, comprising 1953 males and 2167 females aged 4–75 years. Information about different dimensions of socioeconomic position, height and weight was obtained by face-to-face interview. Associations between dimensions of socioeconomic position and weight status were examined by use of linear multiple regression analysis and logistic regression analysis. Results: BMI and prevalence of obesity were significantly associated with education for both men and women. Odds ratios (ORs) for obesity were 2.9 (95% confidence interval (CI) 1.4–5.9) and 6.5 (95% CI 2.3–18.7) for those with basic school as compared with those with long higher education for men and women, respectively. Women outside the labour market had higher BMIs and a greater prevalence of obesity (OR 2.5 (95% CI 1.6–3.9)) after adjustment for educational level. Conclusions: Education was the dimension most consistently associated with BMI and obesity, indicating the importance of cultural capital for weight status. The gender-specific pattern showed a stronger social gradient for women, and indicated that a high relative body weight was associated with less favourable social and material conditions for women, but not for men. A public health strategy to prevent and reduce obesity should be gender-specific, focus on groups with short education, and incorporate cultural norms.

General information
State: Published
Organisations: National Food Institute, National Veterinary Institute
Authors: Groth, M. V. (Intern), Fagt, S. (Intern), Stockmarr, A. (Intern), Matthiessen, J. (Intern), Biltoft-Jensen, A. P. (Intern)
Age-dependent windows for cohort culling in BSE herds

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Pages: 79-88
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Preventive Veterinary Medicine
Volume: 92
Issue number: 1-2
ISSN (Print): 0167-5877
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.2 SJR 1.185 SNIP 1.329
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.26 SNIP 1.23 CiteScore 2.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.267 SNIP 1.421 CiteScore 2.37
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.247 SNIP 1.552 CiteScore 2.49
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.274 SNIP 1.452 CiteScore 2.45
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.211 SNIP 1.303 CiteScore 2.24
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.155 SNIP 1.28
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.022 SNIP 1.34
Web of Science (2009): Indexed yes
Association between land cover and Culicoides (Diptera: Ceratopogonidae) breeding sites on four Danish cattle farms

Biting midges of the genus Culicoides are vectors of bluetongue virus. Their larval habitats are poorly known in Northern Europe. Three classes of the CORINE land cover index, found within 300 m of four farms in Denmark, were used to stratify sampling sites for a total of 360 soil core samples from 30 sampling points. Soil samples were set up in emergence chambers for hatching adult Culicoides. Two species of Culicoides (C. punctatus and C. pulicaris) emerged from nine of 12 soil samples from a wet, grazed field with manure. Seventy-two other samples from similar land cover on the three other farms were negative. Seven sampling points from pastures were incorrectly classified by CORINE. The remaining 23 sampling points were classified correctly. The visually observed land use was not sufficiently detailed to adequately predict Culicoides breeding sites in this study. The CORINE index failed to identify pastures in which Culicoides breeding sites were found.

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Kirkeby, C. (Intern), Bedker, R. (Intern), Stockmarr, A. (Intern), Enæ, C. (Intern)
Pages: 228-232
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Entomologica Fennica
Volume: 20
Issue number: 4
ISSN (Print): 0785-8760
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Isokinetic and Isometric Muscle Strength in a Healthy Population – with Special Reference to Age and Gender

Aim: Muscle strength is an excellent indicator of general health when based on reliable measurements. Muscle strength data for a healthy population are rare or non-existent. The aim of the present study was to measure a set of normal values for isometric and isokinetic muscle strength for all the major joint movements of the body and, from these data, to create a basis for comparison of the muscle strength of an individual with the expected value in a normal population.

Methods: A randomly selected group, aged 20–80 years, from the Copenhagen City Heart Study were studied. The group was subgrouped according to age and gender. Isometric and isokinetic muscle strength was measured in each subject across the main joints in the body. A statistical model was developed that encompassed the three main muscle groups: upper limbs, trunk and lower limbs.

Results: Muscle strength in healthy men decreases in a linear fashion from the age of 25 years down to between 54% and 89% at the age of 75 years, and seems not highly dependent on any other parameter than age. For women, the muscle strength is dependent on weight and is only related to age from around 40 years of age. The decrease in muscle strength from the age around 40 to 75 years is 48–92%. For most muscle groups, men are 1.5–2 times stronger than women, with the oldest men having strength similar to that observed among the youngest women.

Conclusion: We developed a model to compare the isometric and isokinetic muscle strength of all the major joint movements of an individual with values for a healthy man or woman at any age in the range of 20–80 years. In all age groups, women have lower muscle strength than men. Men’s muscle strength declines with age, while women’s muscle strength declines from the age of 41 years.
Effect of tulathromycin on the carrier status of Actinobacillus pleuropneumoniae serotype 2 in the tonsils of pigs

The effect of a single or double dose of tulathromycin was evaluated in pigs carrying Actinobacillus pleuropneumoniae serotype 2 in their tonsils. Twenty-nine pigs from a reinfected specific pathogen-free-herd were selected from animals testing positive in an A pleuropneumoniae serotype 2-specific PCR test on tonsil scrapings and they were divided into three groups. The pigs in group 1 were treated subcutaneously with 2.5 mg/kg tulathromycin on day 0, the pigs in group 2 were treated with 2.5 mg/kg tulathromycin on days 0 and 4, and the pigs in group 3 were left untreated as controls. The pigs were tested by PCR on tonsil scrapings on days 0, 4, 11 and 33, and on day 33 all the animals were euthanased. There were no significant differences between the numbers of PCR-positive animals in the three groups on any of the sampling dates.

General information
State: Published
Organisations: Bacteriology & Pathology, Division of Veterinary Diagnostics and Research, National Veterinary Institute, Section for Veterinary Epidemiology and public sector consultancy
Authors: Angen, Ø. (Intern), Andreasen, M. (Ekstern), Nielsen, E. (Ekstern), Stockmarr, A. (Intern), Bækbo, R. (Ekstern)
Pages: 445-447
Publication date: 2008
Main Research Area: Technical/natural sciences

Publication information
Journal: Veterinary Record
Volume: 163
Issue number: 15
ISSN (Print): 0042-4900
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.442 SNIP 0.692 CiteScore 0.3
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.509 SNIP 0.794 CiteScore 0.39
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.469 SNIP 0.839 CiteScore 0.41
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.474 SNIP 0.821 CiteScore 0.5
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.491 SNIP 0.883 CiteScore 0.52
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.563 SNIP 0.9 CiteScore 0.62
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.574 SNIP 0.835
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.642 SNIP 0.996
Nu fanger der mitter!

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Pages: 31
Publication date: 2008
Main Research Area: Technical/natural sciences

Publication information
Journal: Dansk Veterinærtidsskrift
Volume: 91
Issue number: 15-16
ISSN (Print): 0106-6854
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Prevalence and trends in overweight and obesity among children and adolescents in Denmark

Aim: To study the current prevalence and trends in overweight and obesity among children and adolescents in Denmark from 1995 to 2000—2002. Methods: Cross-sectional national dietary surveys were conducted in 1995 and 2000—2002. The analysis was based on two random population samples from the Danish civil registration system. Body mass index (BMI) was calculated from self-reported height and weight for 1,026 and 1,152 children and adolescents (4—18 years), who participated in 1995 and 2000—2002, respectively. The prevalence of overweight and obesity was defined according to the international age and gender-specific child BMI cut-off points. In the statistical analysis, overweight and obesity were included in the prevalence of overweight.

Results: Mean BMI increased significantly between 1995 and 2000—2002 for all combinations of age groups (4—6, 7—10, 11—14 and 15—18 years) and genders. Prevalence of overweight increased between survey years for boys and girls for all age groups (4—6, 7—10, 11—14 and 15—18 years), although formal statistical significance was not reached (p>0.05). When all children and adolescents (4—18 years) were analysed, the prevalence of overweight rose significantly from 10.9% (95% confidence interval (CI) 9.0—12.8) to 14.4% (95% CI 12.5—16.3) between 1995 and 2000—2002 (p=0.01), whereas the increase in the prevalence of obesity did not reach significance (1995, 2.3% (95% CI 1.3—3.3) vs. 2000—2002, 2.4% (95% CI 1.6—3.3); p=0.74). Conclusions: The present study revealed a significant increase from 1995 to 2000—2002 in mean BMI for boys and girls for all age groups and a significant increase in the prevalence of overweight when all Danish children and adolescents (4—18 years) were analysed.

General information

State: Published
Organisations: National Food Institute, Division of Nutrition, National Veterinary Institute, Technical University of Denmark
Authors: Matthiessen, J. (Intern), Groth, M. V. (Intern), Fagt, S. (Intern), Bittof-Jensen, A. P. (Intern), Stockmarr, A. (Intern), Andersen, J. S. (Ekstern), Trolle, E. (Intern)
Pages: 153-160
Publication date: 2008
Main Research Area: Technical/natural sciences

Publication information

Volume: 36
ISSN (Print): 1403-4948
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.757 SNIP 0.773 CiteScore 1.34
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.828 SNIP 1.03 CiteScore 1.72
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.288 SNIP 1.653 CiteScore 3.47
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.716 SNIP 1.373 CiteScore 2.82
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.951 SNIP 1.072 CiteScore 2.02
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.743 SNIP 0.947 CiteScore 1.54
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.787 SNIP 0.945
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.122 SNIP 1.107
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.277 SNIP 1.121
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.938 SNIP 3.117
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.512 SNIP 0.642
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.121 SNIP 0
Scopus rating (2004): SJR 0.194 SNIP 0.496
Scopus rating (2003): SJR 0.401 SNIP 1.202
Scopus rating (2002): SJR 0.235 SNIP 0.318
Scopus rating (2001): SJR 0.408 SNIP 0
Scopus rating (2000): SJR 0.313 SNIP 0.826
Scopus rating (1999): SJR 0.278 SNIP 0.589
Original language: English
trend, obesity, children, Denmark, Body mass index
DOIs:
10.1177/1403494807085185
Links:
http://sjp.sagepub.com/content/36/2/153

Relations
Activities:
Social inequality in obesity and the obesity epidemic for children: A review
Source: orbit
Source-ID: 255881
Publication: Research - peer-review › Journal article – Annual report year: 2008

Age dependent windows for cohort culling Bovine Spongiform Encephalopathy

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Pages: 282-292
Publication date: 2007

Host publication information
Title of host publication: Proceedings of the Society for Veterinary Epidemiology and Preventive Medicine, 28. - 30. March 2007, Dipoli, Helsinki/Espoo, Finland
Main Research Area: Technical/natural sciences
Conference: Society for Veterinary Epidemiology and Preventive Medicine, 01/01/2007
Source: orbit
Source-ID: 244627
Publication: Research › Article in proceedings – Annual report year: 2007

Dispersal distances for airborne spores based on deposition rates and stochastic modeling
A new modeling framework for particle dispersal is explored in the context of the particles being fungal spores dispersed within a field. The model gives rise to both exponentially decreasing and polynomially decreasing two-dimensional densities of deposited fungal spores. We reformulate the model in terms of time to deposition, and show how this concept is equivalent to the deposition rate for fungal spores. Special cases where parameter values for wind and gravitation lead to exponentially or polynomially decreasing densities are discussed, and formulas for one- and two-dimensional densities of deposited spores are given explicitly in terms of parameters for diffusion, wind, gravitation, and spore release height.
General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute, Bioenergy and Biomass, Biosystems Division, Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern), Andreasen, V. (Ekstern), Østergård, H. (Intern)
Pages: 1325-1330
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Phytopathology
Volume: 97
Issue number: 10
ISSN (Print): 0031-949X
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 1.303 SNIP 1.411 CiteScore 2.93
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.434 SNIP 1.779 CiteScore 2.94
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.358 SNIP 1.579 CiteScore 2.99
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.218 SNIP 1.614 CiteScore 2.83
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.434 SNIP 1.543 CiteScore 2.81
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.231 SNIP 1.598 CiteScore 2.58
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.181 SNIP 1.303
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.293 SNIP 1.386
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.105 SNIP 1.416
Scopus rating (2007): SJR 1.2 SNIP 1.349
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.273 SNIP 1.524
Scopus rating (2005): SJR 1.201 SNIP 1.454
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.258 SNIP 1.579
Scopus rating (2003): SJR 1.377 SNIP 1.599
Scopus rating (2002): SJR 1.327 SNIP 1.529
Scopus rating (2001): SJR 1.228 SNIP 1.434
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.428 SNIP 1.628
Scopus rating (1999): SJR 1.944 SNIP 1.709
Original language: English
power law, dispersal gradient
DOIs:
Forsknings giver ny metode til at bekæmpe kogalskab

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Pages: 31
Publication date: 2007
Main Research Area: Technical/natural sciences

Publications Information
Journal: Dansk veterinærtidsskrift
Volume: 90
Issue number: 9
ISSN (Print): 1902-3715
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: Danish

Bibliographical note
Translated title: Research yields new method for fighting Mad Cow Disease
Source: orbit
Source-ID: 241859
Publication: Research › Journal article – Annual report year: 2007

Fremtidens biogasfællesanlæg – nye anlægskoncepter og økonomisk potentiale
The main objective of the project was the identification and analysis of new technical concepts for centralized biogas plants, which would make them less dependent on organic waste supplies, and thus be economically self sustained mainly on manure supplies. The analyses have been carried out as system analyses, where plant concepts have been evaluated in connection with agricultural areas. 8 scenarios where analyzed, of which 2 were reference scenarios. One without a biogas plant, but with on-farm separation in order to reach phosphorus balance in the area by exporting fiber fraction (Scenario 0) to other regions, and one with a conventional centralized biogas plant with a post separation facility, likewise to enable the export of surplus phosphorus (Scenario 1). The remaining 6 scenarios are: 1a. Serial digestion in two digesters, and partial post separation of digested manure so phosphorus balance in the area is obtained. 1b. Conventional centralized biogas plant, post separation and recycling most of the fiber fraction. Export of fiber fraction till phosphorus balance in the area is obtained. 2. On farm separation of major parts of pig manure. Fiber fraction supplied to the biogas plant and mixed with remaining conventional slurry until a dry matter content of 10% in the biogas plant has
been reached. The thin fraction remains on the farms and is utilized as a fertilizer. Post separation of the digested manure, pretreatment (wet oxidation) and recycling most of the fiber fraction to the digesters. The remaining fiber fraction is exported until phosphorus balance in the area is reached. 2a. Same as 2, but pressure boiling of the fiber fraction in stead of wet oxidation. 2b. Same as 2, but no on farm separation, which means that the entire manure amount in the area is supplied to the biogas plant. 2c. On farm separation until 10% dry matter content in input is reached, no pretreatment but post separation until phosphorus balance in the area is obtained.

**General information**

State: Published
Organisations: Bioscience and Technology, Department of Systems Biology, National Food Institute, National Veterinary Institute, Department of Biotechnology
Authors: Christensen, J. (Ekstern), Hjort-Gregersen, K. (Ekstern), Uellendahl, H. (Intern), Ahring, B. K. (Intern), Baggesen, D. L. (Intern), Stockmarr, A. (Intern), Møller, H. B. (Intern), Birkmose, T. (Ekstern)
Publication date: 2007

**Publication information**
Publisher: Fødevareøkonomisk Institut
Original language: Danish
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 210846
Publication: Research - peer-review › Book – Annual report year: 2007

Future Biogas Plants: New Systems and their economic potential

**General information**

State: Published
Organisations: Department of Electrical Engineering, Risø National Laboratory for Sustainable Energy, Division of Microbiology and Risk Assessment, National Food Institute, Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Christensen, J. (Ekstern), Hjort-Gregersen, K. (Intern), Uellendahl, H. (Intern), Ahring, B. K. (Intern), Baggesen, D. L. (Intern), Stockmarr, A. (Intern), Møller, A. B. (Intern), Birkmose, T. (Ekstern)
Publication date: 2007

**Publication information**
Publisher: Institute for Food and Rescource Economics
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 241850
Publication: Research › Report – Annual report year: 2007

Comparative, Collaborative, and On-Site Validation of a TaqMan PCR Method as a Tool for Certified Production of Fresh, Campylobacter-Free Chickens

Certified Campylobacter-free poultry products have been produced in Denmark since 2002, the first example of fresh (unprocessed and nonfrozen) chickens labeled “Campylobacter free.” This success occurred partly through use of a 4-hour gel-based PCR testing scheme on fecal swabs. In this study, a faster, real-time PCR approach was validated in comparative and collaborative trials, based on recommendations from the Nordic system for validation of alternative microbiological methods (NordVal). The comparative real-time PCR trial was performed in comparison to two reference culture protocols on naturally contaminated samples (99 shoe covers, 101 cloacal swabs, 102 neck skins from abattoirs, and 100 retail neck skins). Culturing included enrichment in both Bolton and Preston broths followed by isolation on Preston agar and mCCDA. In one or both culture protocols, 169 samples were identified as positive. The comparative trial resulted in relative accuracy, sensitivity, and specificity of 98%, 95%, and 97%, respectively. The collaborative trial included nine laboratories testing neck skin, cloacal swab, and shoe cover samples, spiked with low, medium, and high concentrations of Campylobacter jejuni. Valid results were obtained from six of the participating laboratories. Accuracy for high levels was 100% for neck skin and cloacal swab samples. For low levels, accuracy was 100% and 92% for neck skin and cloacal swab samples, respectively; however, detection in shoe cover samples failed. A second collaborative trial, with an optimized DNA extraction procedure, gave 100% accuracy results for all three spiking levels. Finally, on-site validation at the abattoir on a flock basis was performed on 400 samples. Real-time PCR correctly identified 10 of 20 flocks as positive; thus, the method fulfilled the NordVal validation criteria and has since been implemented at a major abattoir.

**General information**

State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, Section of Poultry Diseases, Division of Poultry, Fish and Fur Animals, National Veterinary Institute, Section for Veterinary Epidemiology and public
Data Manipulation etc. for Data Received From Vose Consulting

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Publication date: 2006

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 239538
Publication: Research › Journal article – Annual report year: 2006

Risikovurdering gennemført af Danmarks Fødevareforskning vedr. effekten af at fjerne loftet på 500 dyrehedner pr. landbrugsejendom

General information
State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, Sektion for Eksoiske Virussygdomme, Division of Virology, National Veterinary Institute, Section of Poultry Diseases, Division of Poultry, Fish and Fur Animals, Section for Veterinary Diagnostics, Division of Veterinary Diagnostics and Research, Section for Veterinary Epidemiology and public sector consultancy
Publication date: 2006

Publication information
Publisher: Danmarks Fødevareforskning
Original language: Danish
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 240707
Publication: Research › Report – Annual report year: 2006

Survival and transmission of *Salmonella enterica* serovar typhimurium in an outdoor organic pig farming environment

It was investigated how organic rearing conditions influence the *Salmonella enterica* infection dynamics in pigs and whether *Salmonella* persists in the paddock environment. Pigs inoculated with *S. enterica* serovar Typhimurium were grouped with *Salmonella*-negative tracer pigs. Bacteriological and serological testing indicated that organic pigs were susceptible to *Salmonella* infections, as 26 of 46 (56%) tracer pigs turned culture positive. An intermittent and mainly low-level excretion of *Salmonella* (<100 cells g⁻¹) partly explains why the bacteriological prevalence appeared lower than the seroprevalence. *Salmonella* persisted in the paddock environment, as *Salmonella* was isolated from 46% of soil and water samples (n = 294). After removal of pigs, *Salmonella* was found in soil samples for up to 5 weeks and in shelter huts during the entire test period (7 weeks). Subsequent introduction of *Salmonella*-negative pigs into four naturally *Salmonella*-contaminated paddocks caused *Salmonella* infections of pigs in two paddocks. In one of these paddocks, all
tracer pigs (n = 10) became infected, coinciding with a previous high Salmonella infection rate and high Salmonella excretion level. Our results showed that pigs reared under organic conditions were susceptible to Salmonella infections (just like conventional pigs) and that Salmonella persisting in the paddock environment could pose an infection risk. A driving force for these infections seemed to be pigs with a high Salmonella excretion level, which caused substantial contamination of the environment. This suggests that isolation of animals as soon as a Salmonella infection is indicated by clinical symptoms of diarrhea could be a means of reducing and controlling the spread and persistence of Salmonella in outdoor organic pig production environments.

**General information**

State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, National Veterinary Institute, Royal Veterinary and Agricultural University, Statens Serum Institut
Authors: Jensen, A. N. (Intern), Dalsgaard, A. (Ekstern), Stockmarr, A. (Intern), Nielsen, E. M. (Ekstern), Baggesen, D. L. (Intern)
Pages: 1833-1842
Publication date: 2006
Main Research Area: Technical/natural sciences

**Publication information**

Journal: Applied and Environmental Microbiology
Volume: 72
Issue number: 3
ISSN (Print): 0099-2240
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.891 SNIP 1.308 CiteScore 4.14
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.857 SNIP 1.384 CiteScore 4.02
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.899 SNIP 1.414 CiteScore 4.25
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.975 SNIP 1.429 CiteScore 4.29
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.914 SNIP 1.455 CiteScore 4.12
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.887 SNIP 1.436
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.972 SNIP 1.528
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.156 SNIP 1.572
Web of Science (2008): Indexed yes
Porcine acute phase proteins in experimental models of infectious diseases.

General information
State: Published
Organisations: Innate Immunology, Division of Veterinary Diagnostics and Research, National Veterinary Institute, Section for Veterinary Epidemiology and public sector consultancy
Authors: Heegaard, P. M. H. (Intern), Stockmarr, A. (Intern), Sørensen, N. S. (Intern)
Publication date: 2005
Event: Abstract from 5th International Colloquium on Animal Acute Phase Proteins, Dublin, Ireland.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 242497
Publication: Research › Conference abstract for conference – Annual report year: 2005

Smitterisiko ved separering af gylle

General information
State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, Virology, Division of Veterinary Diagnostics and Research, National Veterinary Institute, Adaptive Immunology & Parasitology, Section for Veterinary Epidemiology and public sector consultancy
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Forskning i bioenergi
Volume: 6
ISSN (Print): 1604-6331
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
**Wildrisk: Classical swine fever and wild boar in Denmark: A risk analysis**

**General information**
State: Published
Organisations: National Veterinary Institute, Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, Sektion for Eksotiske Virussygdomme, Division of Virology, Danish Bacon and Meat Council, National Environmental Research Institute, Centre for Environmental Research Leipzig-Halle, Danish Institute for Food and Veterinary Research, Danish Veterinary and Food Administration
Authors: Alban, L. (Ekstern), Andersen, M. M. (Ekstern), Asferg, T. (Ekstern), Boklund, A. (Intern), Fernandez, N. (Ekstern), Goldbach, S. (Ekstern), Greiner, M. (Ekstern), Hejgaard, A. (Ekstern), Kramer-Schadt, S. (Ekstern), Stockmarr, A. (Intern), Thuilke, H. H. (Ekstern), Uttenthal, Å. (Intern), Ydesen, B. (Ekstern)
Number of pages: 118
Publication date: 2005

**Publication information**
Publisher: Danish Institute for Food and Veterinary Research
ISBN (Print): 87-91-58701-8
Main Research Area: Technical/natural sciences
Risk analysis, virus, wildrisk, wild boar
Source-ID: 240540
Publication: Research › Report – Annual report year: 2005

**Principles, application areas and an example of risk assessment conducted at the Danish Institute for Food and Veterinary Research**

The Department for Epidemiology and Risk Analysis at the Danish Institute for Food and Veterinary Research (DFVF) is concerned with risk analyses in the areas of food safety, zoonoses, antimicrobial resistance and OIE (World Organisation for Animal Health) list A and B diseases. The DFVF is responsible for the risk assessment component of the risk analysis process and provides advice and support for the risk management and risk communication component, which is generally under the auspices of the Danish Veterinary and Food Administration (DVFA). The paper presents guidelines for the conduct of risk assessments at the DFVF. Important elements of these guidelines are the independence between risk assessment and risk management, the commitment to science-based, transparent and fully documented procedures and adherence to a protocol that regulates the cooperation between DFVF and DVFA. Typical steps of a quantitative risk assessment are the description of the risk scenario, information retrieval, mathematical modelling with stochastic simulation, final risk estimation with a sensitivity analysis and reporting. The procedure is exemplified using a Monte Carlo simulation model for the assessment of the risk of BSE transmission to calves by tallow-based calf milk replacer.

**General information**
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute, National Food Institute, Department of Informatics and Mathematical Modeling, Division of Microbiology and Risk Assessment
Authors: Greiner, M. (Ekstern), Paisley, L. (Intern), Nørgaard, J. H. (Intern), Wong, D. L. F. (Intern), Andersen, J. S. (Intern), Stockmarr, A. (Intern), Korsgaard, H. (Intern), Sommer, H. M. (Intern), Hald, T. (Intern)
Pages: 177-181
Publication date: 2004
Main Research Area: Technical/natural sciences

**Publication information**
Journal: BERLINER UND MUNCHENER TIERARZTLICHE WOCHENSCHRIFT
Volume: 117
Issue number: 5-6
Use of existing surveillance data to detect welfare problems in Danish cattle: An evaluation of available data sources, with detection of existing herd health problems and associated risk factors

General information
State: Published
Organisations: Division of Microbiology and Risk Assessment, National Food Institute, Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Hill, A. (Ekstern), Chriel, M. (Ekstern), Jensen, V. F. (Intern), Vaarst, M. (Ekstern), Stockmarr, A. (Intern), Bruun, J. (Ekstern), Greiner, M. (Ekstern)
Publication date: 2004

Publication information
The distribution of particles in the plane dispersed by a simple 3-dimensional diffusion process

Populations of particles dispersed in the 2-dimensional plane from a single pointsource may be grouped as focus expansion patterns, with an exponentially decreasing density, and more diffuse patterns with thicker tails. Exponentially decreasing distributions are often modelled as the result of 2-dimensional diffusion processes acting to disperse the particles, while thick-tailed distributions tend to be modelled by purely descriptive distributions. Models based on the Cauchy distribution have been suggested, but these have not been related to diffusion modelling. However, the distribution of particles dispersed from a point source by a 3-dimensional Brownian motion that incorporates a constant drift, under the condition that the particle starts at a given height and is stopped when it reaches the xy plane (zero height) may be shown to result in both slim-tailed exponentially decreasing densities, and thick-tailed polynomially decreasing densities with infinite mean travel distance from the source, depending on parameter values. The drift in the third coordinate represents gravitation, while the drift in the first and second represents a (constant) wind. Conditions for the density having exponentially decreasing tails is derived in terms of gravitation and wind, with a special emphasis on applications to light-weighted particles such as fungal spores.
Comment on Stockmarr's "Likelihood ratios for evaluating DNA evidence when the suspect is found through a database search - The author replied as follows

General information
State: Published
Organisations: University of Copenhagen
Authors: Stockmarr, A. (Intern)
Pages: 978-980
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Biometrics
Volume: 57
Issue number: 3
ISSN (Print): 0006-341X
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 1.632 SNIP 1.115 CiteScore 1.35
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.005 SNIP 1.393 CiteScore 1.66
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.241 SNIP 1.398 CiteScore 1.57
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.07 SNIP 1.285 CiteScore 1.57
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.719 SNIP 1.39 CiteScore 1.69
Forekomsten af utilsigtede hændelser på sygehuse

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Schiøler, T. (Ekstern), Lipczak, H. (Ekstern), Pedersen, B. (Ekstern), Mogensen, T. (Ekstern), Bech, K. (Ekstern), Stockmarr, A. (Intern)
Pages: 5370-5378
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Ugeskrift for Laeger
Volume: 163
Issue number: 39
ISSN (Print): 0041-5782
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.02 SJR 0.11 SNIP 0.041
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.124 SNIP 0.077 CiteScore 0.03
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.129 SNIP 0.116 CiteScore 0.05
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.14 SNIP 0.122 CiteScore 0.06
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.146 SNIP 0.15 CiteScore 0.08
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.143 SNIP 0.157 CiteScore 0.1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.158 SNIP 0.169
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.156 SNIP 0.201
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.155 SNIP 0.17
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.147 SNIP 0.157
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.139 SNIP 0.163
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.142 SNIP 0.173
Scopus rating (2004): SJR 0.172 SNIP 0.209
Scopus rating (2003): SJR 0.145 SNIP 0.183
Scopus rating (2002): SJR 0.142 SNIP 0.141
Scopus rating (2001): SJR 0.145 SNIP 0.187
Scopus rating (2000): SJR 0.139 SNIP 0.194
Scopus rating (1999): SJR 0.144 SNIP 0.18
Original language: Danish

Bibliographical note
In Danish. Translated title: "The Occurrence of Adverse Events in Hospitals"
Source: orbit
Source-ID: 239568
Publication: Research - peer-review › Journal article – Annual report year: 2001

Kvalitetsudvikling af patientforløb i almen praksis baseret på forbedret tilgængelighed af diagnostiske undersøgelser: Et samarbejde mellem Københavns Praktiserende Lægers Laboratorium, Dansk Selskab for Almen Medicin og DSI Institut for Sundhedsvæsen

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Christensen, M. (Ekstern), Stockmarr, A. (Intern), Frølich, A. (Ekstern)
Publication date: 2001

Publication information
Publisher: DSI Institut for Sundhedsvæsen
Original language: Danish
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 241853
Publication: Research › Report – Annual report year: 2001

Diffusion modelling of spore dispersal using non-constant settling rates

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
En model for sygdomsspredning mellem afgrøder og wilde planter

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern), Østergård, H. (Intern), Andreasen, V. (Ekstern), Munk, L. (Ekstern)
Pages: 43-47
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Miljøforskning
Issue number: 43
ISSN (Print): 0907-4678
Original language: Danish
Source: orbit
Source-ID: 301499
Publication: Communication › Journal article – Annual report year: 2000

Letter to the editor of Biometrics - The authors replied as follows

General information
State: Published
Organisations: Unknown
Authors: Stockmarr, A. (Intern)
Pages: 1275-1276
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Biometrics
Volume: 56
Issue number: 4
ISSN (Print): 0006-341X
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 1.632 SNIP 1.115 CiteScore 1.35
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.005 SNIP 1.393 CiteScore 1.66
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.241 SNIP 1.398 CiteScore 1.57
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.07 SNIP 1.285 CiteScore 1.57
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.719 SNIP 1.39 CiteScore 1.69
ISI indexed (2012): ISI indexed yes
Matematisk modellering af sygdomsspredning mellem afgrøder og vilde planter

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 2000
Event: Abstract from Faglig dag PBK, Risø, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 300939
Publication: Research › Conference abstract for conference – Annual report year: 2000

Observed patterns of dispersal of wheat yellow rust spores from a point source

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 2000
Event: Abstract from Workshop on mathematical models for pathogen spread especially comparing methods for crop-pathogen systems versus natural plant ecosystems, Risø (DK), 9 Nov, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 301615
Publication: Research › Conference abstract for conference – Annual report year: 2000

Om brug og misbrug af sandsynlighedsregning ved vægtning af DNA-profil evidens

General information
State: Published
Simulation of spatial stochastic models for spread of spores between fields and surrounding natural populations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 2000
Event: Abstract from European Science Foundation workshop on environmental implications of genetically modified plants with fungal disease resistance, Roskilde (DK), 10-11 Nov, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 301613
Publication: Research › Conference abstract for conference – Annual report year: 2000

Stochastic models for the spatial development of a fungal plant disease

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 2000
Event: Abstract from Meeting at Copenhagen University, Department of Biostatistics, Copenhagen (DK), 2 Oct, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 302139
Publication: Research › Conference abstract for conference – Annual report year: 2000

The choice of hypotheses in the evaluation of DNA profile evidence

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Pages: 143-159
Publication date: 2000

Host publication information
Title of host publication: Statistical science in the courtroom
Place of publication: Berlin
Publisher: Springer
Editor: Gastwirth, J.
ISBN (Print): 0-287-98997-8
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 301423
Publication: Research - peer-review › Book chapter – Annual report year: 2000


General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
**Brug og misbrug af sandsynlighedsteori i retsmedicinske evalueringer af DNA-profiler**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 1999
Event: Abstract from PBK-Seminar, Rise, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 310586
Publication: Research › Conference abstract for conference – Annual report year: 1999

**DNA-fingeraftryk i kriminalsager - kan man dømme efter store tals lov?**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Stockmarr, A. (Intern)
Publication date: 1999
Event: Abstract from Møde i Institut for Folkesundhedsvideneskab, København (DK), 11 May, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 299289
Publication: Research › Conference abstract for conference – Annual report year: 1999

**Likelihood ratios for evaluating DNA evidence when the suspect is found through a database search**

**General information**
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute
Authors: Stockmarr, A. (Intern)
Pages: 671-677
Publication date: 1999
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Biometrics
Volume: 55
Issue number: 3
ISSN (Print): 0006-341X
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 1.632 SNIP 1.115 CiteScore 1.35
Limits of autoregressive processes with a special emphasis on relations to cointegration theory

General information
State: Published
Organisations: University of Copenhagen
Authors: Stockmarr, A. (Intern), Jacobsen, M. (Ekstern)
Publication date: 1996

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 239901
Publication: Research - peer-review › Journal article – Annual report year: 1999

Gaussian Diffusions and Autoregressive Processes: Weak Convergence and Statistical Inference

General information
State: Published
Organisations: Section for Veterinary Epidemiology and public sector consultancy, Division of Veterinary Diagnostics and Research, National Veterinary Institute

Source: orbit
Source-ID: 244620
Publication: Research › Ph.D. thesis – Annual report year: 1996
Authors: Stockmarr, A. (Intern), Jacobsen, M. (Ekstern)
Pages: 403-419
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Volume: 21
Issue number: 4
ISSN (Print): 0303-6898
Ratings:
BFI (2018): BFI-level 2
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): SJR 1.563 SNIP 1.319 CiteScore 1.14
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.529 SNIP 1.203 CiteScore 0.98
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.534 SNIP 1.037 CiteScore 0.9
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.157 SNIP 1.486 CiteScore 1.24
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.3 SNIP 1.382 CiteScore 1.38
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.738 SNIP 1.216 CiteScore 1.05
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.379 SNIP 0.93
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.633 SNIP 1.614
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.222 SNIP 1.672
Scopus rating (2007): SJR 2.076 SNIP 1.619
Scopus rating (2006): SJR 1.515 SNIP 1.444
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 2.261 SNIP 1.648
Scopus rating (2004): SJR 2.073 SNIP 1.198
Scopus rating (2003): SJR 1.878 SNIP 1.248
Scopus rating (2002): SJR 1.231 SNIP 0.858
Scopus rating (2001): SJR 1.428 SNIP 1.099
Scopus rating (2000): SJR 1.233 SNIP 1.101
Scopus rating (1999): SJR 1.369 SNIP 1.3
Original language: English
Source: orbit
Source-ID: 241845
Publication: Research - peer-review › Journal article – Annual report year: 1994

Projects:

Development and implementation of high-dimensional normal behavior areas for citizens with dementia, in proactive care at nursing homes
Technical University of Denmark
Period: 01/01/2018 → 31/12/2020
Number of participants: 4
Phd Student:
Khomiakov, Maxim (Intern)
Supervisor:
Burattin, Andrea (Intern)
Erbsøl, Bjarne Kjær (Intern)
Main Supervisor:
Stockmarr, Anders (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Big Data Processing and shaping in SeaStatus
Technical University of Denmark
Period: 15/08/2017 → 14/08/2020
Number of participants: 3
Phd Student:
Sengupta, Sayantan (Intern)
Supervisor:
Erbsøl, Bjarne Kjær (Intern)
Main Supervisor:
Stockmarr, Anders (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Human Behavior of Track Pilot
Master Thesis Project
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Dynamical Systems
FORCE Technology
Period: 29/08/2016 → 29/01/2017
Number of participants: 2
Time Series Analysis, Navigation, PID controller
Supervisor:
Poulsen, Niels Kjølstad (Intern)
Main Supervisor:
Stockmarr, Anders (Intern)
Project

Multivariate Time Series Modelling of Australian Data on Deaths from Homicide and Suicides
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Period: 22/08/2016 → 01/01/2017
Number of participants: 2
Time Series Analysis, Multivariate, MARIMA, Australia
Supervisor:
Spliid, Henrik (Intern)
Main Supervisor:
Automated NIR management

Technical University of Denmark
Period: 15/11/2015 → 17/08/2019
Number of participants: 5
PhD Student:
Larsen, Jacob Søgaard (Intern)
Supervisor:
Larsen, Anders (Ekstern)
Skov, Thomas Hjort (Intern)
Stockmarr, Anders (Intern)
Main Supervisor:
Ersbøll, Bjarne Kjær (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD

Statistical modelling of space-time processes with

Technical University of Denmark
Period: 01/11/2013 → 16/08/2017
Number of participants: 7
PhD Student:
Lenzi, Amanda (Intern)
Supervisor:
Clemmensen, Line Katrine Harder (Intern)
Pinson, Pierre (Intern)
Main Supervisor:
Ersbøll, Bjarne Kjær (Intern)
Examiner:
Stockmarr, Anders (Intern)
Girard, Robin (Ekstern)
Thorarinsdottir, Thordis L. (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Science Without Borders, Brasi

Relations
Publications:
Statistical modelling of space-time processes with application to wind power.
Project: PhD

Short range modelling of Culicoides dispersal

National Veterinary Institute
Period: 01/02/2010 → 29/05/2013
Number of participants: 6
PhD Student:
Kirkeby, Carsten Thure (Intern)
Supervisor:
Bedker, Rene (Intern)
Stockmarr, Anders (Intern)
Main Supervisor:
Lind, Peter (Intern)
Examiner:
Ersbøll, Bjarne Kjær (Intern)
Chirico, Jan C. F. (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Institut stipendie (DTU) Samf.
Project: PhD

Opbygning af et Dansk veterinært beredskab for Bluetongue
Section for Veterinary Epidemiology and public sector consultancy
Division of Veterinary Diagnostics and Research
National Veterinary Institute
Aarhus University
Roskilde University
University of Copenhagen
Period: 01/01/2008 → 31/03/2011
Number of participants: 7
Project ID: 22237
Project participant:
Stockmarr, Anders (Intern)
Skovgård, Henrik (Ekstern)
Kristensen, Michael (Ekstern)
Project Manager, organisational:
Bødker, Rene (Intern)
Jensen, Karl-Martin Vagn (Ekstern)
Nielsen, Søren Achim (Ekstern)
Balstrøm, Thomas (Ekstern)

Financing sources
Source: Forskningsprojekter - Fødevareministeriet
Name of research programme: Forskningsprojekter - Fødevareministeriet
Amount: 678,000.00 Danish Kroner
Project

Optimizing the control of foot-and-mouth disease in Denmark by simulation
Section for Veterinary Epidemiology and public sector consultancy
Division of Veterinary Diagnostics and Research
National Veterinary Institute
DTU Data Analysis
Department of Informatics and Mathematical Modeling
University of Copenhagen
University of California at Davis
Danish Veterinary and Food Administration
United States Department of Agriculture
Danish Meat Association
Danish Cattle Federation
Period: 01/01/2008 → 31/12/2011
Number of participants: 12
Project ID: 22314
Contact person:
Activities:

**Bryghuset - Svendborg Demensby**
Period: 2 Feb 2018
Anders Stockmarr (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Documents:
Bryghuset - Svendborg Demensby

**Related event**
**Robotter på Tværs: Workshop om robotter, Innovationsfonden**
02/02/2018 → 02/02/2018
Odense, Denmark
Activity: Talks and presentations › Conference presentations

**PACE – Proactive Care for Elderly People with Dementia**
Period: 2 Feb 2018
Anders Stockmarr (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Documents:
Præsentation PACE 02022018

**Related event**
**Robotter på Tværs: Workshop om robotter, Innovationsfonden**
02/02/2018 → 02/02/2018
Odense, Denmark
Activity: Talks and presentations › Conference presentations

**Innovationsfondens Prisuddeling 2018**
Period: 26 Jan 2018
Anders Stockmarr (Organizer)
Description
invited participation
Links:
https://innovationsfonden.dk/da/priser

Related event
Innovationsfondens Prisuddeling 2018
26/01/2018 → 26/01/2018
Copenhagen, Denmark
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Statistical Genetics (02938)
Period: 2 Jan 2018 → 29 Jan 2018
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Description
phd course
Degree of recognition: Local
Activity: Other

Statistical Genetics (02950)
Period: 2 Jan 2018 → 15 Jan 2018
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Description
phd course
Degree of recognition: Local
Activity: Other

Kroniske Sygdomme i Hovedstadsregionen – Borgerklynger, Storforbrugere og Socioøkonomiske Effekter
Period: 14 Sep 2017
Anders Stockmarr (Invited speaker)
Anne Frølich (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: Local

Related event
Tredie workshop for forsker-og udviklnetværk om multisygdom i Region Hovedstaden
14/09/2017 → 14/09/2017
København, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

PACE – Proactive Care for Elderly People with Dementia
Period: 7 Sep 2017
Anders Stockmarr (Guest lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event

Hillerød city council: committee meeting
07/09/2017 → 07/09/2017
Hillerød, Denmark
Activity: Talks and presentations › Talks and presentations in private or public companies and organisations

Statistical Genetics (02586)
Period: 4 Sep 2017 → 9 Dec 2017
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
course at master level
Degree of recognition: Local
Activity: Other

Statistical modelling of space-time processes with application to wind power
Period: 16 Jun 2017
Anders Stockmarr (Internal examiner)
Thordis Thorarinsdottir (External examiner)
Robin Girard (External examiner)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Chairman of Phd defense
Degree of recognition: Local
Documents:
Announcement PhD defence Amanda Lenzi
Popular Science Summary Amanda Lenzi
Activity: Examinations and supervision › Internal examination

Introduction to Applied Statistics with R for PhD Students
Period: 9 Jun 2017 → 30 Jun 2017
Anders Stockmarr (Lecturer)
Bjarne Kjær Erbsøll (Lecturer)
Elisabeth Wreford Andersen (Guest lecturer)
Murat Kulahci (Lecturer)
Andreas Baum (Lecturer)
Camilla Thyregod (Other)
Jesper Fink Andersen (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related organisation

Introduction to Applied Statistics with R for PhD Students
Stockmarr, A. (Lecturer), Erbsøll, B. K. (Lecturer), Andersen, E. W. (Guest lecturer), Kulahci, M. (Lecturer), Baum, A. (Lecturer), Thyregod, C. (Other), Andersen, J. F. (Other)
9 Jun 2017 → 30 Jun 2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities
**Introduction to R**
Period: 22 May 2017
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Department of Management Engineering

**Description**
Invited seminar talk
Degree of recognition: Local
Documents:
Intro R DTU Management Engineering
Intro R DTU Management Engineering

**Related organisation**

**Introduction to R**
Stockmarr, A. (Speaker)
22 May 2017
Activity: Talks and presentations › Guest lectures, external teaching and course activities at other universities

**Theriogenology (Journal)**
Period: 6 Apr 2017
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: International

**Related journal**
Theriogenology
0093-691X
Central database
Activity: Research › Peer review of manuscripts

**Burden of disease of barbecued meat - who's at risk?**
Period: 31 Mar 2017
Lea Sletting Jakobsen (Guest lecturer)
Stylianos Georgiadis (Guest lecturer)
Bo Friis Nielsen (Guest lecturer)
Anders Stockmarr (Guest lecturer)
Elena Boriani (Guest lecturer)
Lene Duedahl-Olesen (Guest lecturer)
Tine Hald (Guest lecturer)
Sara Monteiro Pires (Guest lecturer)
National Food Institute
Research Group for Risk-Benefit
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Research Group for Genomic Epidemiology
IC3 and IC4 Trains Under Risk of Blocking their Wheels - A Big Data Case Story
Period: 21 Mar 2017
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
DTU Executive School of Business
Degree of recognition: Local
Documents: DTU Management 2103017

Visit from Antwerp Management School to DTU Business
20/03/2017 → 22/03/2017
Activity: Talks and presentations › Conference presentations

Time Series Analysis (02417)
Period: 17 Feb 2017
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Statistics
Period: 25 Jan 2017 → 26 Jan 2100
Anders Stockmarr (External examiner)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Exam in statistics at the publich health education programme, KU
Activity: Examinations and supervision › External examination

Statistical Genetics (02938)
Period: 6 Jan 2017 → 27 Jan 2017
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Lectured by Anders Stockmarr
Related event

Statistical Genetics
06/01/2017 → 27/01/2017
Kgs. Lyngby, Denmark
Activity: Other

Statistical Genetics (02950)
Period: 6 Jan 2017 → 14 Jan 2017
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event

Statistical Genetics
06/01/2017 → 14/01/2017
Kgs. Lyngby, Denmark
Activity: Other

Introduction to applied statistics and R for PhD students (02935)
Anders Stockmarr (Speaker)
Guillermina Eslava (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related organisation

Introduction to applied statistics and R for PhD students (02935)
Stockmarr, A. (Speaker), Eslava, G. (Speaker)
4 Nov 2016 → 28 Nov 2016
Activity: Talks and presentations › Conference presentations

Big data og glatte skinner
Period: 11 Oct 2016
Anders Stockmarr (Invited speaker)
Statistics and Data Analysis
Department of Applied Mathematics and Computer Science

Description
(in Danish)
Documents:
Kollektiv Trafik Konferencen 11102016 ANST

Related event

Kollektiv Trafik Konferencen 2016
10/10/2016 → 11/10/2016
Korsør, Denmark
Activity: Talks and presentations › Conference presentations

IC3 and IC4 Trains Under Risk of Blocking their Wheels - A Big Data Case story
Period: 3 Oct 2016
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Documents:
Big Data Business Academy 03102016 ANST

Related event

Big Data Business Academy
03/10/2016 → 05/10/2016
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Veterinary Journal (Journal)
Period: 3 Sep 2016 → 17 Sep 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science

Statistics and Data Analysis

Description
The Veterinary Journal
peer review of manuscript

Related journal
Veterinary Journal
1090-0233
Central database
Activity: Research › Peer review of manuscripts

Statistical Genetics (02586)
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science

Statistics and Data Analysis

Description
master level course
Degree of recognition: Local
Activity: Other

Water permeability
Anders Stockmarr (Consultant)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
External consultancy

Related external organisation

MBH-international A/S
Allerød, Denmark
Activity: Public and private sector consultancy › Consultancy
BAOJ Pediatrics (Journal)
Period: 20 May 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal
BAOJ Pediatrics
Local database
Activity: Research › Peer review of manuscripts

Biology Letters (Journal)
Period: 20 May 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Biology Letters

Related journal
Biology Letters
1744-9561
Central database
Activity: Research › Peer review of manuscripts

Veterinary Journal (Journal)
Period: 13 May 2016 → 20 May 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal
Veterinary Journal
1090-0233
Central database
Activity: Research › Peer review of manuscripts

Biology Letters (Journal)
Period: 27 Apr 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Biology Letters

Related journal
Biology Letters
1744-9561
Nutrition & Metabolism (Journal)
Period: 27 Apr 2016
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Introduction to applied statistics and R for PhD students (02935)
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

International Journal of Agricultural Sciences (Journal)
Period: 13 Nov 2015 → 19 Nov 2015
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Veterinary Journal (Journal)
Period: 3 Nov 2015 → 5 Nov 2015
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Which priorities for a European policy on multimorbidity?
Period: 27 Oct 2015
Anders Stockmarr (Participant)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
participation in conference
Links:
http://ec.europa.eu/health/ageing/events/ev_20151027_en.htm (Conference home page)

Related event
Which priorities for a European policy on multimorbidity?
27/10/2015 → 27/10/2015
Brussels, Belgium
Activity: Attending an event › Participating in or organising a conference

BSc program Strategic Analysis and Systems Design (Event)
Period: 6 Oct 2015 → …
Anders Stockmarr (Participant)
Department of Applied Mathematics and Computer Science
Department of Management Engineering

Description
Member of monitoring group
Member of DTU Internal monitoring group for the BSc program Strategic Analysis and Systems Design
Links:
http://www.dtu.dk/english/education/bachelor--beng-and-bsc-/bsc/strategic_analysis_and_systems_design (Strategic Analysis and Systems Design)

Related event
BSc program Strategic Analysis and Systems Design
06/10/2015 → …
Denmark
Activity: Membership › Membership of research networks or expert groups

P L o S One (Journal)
Period: 21 Sep 2015 → 31 Dec 2015
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal
P L o S One
1932-6203
Indexed in DOAJ
Central database
Activity: Research › Peer review of manuscripts

National Academy Science Letters (Journal)
Period: 16 Sep 2015 → 1 Oct 2015
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal
National Academy Science Letters
Local database
Activity: Research › Peer review of manuscripts

Statistical Quality Control (02413)
Period: 3 Sep 2015 → 9 Dec 2015
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event
Statistical Quality Control
03/09/2015 → 09/12/2015
Kgs. Lyngby, Denmark
Activity: Other

Statistical Genetics (02586)
Period: 31 Aug 2015 → 17 Dec 2015
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
lectured by Anders Stockmarr

Related event
Statistical Genetics
31/08/2015 → 17/12/2015
Kgs. Lyngby, Denmark
Activity: Other

IC3 and IC4 Trains Under Risk of Blocking their Wheels: A case study on challenges when working with data from multiple databases
Period: 26 Aug 2015
Anders Stockmarr (Invited speaker)
Statistics and Data Analysis
Department of Applied Mathematics and Computer Science
Documents:
Big Data Data Warehousing and Data Analytics ANST 2608_2015

Related event
Big Data, Data Warehousing, and Data Analytics: EU-COST FAIM Training School
26/08/2015 → 29/08/2015
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Battling Bluetongue and Schmallenberg virus: Local scale behavior of transmitting vectors
Period: 10 Aug 2015
Anders Stockmarr (Invited speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
National Veterinary Institute
Section for Epidemiology
Documents:
Infectious Diseases 1008 2015 Anders Stockmarr
Abstract_Anders_Stockmarr_et_al_Infectious_Diseases_2015

Related event

World Congress on Infectious Diseases 2015
10/08/2015 → 12/08/2015
London, United Kingdom
Activity: Talks and presentations › Conference presentations

Introduction to applied statistics and R for PhD students (02935)
Period: 8 Jun 2015 → 26 Jun 2015
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations

Statistical Genetics (02938)
Period: 1 Jun 2015 → 19 Jun 2015
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
phd course
Lectured by Anders Stockmarr

Related event

Statistical Genetics
01/06/2015 → 19/06/2015
Kgs. Lyngby, Denmark
Activity: Other

Aerobiologica (Journal)
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal

Aerobiologica
Local database
Activity: Research › Peer review of manuscripts
Time Series Analysis (TSA); 02417
Period: 5 Feb 2015 → 30 Jun 2015
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event

Time Series Analysis
05/02/2015 → 30/06/2015
Kgs. Lyngby, Denmark
Activity: Other

Social inequality in obesity and the obesity epidemic for children: A review
Period: 26 Jan 2015
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Documents:
Symposium i Anvendt Statistik 2015 ANST

Related event

37th Symposium i Anvendt Statistik 2015
26/01/2015 → 28/01/2015
Kongens Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

Introduction to applied statistics and R for PhD students (02935)
Period: 3 Nov 2014 → 21 Nov 2014
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations

National Academy Science Letters (Journal)
Period: 9 Sep 2014 → 23 Sep 2014
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal

National Academy Science Letters
Local database
Activity: Research › Peer review of manuscripts

Statistical Genetics
Period: 1 Sep 2014 → 9 Dec 2014
Anders Stockmarr (Lecturer)
Department of Systems Biology
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Lectured by Andres Stockmarr

Related event

Statistical Genetics
01/09/2014 → 09/12/2014
Kgs. Lyngby, Denmark
Activity: Other

Introduction to applied statistics and R for PhD students (02935)
Period: 21 May 2014 → 9 Jun 2014
Anders Stockmarr (Lecturer)

Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related external organisation

Unknown external organisation
Activity: Talks and presentations › Conference presentations

Programming in R
Period: 30 Apr 2014 → 2 May 2014
Anders Stockmarr (Participant)

Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
Continuing education course lectured by Anders Stockmarr and Kasper Kristensen

Related external organisation

Amadeus Scandinavia
Copenhagen, Denmark
Activity: Other

National Academy Science Letters (Journal)
Period: 9 Apr 2014 → 13 May 2014
Anders Stockmarr (Reviewer)

Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal

National Academy Science Letters

Local database
Activity: Research › Peer review of manuscripts

Programming in R
Anders Stockmarr (Lecturer)

Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
3 day intensive course.

Course lectured by Anders Stockmarr and Kasper Kristensen.

Related event

Course: Programming in R
24/03/2014 → 26/03/2014
Lyngby, Denmark
Activity: Other

Programming in R
Period: 4 Feb 2014 → 6 Feb 2014
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
3 day intensive course.

Course lectured by Anders Stockmarr and Kasper Kristensen.

Related event

Course: Programming in R
04/02/2014 → 06/02/2014
Denmark
Activity: Other

Symposium i Anvendt Statistik
Period: 28 Jan 2014
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Description
IC3 and IC4 Trains at risk for Blocking Their Wheels
Documents:
Symposium i Anvendt Statistik 28012014 ANST version 2

Related event

Symposium i Anvendt Statistik 2014
27/01/2014 → 29/03/2014
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

National Academy Science Letters (Journal)
Period: 25 Jan 2014 → 8 Feb 2014
Anders Stockmarr (Reviewer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related journal

National Academy Science Letters
Local database
Activity: Research › Peer review of manuscripts

**Statistical Genetics**
Period: 2 Sep 2013 → 10 Dec 2013
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Center for Biological Sequence Analysis
Description
13 week course.

**Related event**
**Statistical Genetics**
02/09/2013 → 10/12/2013
Lyngby, Denmark
Activity: Talks and presentations › Conference presentations

**Statistical Genetics (02586)**
Period: 2 Sep 2013 → 9 Dec 2013
Anders Stockmarr (Other)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Degree of recognition: Local
Activity: Other

**PMWS development in pigs from affected farms in Spain and Denmark**
Period: 18 Mar 2013
Anders Stockmarr (Invited speaker)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Documents:
Hangzhou 18012013 ANST

**Related event**
**BIT's 5th Annual World Congress of Vaccine**
18/03/2013 → 20/03/2013
Hangzhou, China
Activity: Talks and presentations › Conference presentations

**Time Series Analysis**
Period: 7 Feb 2013 → 16 May 2013
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

**Related external organisation**
**Unknown external organisation**
Activity: Talks and presentations › Conference presentations
Symposium i Anvendt Statistik 2013
Period: 28 Jan 2013 → 29 Jan 2013
Anders Stockmarr (Speaker)
Statistics and Data Analysis
Department of Applied Mathematics and Computer Science

**Description**
PMWS development in pigs from affected farms in Spain and Denmark

**conference participation**

**Documents:**
PMWS development in pigs from affected farms in Spain and Denmark

**Related event**
Symposium i Anvendt Statistik 2013
28/01/2013 → 29/01/2013
Århus, Denmark
Activity: Talks and presentations › Conference presentations

Statistikseminar
Period: 6 Nov 2012
Anders Stockmarr (Speaker)
Statistics and Data Analysis
Department of Applied Mathematics and Computer Science

**Description**
Regressions modeller – Hvad regresserer vi på og hvorfor? (in danish)

**Documents:**
Regressions modeller – Hvad regresserer vi på og hvorfor?

**Related event**
Statistikseminar
06/11/2012 → 06/11/2012
Copenhagen, Denmark
Activity: Other

Time Series Analysis
Period: 7 Sep 2012 → 7 Dec 2012
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

**Related event**
Time Series Analysis
07/09/2012 → 07/12/2012
Denmark
Activity: Other

24th Nordic Conference in Mathematical Statistics
Period: 10 Jun 2012 → 14 Jun 2012
Anders Stockmarr (Participant)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Detection of Dairy Herds at Risk for Changing Salmonella Dublin status

24th Nordic Conference in Mathematical Statistics
10/06/2012 → 14/06/2012
Umeå, Sweden
Activity: Attending an event › Participating in or organising a conference

Time Series Analysis
Period: 2 Feb 2012 → 3 May 2012
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

34th Symposium i Anvendt Statistik 2012
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science

Statistikseminar
Period: 16 Jan 2012
Anders Stockmarr (Speaker)
Department of Applied Mathematics and Computer Science

Description
conference participation
Documents:
Detection of Dairy Herds at risk for changing Salmonella Dublin status

Related event

34th Symposium i Anvendt Statistik 2012
01/01/2012 → 25/01/2012
Copenhagen, Denmark
Activity: Talks and presentations › Conference presentations

Statistics and Data Analysis

Description
Optimal combinations of acute phase proteins for detecting infectious disease in pigs

seminar participation
Documents:
Optimal combinations of acute phase proteins for detecting infectious disease in pigs

Related event
Expert Workshop on Risk Modelling using R
Period: 21 Nov 2011 → 22 Nov 2011
Anders Stockmarr (Participant)
Statistics and Data Analysis
Department of Applied Mathematics and Computer Science

Description
Bundesinstitut für Risikobewertung (BfR)

workshop

Related event
Expert Workshop on Risk Modelling using R
Berlin, Germany
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Time Series Analysis (TSA); 02417
Period: 2 Sep 2011 → 2 Dec 2011
Anders Stockmarr (Lecturer)
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis

Related event
Time Series Analysis
02/09/2011 → 02/12/2011
Kgs. Lyngby, Denmark
Activity: Other

Time Series Analysis (TSA); 02417
Period: 3 Feb 2011 → 5 May 2011
Anders Stockmarr (Lecturer)
Section for Veterinary Epidemiology and public sector consultancy
Department of Applied Mathematics and Computer Science

Related event
Time Series Analysis
03/02/2011 → 05/05/2011
Kgs. Lyngby, Denmark
Activity: Other

Time Series Analysis (TSA); 02417
Period: 3 Sep 2010 → 3 Dec 2010
Anders Stockmarr (Lecturer)
Section for Epidemiology
Department of Applied Mathematics and Computer Science

Description
Place: DTU Informatics
Related event

Time Series Analysis  
03/09/2010 → 03/12/2010  
Kgs. Lyngby, Denmark  
Activity: Other

Time Series Analysis (TSA): 02417  
Period: 4 Sep 2009 → 4 Dec 2009  
Anders Stockmarr (Lecturer)  
Division of Veterinary Diagnostics and Research  
Section for Veterinary Epidemiology and public sector consultancy  
National Veterinary Institute  

Description  
Lectured by Anders Stockmarr

Related event

Time Series Analysis  
04/09/2009 → 04/12/2009  
Kgs. Lyngby, Denmark  
Activity: Other

Time Series Analysis (TSA): 2417  
Period: 5 Feb 2009 → 7 May 2009  
Anders Stockmarr (Lecturer)  
Division of Veterinary Diagnostics and Research  
Section for Veterinary Epidemiology and public sector consultancy  
National Veterinary Institute  

Description  
Place: DTU Informatics

Related event

Time Series Analysis  
05/02/2009 → 07/05/2009  
Kgs. Lyngby, Denmark  
Activity: Other

Time Series Analysis (TSA): 2417  
Anders Stockmarr (Lecturer)  
Division of Veterinary Diagnostics and Research  
Section for Veterinary Epidemiology and public sector consultancy  
National Veterinary Institute  

Description  
Place: DTU Informatics

Related event

Time Series Analysis  
29/08/2008 → 12/12/2008  
Kgs. Lyngby, Denmark  
Activity: Other
Early detection of Salmonella Dublin herds at risk for changing test status in the Danish surveillance program
Period: 22 May 2008
Anders Stockmarr (Speaker)
National Veterinary Institute
Division of Veterinary Diagnostics and Research
Section for Veterinary Epidemiology and public sector consultancy
Description
Place: D4, Nordre Sti, KU LIFE
Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations

Seroconversion and Maternal Immunity as risk factors for pigs acquiring PMWS
Period: 20 May 2008
Anders Stockmarr (Speaker)
National Veterinary Institute
Division of Veterinary Diagnostics and Research
Section for Veterinary Epidemiology and public sector consultancy
Description
Place: 8th PCVD Meeting, Budapest, Hungary
Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations

Serokonvertering og maternel immunitet som riskofaktorer for udvikling af PMWS
Period: 29 Apr 2008
Anders Stockmarr (Speaker)
National Veterinary Institute
Division of Veterinary Diagnostics and Research
Description
Place: Danish Meat Association, Axelborg, Copenhagen
Related external organisation
Unknown external organisation
Activity: Talks and presentations › Conference presentations

Dimensions of socioeconomic status related to body mass index among Danish women and men
Period: 1 Jan 2006 → …
Anders Stockmarr (Speaker)
National Veterinary Institute
Division of Veterinary Diagnostics and Research
Section for Veterinary Epidemiology and public sector consultancy
Description
Press clippings:

Can I use mathematics to win in Lotto?
Anders Stockmarr
25/04/2016
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis

Media contribution (1)

Can I use mathematics to win in Lotto?
25/04/2016
Videnskab.dk, Web
http://videnskab.dk/sporg-videnskaben/kan-jeg-bruge-matematik-til-vinde-i-lotto
Anders Stockmarr
Department of Applied Mathematics and Computer Science, Statistics and Data Analysis
Press / Media